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# Med+ 2024 poster booklets

November 2024

rcpconferences.co.uk/med-plus-2024

# Iron Deficiency Screening and Appropriate Correction in Patients with Decompensated Heart Failure; A 5 months retrospective review

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## Introduction

- Up to 80% of Decompensated Heart failure (DHF) patients are Iron Deficient (ID)
- Correcting Iron Deficiency reduced morbidity and hospital admissions in this population.
- The European Cardiology Society (ECS) recommends screening and correction of ID in symptomatic HFrEF Patients

## Aims

1. Measure Screening levels of ID in decompensated HFrEF Patients
2. Measure Treatment rates with IV iron

## Methodology

Retrospective study of DHF patients discharged from ACU* in Pilgrim and ACSS* in Lincoln County Hospital over a **5 month** period .**164** patients (**124** HFrEF) identified. The data retrieved included: Hb* ,Ferritin, TSAT%* from WebV*, Ejective Fraction from Echo results. The ECS guidelines were used to Identify patients qualifying for IV iron. Their respective EPMA* was checked for a prescription of Iron.

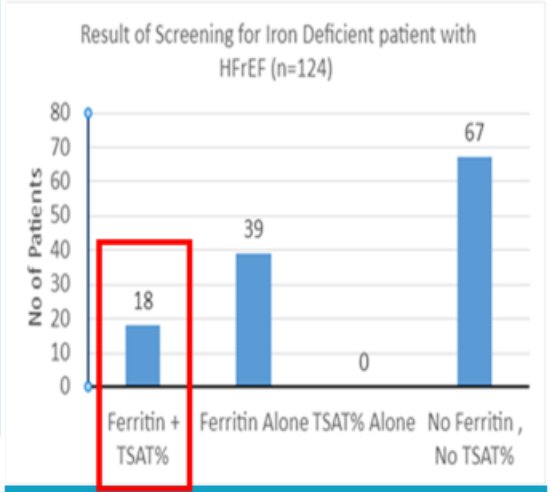



**Figure 1: Screening Results**

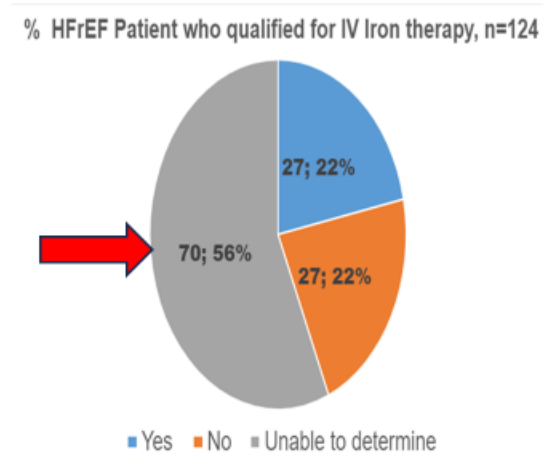
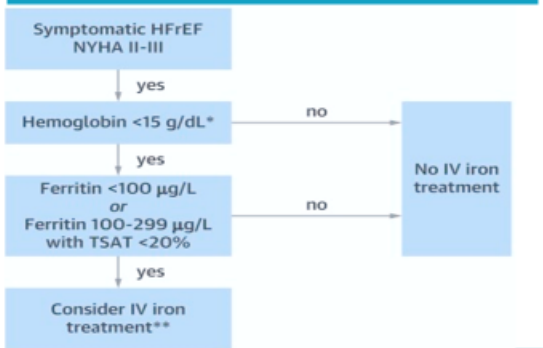



**Figure 2: Qualifying Patients**

| | |
|---|---|
| **Patient qualifying for IV iron therapy** | **27** |
| Patients that received IV therapy | 11 |
| Treatment rate (%) | 41 |

**Figure 3: IV iron treatment rate**




## Results

1. Only **15%** of the 124 HFrEF Patients were fully Screened for Iron Deficiency (Figure 1)
2. Iron Deficiency status of **56%** of this population was indeterminable due to poor screening (Figure 2)
3. Only **27** patient were identified as requiring IV therapy
4. Of the 27 patients That qualified for IV therapy only **41%** received it (Figure 3).

## Conclusion

- Very low screening resulted in ID status being indeterminable for most patients.
- As a result, ID was undiagnosed and untreated in many patients
- A low treatment rate compounded the number of untreated patients.
- Many patients missed out on therapy shown to improve symptoms and reduce admissions

## Recommendation

1. Incorporating ID screening and IV corrections in Local Heart Failure Guidelines
2. ECS to change recommended Screening from 'Periodically' to a set interval .
3. Further Audit and QIPs aimed at improving results

## References

Theresa A McDonagh, Marco Metra, Marianna Adamo, et al. ESC Scientific Document Group , 2023 Focused Update of the 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure:

## Evidence for IV Iron therapy In Heart Failure

1. **IRONMAN Trial;** 70 UK hospital ,1869 Patients : IV iron patients, reduced recurrent hospitalisation and cardiovascular deaths
2. **AFFIRM –AHMF** 1110 patients :Significant reduction in total heart failure hospitalisation in treatment group
3. **FAIR-HF Trial** 459 patients: Significantly improved Patient global assessment and NYHA Functional class after 24 weeks.

*ACU Acute Cardiac Unit *ACCS- Acute Cardiac Short Stay *WebV -Hospital electronic record *Hb Haemoglobin *TSAT% Transferrin Saturation % *EPMA Electronic prescribing & Medicine Administration

ACUTE MEDICAL UNIT (AMU), ROYAL BLACKBURN HOSPITAL

# A QIP ON CURB-65 SCORE DOCUMENTATION FOR PATIENTS WITH CAP

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NHS East Lancashire Hospitals NHS Trust
A University Teaching Trust
Safe | Personal | Effective

## BACKGROUND:

The CURB-65 score is a key tool for assessing CAP severity and predicting mortality, crucial for reducing hospitalizations and optimizing resources (Chalmers et al., 2010; Lim et al., 2003; NICE, 2014).

## ISSUE

A lack of CURB-65 score documentation for CAP patients in AMU department at Royal Blackburn Hospital may have led to treatment discrepancies.

## AIMS & OBJECTIVES:

- Improve CURB-65 documentation in clerking and post-take notes for CAP patients.
- Improve antibiotic prescribing guided by CURB-65 scores in line with BTS and NICE guidelines

## METHODOLOGY

- A structured questionnaire was used for data collection.
- Inclusion: CAP diagnosis in clerking or post-take notes.
- Exclusion: LRTI diagnosis.
- First Cycle: Data collected from 51 patients over 16 days (4th-19th March 2023).
- Intervention: Teaching session and poster distribution in the AMU.

SCAN ME

- Second Cycle: Post-intervention data collected from 45 patients over 9 days (1st-9th May 2023).

## RESULTS & ANALYSIS

### FIRST CYCLE : PRE-INTERVENTION


Figure 1: shows the Percentage of patients with CURB-65 documented in Clerking notes


Figure 2: shows Percentage of patients with CURB-65 documented in Post-take notes


Figure 3: shows Percentage of patients with antibiotics prescribed per CURB-65.


Figures 4: shows the Percentage of patients with antibiotics prescribed per CURB-65.

### SECOND CYCLE : POST-INTERVENTION


Figure 5: shows the Percentage of patients with CURB-65 documented in Clerking notes


Figure 6 : shows Percentage of patients with CURB-65 documented in Post-take notes


Figure 7: shows Percentage of patients with antibiotics prescribed per CURB-65.


Figure 8: shows the Percentage of patients with antibiotics prescribed per CURB-65.

The QIP led to a twofold increase in CURB-65 documentation and significant improvements in antibiotic prescribing

## CONCLUSION

Despite improvements in documentation and antibiotic prescribing, ongoing monitoring and additional interventions are necessary to sustain these improvments and ensure optimal patient care.

## REFERENCES

## ACKNOWLEDGMENT

WE WOULD LIKE TO THANK DR. ALWISABI FOR HIS SUPPORT ON THIS PROJECT

# RESISTANT HYPERTENSION IN A PATIENT WITH TAKAYASU ARTERITIS WITH RENAL ARTERY STENOSIS SUCCESSFULLY MANAGED BY TOCILIZUMAB AND RENAL ANGIOPLASTY

**Authors: Dr. Abdelhameed Yousif** (Morriston hospital, ST6 Rheumatology), **Dr. Manivannan Prathapsingh** (Hywel Dda UHB - Consultant Rheumatologist), **Dr. Mariss Bin Mohtar** (UHW– FY2)

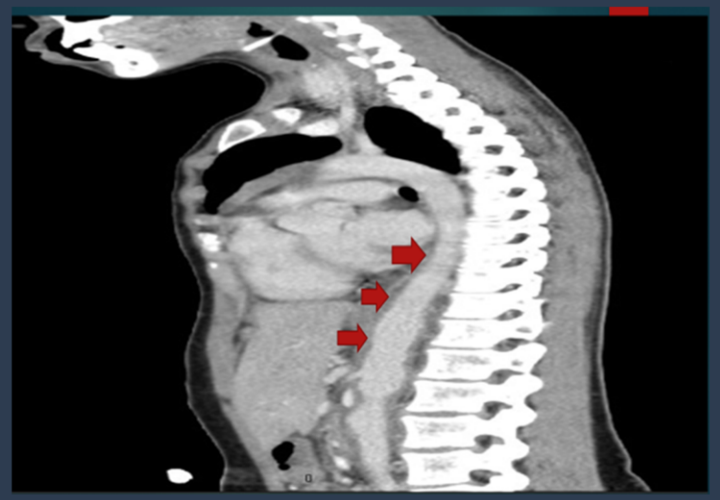
**Collaborators**: **Dr. Andrew Porter** (Imperial college healthcare NHS trust, SPR- Rheumatology), **Dr. Taryn Youngstein** (Imperial college healthcare NHS trust, Consultant Rheumatologist) , Dr. Jayne Evans (Hywel Dda UHB, Consultant Rheumatologist)

## Takayasu Arteritis

Takayasu arteritis is a granulomatous inflammation and a localized periarteritis with mononuclear infiltration to affect women with adolescents and young adults at greatest risk.(1) Late phase of the disease, fibrous scarring replaces the adventitia and media causing stenosis, thrombosis and aneurysms in the affected arteries.(2).TA usually affects aorta and its branches.(3).

## The Case

A 16-year-old female presented to the rheumatology outpatient department with a 2-month history of generalized polyarthralgia, fatigue, and fever. Examination was normal, except left ankle swelling.



## The Results

The initial infection, inflammation, and vasculitis workup, including blood and ultrasound, were negative, except a CRP of 135 and ESR:57.

CT TAP/angiogram was in keeping with **type III Takayasu arteritis** with **Extensive Reno -vascular involvement (Lt: 80-90%; Rt:60% severity).**

## The Intervention

She was treated with high dose oral steroid and methotrexate with excellent response.

A few months later, she was admitted with high blood pressure reading of 220/120 mmHg. She required 3 antihypertensives to control her BP and Tocilizumab added as well.

Her case was discussed with a Secondary MDT in London, who advised IR guided balloon angioplasty of the renal arteries. She underwent **IR guided, 6 mm balloon angioplasty for the left renal artery**. She responded well to the procedure, her blood Pressure normalized on single antihypertensive drug

## Conclusion

This case illustrates the complexity of Takayasu arteritis and the importance of MDT input. Angioplasty has less re-stenosis complication compared to other interventions (surgery and stenting) in the management of vessel stenosis(4).

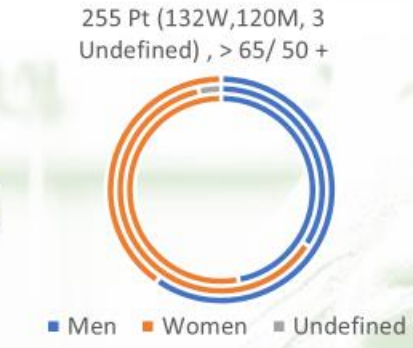
## References

1.https://www.sciencedirect.com/science/article/abs/pii/S0967210999000502?via%3Dihub
2.Oxford handbook of rheumatology
3.https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9498934/
4. Kinjo et al, jeong at al meta analysis

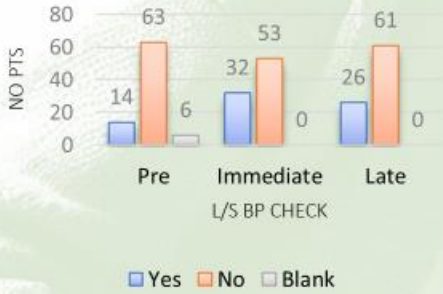
# Fall prevention in hospital:

A Quality Improvement Project - Royal Gwent Hospital – ABUHB, Wales 2022 -2024. Authors : Dr Abdelmoniem Elmustafa, Dr Shaha Pennadam Sheriff, Dr Thayapary Sivagnanam, Dr Vibhootee SantBakshsingh, Dr Abanoub Khalil, Dr Jiawen Dong, Dr Adeolu Aofolaju, ANP Nicola Pagett, ANP Adelina Trandafir, PA Grace Laporta

## Methodology

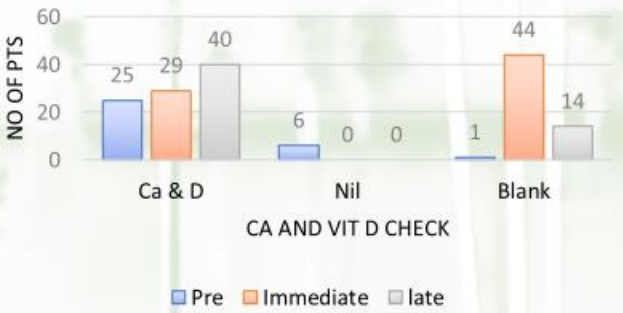




*L/S BP Check-Fig-2*




*MFRA completion-Fig-3*


*Calcium and Vit D level- Fig-4*




-The project was done in the 3 COTE wards in RGH /ABUHB – capacity of 90 beds.
-How to avoid preventable IP fall, to reduce fall rate to equal or less than national rate (6.6).
-1st cycle Audit: observational cross-sectional, faller Vs non-faller comparison (83). [Fall rate was 8.3]
- Deficiency in clinical practice MFRA, L/S BP, Bone health
-2nd cycle Interventional: Fall champions proforma, 6Qs and recommendations: MFRA completion, Action plan, incorporation in Pt care plan, L/S BP, Bone health. (85)
- Delayed impact was checked 3months after cessation of interventions. (87)

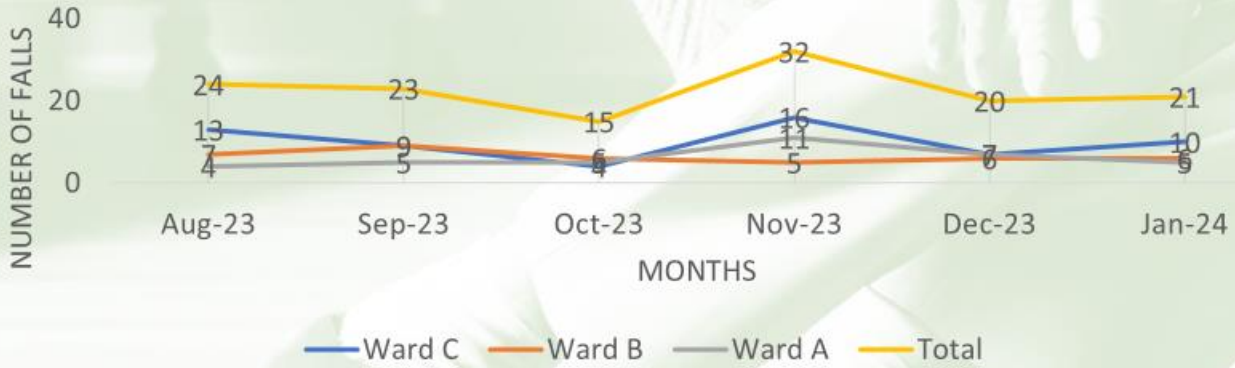
## Results

- Improvement in the practice of L/S BP, and bone health assessment following intervention with drop in the delayed audit with residual improvement. Fig 2, & 4.
- Initial drop of fall rate after intervention to 5 per 1000 occupied bed per day, *(P-value 0.07)*. Fig 1.
- Sharp rise during Nov co-incident with patient relocation to temporary wards for ward maintenance. Fig 1.
- Trivial changes in MFRA completion, MAU was not apart of the QIP.
- Enhanced care ward – Pt with cognitive impairment (Ward C) has a leading contribution in the fall incidence.

## Limitation

- Nature and complexity of fall and limited resources.
- Multiple derivative of the subject
- Multiple team involved in fall prevention and post fall care
- Relative short period of intervention to change the current behavior and clinical practice among rotation of health care providers and turn-over.

Fall rate No fall/month-Fig-1




## Conclusion and recommendation

- Interventions showed initial promising results that may need longer application in a larger to evaluate its benefit and impact.
- Multiple focus projects towards different fall risk aspect and post fall care may be needed to address IP fall.
- Multi-disciplinary teaching, patient and relatives' education and dynamic measures may be required to cover extensive fall topic

## Reference

- Falls in older people: assessing risk and prevention, NICE National institute for health and care excellence

# Mycobacterium Bovis BCG-Induced Bilateral Ankle Septic Arthritis

## "A Rare Late Complication of Intravesical BCG Therapy for Bladder Cancer"

Dr. Abdulrahman Babiker[1], Dr. Audrey Low[1]
Salford Royal Foundation Trust, Northern Care Alliance

## Background & Information

**Context:**

- Intravesical BCG: standard treatment for invasive bladder cancer
- Generally safe therapeutic option
- Rare but significant systemic complications possible
- Late-onset complications particularly challenging to diagnose

**Patient Demographics:**

- 81-year-old Caucasian male. Retired engineer.
- Previous bladder cancer.
- Other history: Ischaemic heart disease, osteoporosis, radical cyctoprostatectomy.

## Clinical Course & Investigations

**Initial Presentation:**

- 4-5 month history of bilateral ankles pain
- Progressive swelling and mobility issues
- No other joints involved
- No extra-articular features

**Initial Investigations:**

- Synovial fluid analysis: Seronegative Pattern
- Negative rheumatoid factor and CCP antibody
- Imaging (X-rays and MRIs): Erosive features

**Initial treatment failure:**

- Failure to response to initial treatment:
  - Intra-articular steroids
  - Methotrexate

## Diagnosis & Management

**Definitive Diagnosis:**

- Synovial biopsy finding:
  - Granulation tissue
  - Non-necrotizing granulomas
  - M. Bovis BCG identified

**Treatment:**

- Anti-TB regime:
  - Ethambutol
  - Rifampicin
  - Isoniazid
- 12-month extended treatment
- Pyrazinamide resistance noted

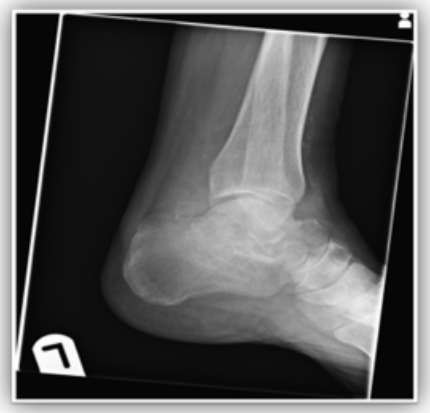


**Figure 1:** Ankle Xray **2018** showing early degenerative changes in talocalcaneal joint spaces

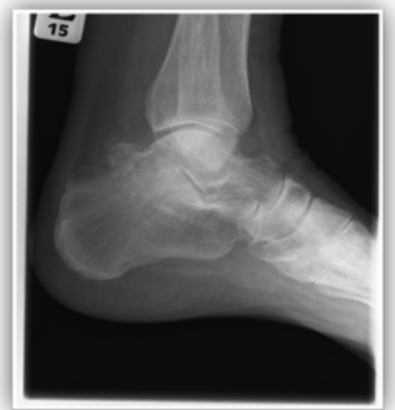


**Figure 2**: Ankle Xray **2020** showing progressive erosive changes with join space narrowing

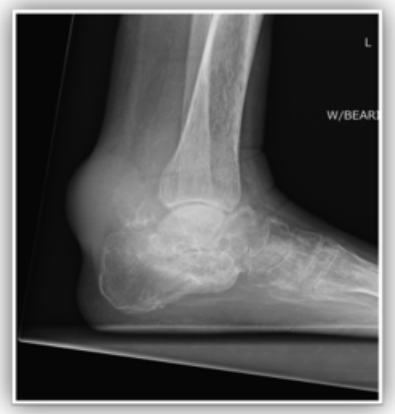


**Figure 3**: Ankle Xray **2023** showing severe degenerative changes with erosions

**Key Learning Points:**

- High clinical suspension needed for atypical infections
- Importance of tissue diagnosis
- Value of extended cultures
- Need for prolonged treatment
- Multidisciplinary approach crucial

**Current Status:**

- Non-healing sinus
- Ongoing infection
- Super-added staph aureus
- Referred to tertiary orthopaedic team in Birmingham

# Chasing Shadows: A Medical Enigma of an Unorthodox Gastrointestinal Bleed

**Dr Emily Buchanan[1],** Dr Areeb Zar[2], Dr Abhishek Ray[3]

*[1]FY2, [2]IMT3, East Surrey Hospital, Surrey and Sussex Healthcare NHS Trust, [3]ST5 Gastroenterology, Royal Surrey County Hospital, Royal Surrey NHS Foundation Trust*

## Introduction

- Up to 4% warfarin-taking patients experience gastrointestinal bleeding (GIB) in their lifetime (1), which presents as **haematemesis and malaena or frank per rectal bleeding**.
- Upper and lower GIB, anatomically separated by the ligament of Treitz (2), are commonly investigated with oesophagogastroduodenoscopy (**OGD**) and **colonoscopy**, respectively, to locate source of bleeding. This case highlights the importance of further investigation, for example with **capsule endoscopy** (3), if initial investigations are inconclusive
- **Gastrointestinal angiodysplasias (GIADs)**, abnormal vessels in mucosa and submucosa, are responsible for 6% of lower GIB (4)

## Clinical Case

• 84 year-old male attended with multiple episodes of **coffee ground vomiting** on background **metallic mitral valve replacement on Warfarin** (target INR 1.5), lived independently
• OGD showed *multiple discrete ulcers in lower oesophagus, no evidence of bleeding*
• Further melaena led to **repeat OGD** showing only *candidiasis*
• Efforts turned to lower GI source, with **CT angiogram** showing *enhancing lesions in the walls of jejunal loop*. IR felt it was unlikely to be the source of bleed
• Two further episode of melaena led to two additional immediate **CT angiograms** again showing *no clear source* of bleeding
• **Capsule endoscopy** was reported as *normal*
• **Colonoscopy** showed *clotted blood in right colon* – deduced source of bleeding as **small bowel** leading to repeat **capsule endoscopy** which was *normal*
• **Balloon enteroscopy** showed *abnormal area of 3rd part of duodenum*, thought to be a **telangiectasia.** Biopsies showed *regenerating mucosa*
• **A red cell scan** ruled out *Meckel's diverticulum*
• **CT angiogram** and **red cell scans** were repeated after mixed dark and fresh bleeding, which were *negative* for active bleeding
• He had thoroughly deconditioned during his long hospital stay and multiple bleeds, and experienced decompensated heart failure as an inpatient, prolonging his admission
• He rebled 1 month later (**OGD** *negative*), and **CT enterography** showed *unchanged hyperenhancing well defined 9mm lesion within proximal small bowel*, whilst **Double Balloon Enteroscopy** showed *2cm submucosal **angiodysplasia** in proximal jejunum* which was for **surgical management**. During laparotomy, **telangiectasia was noted at D4** – no argon in department for ablation. Biopsy showed several prominent submucosal blood vessels, suspicious for **arteriovenous malformation**
• After eventual discharge, he unfortunately represented 2 months later with **symptomatic iron deficiency anaemia**, for which he was transfused iron and blood
• At this point, his care was transferred to a regional specialist centre

## Discussion & Learning Points

• Video Capsule Endoscopy (VCE) and Device Assisted Enteroscopy (DAE) are the 2 investigating modalities of small bowel GIADs, but DAE has an edge in terms of therapeutic measures.
• Bleeding small bowel angiodysplasias are more challenging to manage than gastric or colonic angiodysplasias due to their **inaccessibility**.
• **Selective embolization with angiography** exhibits a haemostatic efficacy ranging from 80% to 90%. It has high rates of complications but is frequently used due to the inaccessibility of small bowel GIADs.
• **Endoscopic treatment**, for example **argon plasma coagulation (APC)**, laser photocoagulation and photocoagulation with YAG laser, is the other modality. APC is most commonly used, with which adequate bowel prep is of utmost importance to prevent colonic gas explosion.
• APC and **monthly lanreotide** administration for one-year reduces bleeding recurrence and need for blood transfusions, making it more effective than endoscopic therapy alone. (5)

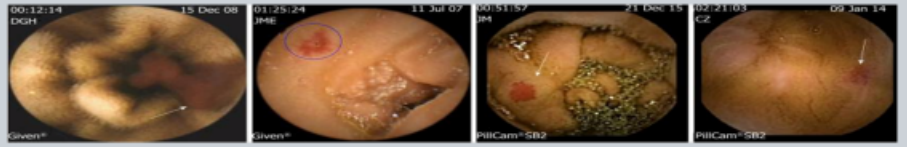



**Fig 1**.Stratification of small bowel angiodysplasia (5)

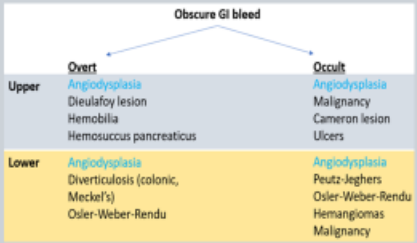



**Fig 2**. Causes of Obscure GI Bleed (6)

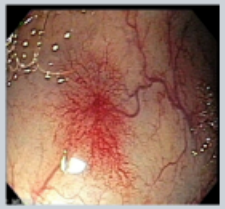


**Fig 3.** Angiodysplasia (7)

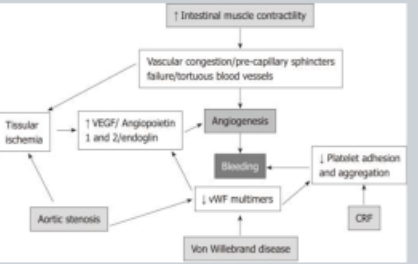



**Fig 4**.Pathogenesis of GIAD (5)

## References

(1) Comparative risk of gastrointestinal bleeding with dabigatran, rivaroxaban, and warfarin: population based cohort study. *BMJ.*
(2) Gastrointestinal Bleeding. *Available from:* https://www.ncbi.nlm.nih.gov/books/NBK537291/.
(3) Small Bowel Bleeding, American College of Gastroenterology. *Available from:* https://gi.org/topics/small-bowel-bleeding/
(4) Angiodysplasia of the gastrointestinal tract. *Available from:* https://pubmed.ncbi.nlm.nih.gov/8389094/.
(5) Diagnostic and therapeutic challenges of gastrointestinal angiodysplasias: A critical review and view points. *World Journal of Gastroenterology.*
(6) Dieulafoy Lesion Causing Obscure Overt GI Bleed, Available from: https://scvmcmed.com/tag/gastroenterology/page/2/.
(7) Colonic Angiodysplasia. Available from https://www.gastrointestinalatlas.com/english/colonic_angiodysplasia.html.

# Follow Up Chest X Rays performed as per BTS/NICE guidelines on adults diagnosed radiologically with Community Acquired Pneumonia and catching Lung Cancer early [ 2 cycle QIP ]

## INTRODUCTION

*This QIP aimed to assess whether follow-up chest x-rays were performed according to BTS/NICE guidelines for adults admitted to Acute Medicine with radiologically diagnosed Community Acquired Pneumonia (CAP).*

## BACKROUND

*Patients who have lung cancer are also more susceptible to superadded infection[1]. As infective radiological changes may mask an underlying undetected malignancy, follow-up x-ray/ CT scan should be performed within 6 weeks to ensure resolution of radiographic opacities, as would be anticipated in pneumonia[2] .*

## METHODOLOGY

*To prospectively identify a total of 42 cases of radiologically diagnosed CAP in patients admitted in Department of Acute Medicine of Weston General Hospital and to quantify the number who went on to have a 6 week follow-up chest x-ray and CT scan as per the national guidelines.*

*Following the first cycle and putting trust wide emails, banners & pneumonia leaflets reflecting results of first cycle; a second cycle of QIP was conducted on 50 patients after a gap of 8 weeks.*

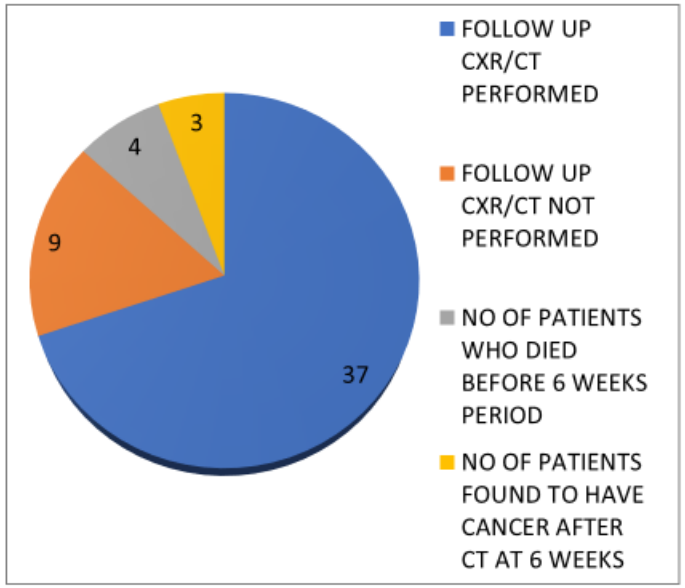
### Inclusion Criteria

*Adults >18 years of age with Radiologically diagnosed CAP .*

### Exclusion Criteria

*Known primary lung cancer or metastatic lung tumors.*

***Next step – 3rd cycle***
***Goals- To Consolidate gains and target 100% compliance .***




| TOTAL NO OF CASES | 42 | 50 |
|---|---|---|
| FOLLOW UP CXR/CT PERFORMED | 22 | 37 |
| FOLLOW UP CXR/CT NOT PERFORMED | 16 | 9 |
| NO OF PATIENTS WHO DIED BEFORE 6 WEEKS PERIOD | 4 | 4 |
| NO OF PATIENTS FOUND TO HAVE CANCER AFTER CT AT 6 WEEKS | 2 | 3 |

## CONCLUSION:

*1. Compliance with follow-up imaging increased from 52.4% to 74% after targeted interventions.*
*2. Follow-up imaging identified undiagnosed lung cancer in 8-9% of cases, emphasizing its crucial role.*
*3. Further efforts are required to reach 100% compliance and ensure timely detection of potential malignancies.*

## REFERENCES


*1.Links between Infections, Lung Cancer, and the Immune System DOI: 10.3390/ijms22179394*

*2. Is post-pneumonia chest X-ray for lung malignancy useful? Results of an audit of current practice DOI: 10.1111/imj.12699*


## ISSUES IDENTIFIED THROUGH THIS AUDIT AND RECTIFIED IN SECOND CYCLE

1. Chest X-ray or CT scan were not documented or requested as per the national guidelines by the clinicians.
2. Lack of understanding by patient regarding importance of follow up imaging.


**PRESENTED BY Dr.Abir Aijaz**
**CO AUTHORS – Dr. Manzoor Wani [Ist author ] / Dr . Abdul Bhat**


NHS
University Hospitals Bristol and Weston
NHS Foundation Trust

# "Silent Crown: Unveiling the Meningitis Masquerade - Crowned Dens Syndrome"

## INTRODUCTION

Crowned dens syndrome (CDS) is a rare condition and is caused by calcium pyrophosphate dihydrate (CPPD) crystal deposits around the odontoid process of the second cervical vertebra.

These crystal deposits lead to clinical and radiographic features such as acute headache, neck pain, and fever, so confusion with other conditions like meningitis or stroke is highly likely .

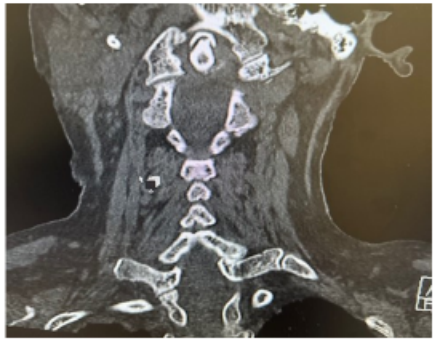
CDS was first recognized about two decades after pseudo gout and is characterized by radiopaque crystal densities that form a "crown" around the odontoid process, explaining the severe neck pain and stiffness common in this condition.

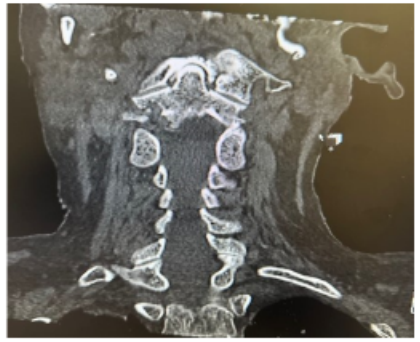
## CASE REPORT

**A 46-year-old female with background of type 2 diabetes and essential hypertension presented with fever, neck pain, and headache, initially raising suspicion for meningitis due to markedly elevated CRP (210 mg/L) and leucocytosis. A CT scan of the head was unremarkable, and lumbar puncture results were normal, leading to the initiation of empirical antibiotics for presumed sepsis of unknown origin.**

**Despite this, her symptoms persisted, prompting further investigation. A CT scan of the neck revealed calcifications around the odontoid process, indicative of Crowned Dens Syndrome (CDS), a rare inflammatory condition often misdiagnosed due to its overlapping symptoms with more common conditions like meningitis.**

**After reviewing the literature, the medical team initiated corticosteroid therapy. The patient responded rapidly, with significant clinical improvement observed within 24 hours. By the third day, all inflammatory markers had normalized, and the patient became completely symptom-free.**





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## DISCUSSION

Diagnosis of cervical disc space calcification (CDS) requires clinical symptoms, and it must be differentiated from asymptomatic odontoid calcifications. Treatment typically involves NSAIDs or corticosteroids, with combination therapy improving outcomes. Despite a favourable prognosis, relapse rates are high, as shown in a study where 9 out of 40 patients relapsed within nine months but responded well to steroids. Surgery may be needed in rare cases of complications like cervical cord compression to alleviate symptoms.

## LEARNING POINTS

This case highlights the importance of considering CDS in patients with unexplained neck pain and fever, particularly when initial investigations are inconclusive.

***REFERENCES;***


1. The significance of calcium phosphate crystals in the synovial fluid of arthritic patients: the "pseudo gout syndrome". Kohn NN, Hughes RE, Mc Carty DJ Jr, Faires JS. *Ann Intern Med.* 1962;56:738–745.
2. Acute neck pain due to calcifications surrounding the odontoid process: the crowned dens syndrome. Bouvet JP, le Parc JM, Michalski B, Benlahrache C, Auquier L. *Arthritis Rheum.* 1985;28:1417–1420.
3. Crowned dens syndrome misdiagnosed as polymyalgia rheumatica, giant cell arteritis, meningitis or spondylitis: an analysis of eight cases. Aouba A, Vuillemin-Bodaghi V, Mutschler C, De Bandt M. *Rheumatology (Oxford)* 2004;43:1508–1512



PRESENTED BY ABIR AIJAZ
COAUTHORS- ABDUL BHAT,SAQIB HABIB ,SHOVAN RAHMAN,SHABIR HAIDER,SHEIKH FIRDOUS

# DDAVP Clamp: Successful strategy in postoperative hyponatremia

Authors : Abubakr Adala [1}, Munsef Barakat [2] , Waleed Mohammed [2]
Presenting author :- Abubakr Adala [1].
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2. Medical University of South Carolina , United states.

Royal College of Physicians
MED + 2024

## INTRODUCTION

- Rapid correction of chronic hyponatremia (>8-10 mmol/L) can result in osmotic demyelination syndrome (ODS).
- We present this case of post operative severe hyponatremia to highlight the role for Desmopressin (DDAVP) as a tool for preventing rapid overcorrection of serum sodium.

## CASE PRESENTATION

- A 34-year-old female presented 2 weeks post 1st rib resection for thoracic outlet syndrome with fatigue, shortness of breath, hypotension, and tachycardia. Her postoperative course was complicated by continuous chylous drainage .
- Chest X-ray revealed bilateral pleural effusion (Figure 1). Blood tests showed hyponatremia (117 mmol/L) (Table 1).
- Volume resuscitation started with 3 L of sodium chloride 0.9%.
- Subsequently, sodium levels increased to 129 mmol/L. DDAVP 2 mcg was prescribed intravenously every 8 hours along with IV D5W infusion until the serum sodium reached 122 mmol/L. DDAVP clamp continued for 48 hours.
- Sodium was corrected, and thoracic duct ligation with talc pleurodesis were performed successfully.

## (Figure 1) Chest X-ray

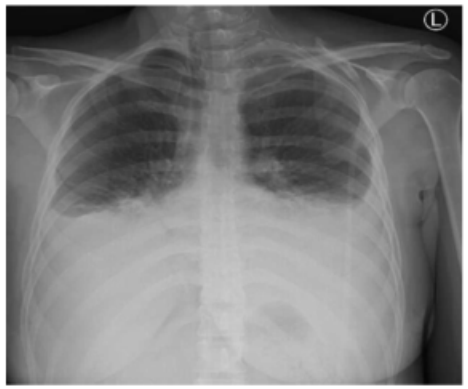


Table 2

| Pleural fluid analysis | Value |
|---|---|
| Total protein | 1.3 g/dl |
| White cell count | 926 / cumm |
| Polymorphonuclear neutrophils | 78 % |
| Triglyceride | 3.7 mmol/L |
| Cholesterol | 1.3 mmol/L |
| Fluid PH | 7.7 |
| Fluid sodium | 119 mmol/L |

Table 1

| Initial labs | Value | Normal Range |
|---|---|---|
| Serum sodium | 117 mmol/l | 136 - 145 mmol/L |
| Serum potassium | 3.8 mmo/l | 3.6 - 5.2 mmol/L |
| | | |
| Serum chloride | 100 mmo/l | 96 - 106 mmol/L |
| Serum bicarbonate | 21 mmol/l | 22 - 26 mmol/l |
| Blood Urea Nitrogen | 7.1 mmol/L | 2.1 - 8.5 mmol/L |
| Serum Creatinine | 61.9 umol/L | 44 - 97 umol/L |
| Serum glucose | 6.7 mmol/L | 4.0 - 5.4 mmol/L |
| Serum osmolarity | 248 mOsm/kg | 285 - 295 mOsm/kg |
| Total protein | 5.2 g/dl | 6.4 - 8.3 g/dl |
| Haemoglobin | 110 g/L | 120 - 150 g/L |
| White Cell count | 10000 /mm3 | 4500 - 11,000/mm3 |
| Urine Sodium | <20 mmol/l | - |
| Urine Osmolarity | 859 mOsm/kg | - |

## DISCUSSION

- In cases of severe hyponatremia, there is a need for more controlled correction of sodium. The concomitant administration of DDAVP with volume repletion in the initial 48-hour decelerates free water loss, thereby assisting in preventing the overcorrection, making it a safer approach in those selected patients.
- There are three strategies for the utilization of DDAVP in the management of hyponatremia: proactive, reactive, and rescue.

## CONCLUSION

DDAVP clamp is a highly effective strategy for managing postoperative hyponatremia overcorrection. Clinicians should consider implementing this approach to ensure more predictable rate of correction when treating hyponatremia in similar scenarios.

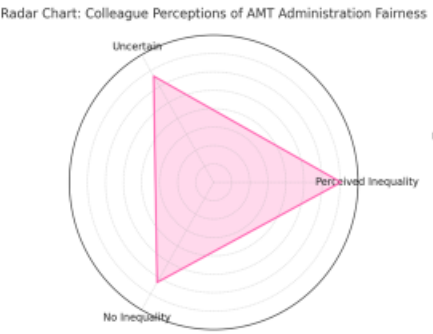
Nottingham University Hospital NHS Trust
University of Nottingham UK | CHINA | MALAYSIA

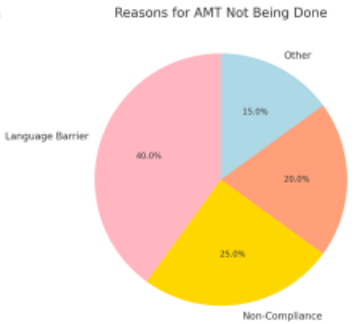
# Abbreviated Mental Test (AMT) - A Test of Memory and A Test of Cultural Fairness

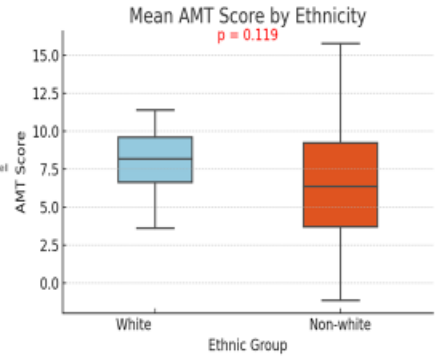
Afa Ibrahim, Beili Shao, Zahra Mohamed, Carla Hurtado, Radu Tanasescu

## INTRODUCTION

- The **efficacy** of cognitive assessment tools, such as the Abbreviated Mental Test (AMT), can be compromised by factors such as ethnicity and language, leading **to poor diagnostic accuracy for non-Caucasian populations**.
- According to NICE guidelines (2023), delirium assessment is recommended in acute admissions for individuals **aged 65 or older**, with **cognitive impairment or dementia**, **hip fractures**, **severe illnesses** or **recent changes in cognition, perception, physical function, or social behaviour**.
- We explored potential biases in AMT administration study at a tertiary care centre in **Nottingham, UK**, an area marked by a diverse demographic profile, with a **non-White population** comprising **34%** as reported in the 2021 Census, nearly **double the national average.**




## RESULTS

**Patient Demographics**: Majority of Non-White patients were Caribbean and Asian; 74% preferred English.

**Dementia Prevalence**: Twice as common in Non-White patients (30% vs. 15%, p=0.03).

**Cognitive Testing (AMT)**: AMT was administered significantly less often to Non-White patients compared to White patients (31% Vs 76.6%, p < 0.001)

Excluding dementia and cognitive impairment cases, mean AMT scores were non-significantly higher for white-group. Alternative cognitive tests, such as the 4AT, were rarely used and more common for White patients.

**Socioeconomic Disparities**: Among Non-White patients, AMT administration was lower in lower-income postcodes, a trend not seen in White patients. No significant differences were observed in mean AMT.

**AMT Administration Gaps**: Reasons for not performing AMT were unclear in up to 80% of cases.

**Feedback and Perceptions**: 35.3% perceived AMT inequality; reasons included language barrier, non-compliance or being too unwell. Suggestions for improvement included revising questions and improving training.

## METHODS

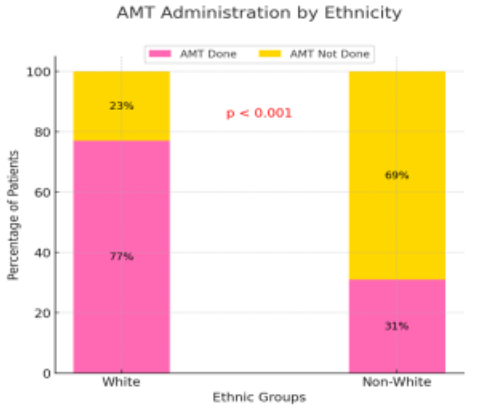
We audited 144 acute elderly admissions from April to August 2024, comprising **57 White patients (47 White British, 10 Other White) and 87 Non-White patients**. Data were collected from medical notes and electronic records and analysed using univariate analysis. **Feedback from 18 colleagues** was also gathered via a structured-online-questionnaire to assess perceptions of AMT practices and the impact of cultural factors.

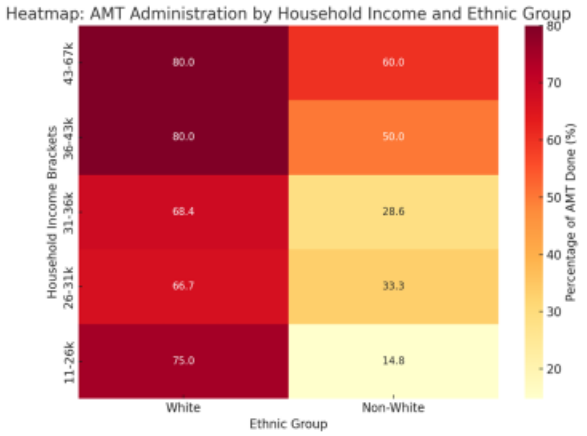
## CONCLUSIONS

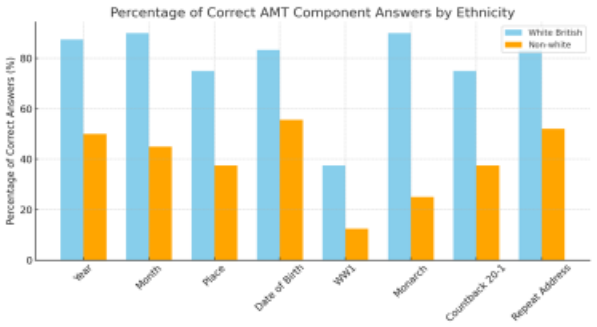
Within its limitations, this study reveals a **significant disparity in the administration of the AMT between White and Non-White patients, particularly in lower socioeconomic groups**.

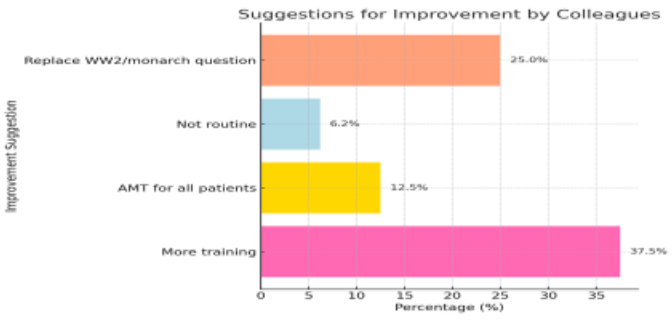
These findings underscore the **need to understand factors contributing to this inequality** and to improve adherence to NICE guidelines.

There is a **pressing need for culturally fair cognitive assessment tools**, such as the Rowland Universal Dementia Assessment Scale (RUDAS). **AI-driven cognitive assessment devices supporting multiple languages** could further enhance testing among minority groups. Future research should focus on developing culturally inclusive tools to minimize ethnic biases in a multicultural context.



# IMPROVING TEAM COMMUNICATION AND THE EXPERIENCE OF TRAINEES IN STROKE CARE

BY DR AGAMPODI UMANDA DE THABREW, DR DAVID TURNER, DR ARUP SEN

THE NATIONAL HOSPITAL OF NEUROLOGY AND NEUROSURGERY, UNIVERSITY COLLEGE LONDON HOSPITALS NHS FOUNDATION TRUST

## Introduction

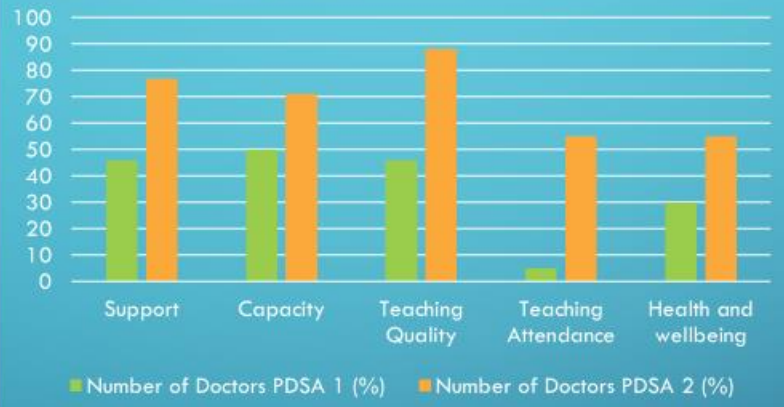
Stroke care involves an amalgamation of different experts in a mixture of hyperacute, acute and chronic settings [1,2]. This requires flexibility of Stroke team members and there can be a variety of trainee experiences due to the setting of the work environment[3]. This study aims to improve communication between the multi-disciplinary team (MDT) members and trainee experiences in Stroke.

## Materials and Methods

Two plan-do-study-act (PDSA) cycles including a repeated qualitative survey was sent to junior doctors between October 2023 and July 2024. Education of trainees and staff was undertaken following the first cycle and changes made to improve and bolster the rota.

## Results and Discussion

*Figure 1. The number of doctors who gave positive feedback around 5 key parameters of trainee experience*




As per ***Figure 1.***, team support improved by 31%. Placement ratings increased by around 10%. Teaching quality rose from 46% to 88%, and attendance for teaching improved by 50%, likely due to staff education about this. There was a notable 20% reduction in doctors working outside their capacity in PDSA 2, and nearly 80% of staff felt adequately supported by PDSA 2.

## Results and Discussion Continued

Burnout frequency decreased from weekly to monthly, with 88% reporting weekly burnout in PDSA 1, dropping to 66% in PDSA 2. Overall, health and wellbeing support improved by 25%.

## Conclusion

Education and improvement of the culture in Stroke improved the overall quality of the training. Enhanced rota safety was vital in improving the level of burnout for doctors and producing safe care.

### References

1. Clarke DJ, Forster A. Improving post-stroke recovery: the role of the multidisciplinary health care team. J Multidiscip Healthc. 2015 Sep 22;8:433-42. doi: 10.2147/JMDH.S68764. PMID: 26445548; PMCID: PMC4590569.

2. Horton, S., Lane, K., & Shiggins, C. (2015). Supporting communication for people with aphasia in stroke rehabilitation: transfer of training in a multidisciplinary stroke team. *Aphasiology, 30*(5), 629–656. https://doi.org/10.1080/02687038.2014.1000819

3. Chouliara N, Cameron T, Byrne A, Fisher R. Getting the message across; a realist study of the role of communication and information exchange processes in delivering stroke Early Supported Discharge services in England. PLoS One. 2024 Mar 8;19(3):e0298140. doi: 10.1371/journal.pone.0298140. PMID: 38457416; PMCID: PMC10923427.

# A Storm of Polyserositis: Unravelling Multisystem Effusions in Idiopathic Hypereosinophilic Syndrome.

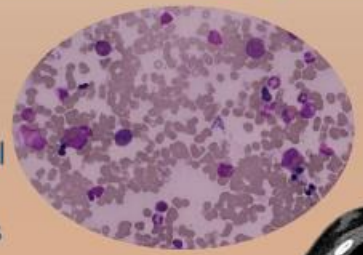
Ahmed Fadel, Yasser Ahmed, Vijayavalli Dhanapal

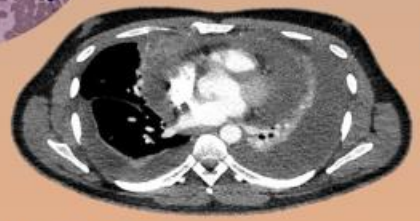

## Case Presentation

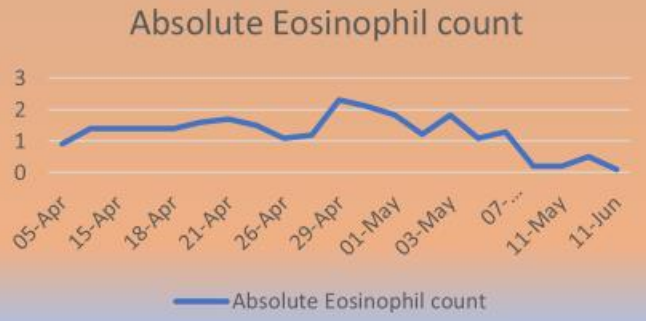
A 42-year-old non-smoker presented with fever, shortness of breath, and pleuritic chest pain. Initial investigations revealed a small right-sided pleural effusion and elevated inflammatory markers. Despite treatment for presumed pneumonia, the condition worsened, progressing to polyserositis with bilateral pleural effusions, ascites, and tamponading pericardial

## Investigations

A diagnostic pleural aspiration revealed eosinophil-rich fluid. Comprehensive tests excluded tuberculosis, malignancy, and infection. Eosinophil count increased to over 1.5 × 10^9/L, fulfilling the criteria for HES. Bone marrow aspiration showed no malignancy. CT confirmed bilateral pleural effusions, pericardial effusion, and moderate ascites.








## Treatment

Due to end-organ damage from hypereosinophilia, particularly the tamponading pericardial effusion, high-dose prednisolone (1 mg/kg) was initiated. A pericardial drain removed 600 ml of eosinophil-rich fluid, stabilizing the patient.

## Outcome

The patient responded well to treatment, with normalization of eosinophil counts and resolution of pleural and pericardial effusions. Follow-up imaging confirmed the diagnosis of idiopathic hypereosinophilic syndrome, and the patient was discharged on a tapering prednisolone regimen.

Case presented in IMRAD local meeting

***References:***

R. Krenke, J. Nasilowski, P. Korczynski, K. Gorska, et al. Incidence and aetiology of eosinophilic pleural effusion. *Eur Respir J.* https://erj.ersjournals.com/content/34/5/1111 DOI: 10.1183/09031936.00187308

# Breathing Through the Aftermath: Post Steven Johnson syndrome bronchiolitis Obliterans

Ahmed Fadel, Yasser Ahmed

## Background:

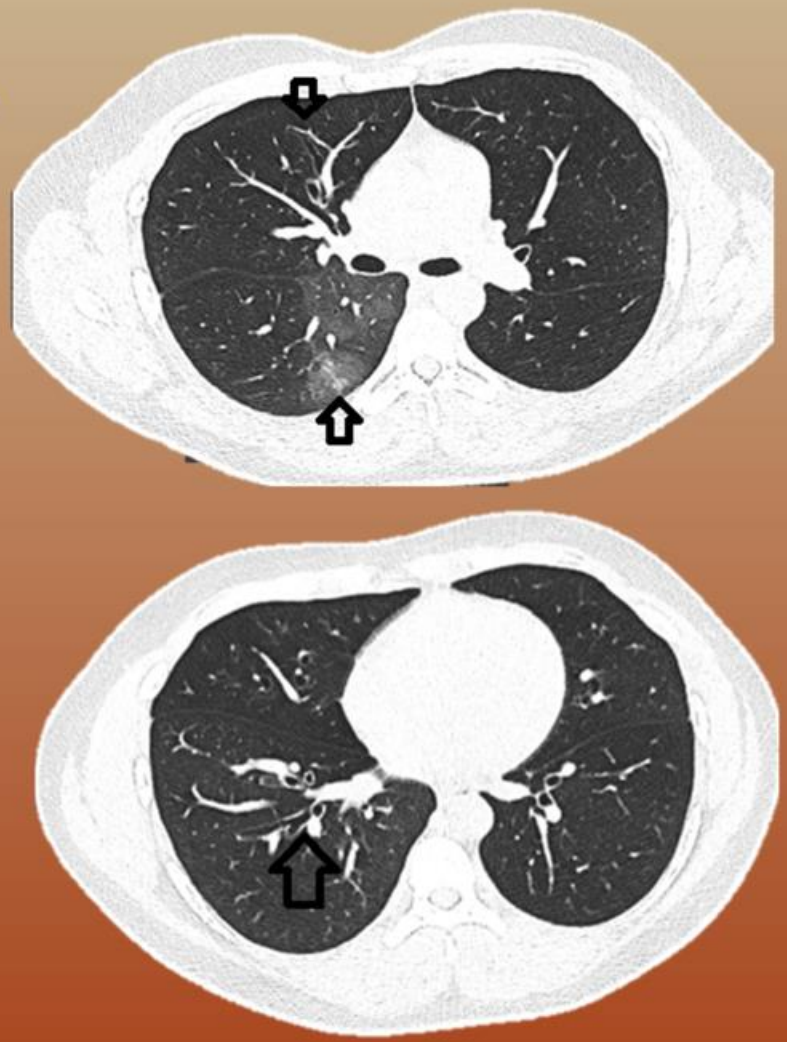
Bronchiolitis obliterans is a rare, severe complication of Stevens-Johnson syndrome (SJS), leading to irreversible small airway obstruction.

## Case Presentation:

A young male developed SJS after taking amoxicillin for a respiratory infection. Despite initial steroid therapy, he experienced worsening dyspnoea and desaturation. Imaging revealed airway thickening, mosaicism, and air trapping, consistent with bronchiolitis obliterans.

## Management:

High-dose prednisolone, fluticasone, azithromycin, and montelukast (FAM regimen) led to gradual improvement, but exertional desaturation persisted. The patient was referred for lung transplantation due to disease progression.



## Conclusion:

Post-SJS bronchiolitis obliterans requires early recognition and a multidisciplinary approach, including lung transplant consideration, to improve outcomes.

## References

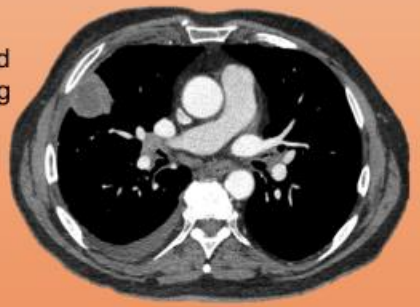
Liu J, Yan H, Yang C, Li Y. Bronchiolitis obliterans associated with toxic epidermal necrolysis induced by infection: A case report and literature review. *Front Pediatr.* 2023;11:1116166. doi:10.3389/fped.2023.1116166

# Fusobacterium nucleatum-Induced Empyema Masquerading as Lung Cancer

Ahmed Fadel, Yasser Ahmed

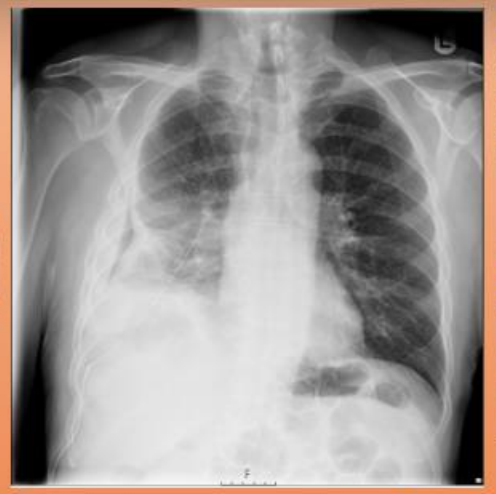

## Case Presentation

A man in his early 70s, with a history of asbestos exposure and smoking, presented with a two-week history of productive cough and greenish phlegm. Initial investigations revealed a 34 mm lesion on the right lung, and subsequent CT imaging showed a pleural-based mass and effusion, raising concerns for lung cancer.



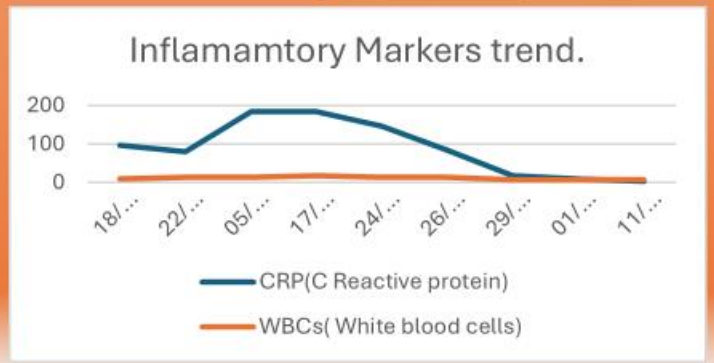
## Investigations

Blood tests showed elevated markers . Pleural aspiration revealed frank pus, confirming empyema, while pleural fluid cytology was negative for malignant cells. A PET scan demonstrated pleural uptake and lung collapse, further supporting empyema, though malignancy could not be ruled out. Pleural fluid analysis indicated an LDH of 8923 U/L.



## Treatment

A chest drain was inserted, draining over 1L of frank pus. The patient received Levofloxacin and Metronidazole, and pleural fluid culture identified **Fusobacterium nucleatum.**




Acknowledgement

Non-medical images generated using an AI platform, with appropriate permissions

## Outcome

Six months of follow-up showed clinical improvement, with no malignancy suspected. Reaccumulated pleural fluid was attributed to trapped lung physiology, and surgery was avoided. The patient remained stable throughout.

## Conclusion

This case highlights the importance of differentiating empyema from malignancy in Fusobacterium nucleatum infections. Early detection, pleural fluid cytology, and multidisciplinary management led to successful treatment without surgery, stabilizing the patient over six months.

## References:

**Addala DN, Bedawi EO, Rahman NM, et al.** Parapneumonic Effusion and Empyema. *Chest Med Clin North Am.* 2021;**42**(4):739-753. Available from: https://www.chestmed.theclinics.com/article/S0272-5231(21)01193-X/fulltext

2- Others

# Hidden in Plain Sight - Antisynthetase Syndrome Masquerading as Acute Coronary Syndrome.

Ahmed Fadel, Sarmad Mushtaq

## Case Presentation:

A middle-aged man presented with fever, myalgia, dyspnoea, and elevated troponin levels. High-resolution CT revealed ground-glass opacities with an NSIP/organizing pneumonia pattern. Elevated creatinine kinase suggested antisynthetase syndrome (ASSD) with rapidly progressive interstitial lung disease (RP-ILD).

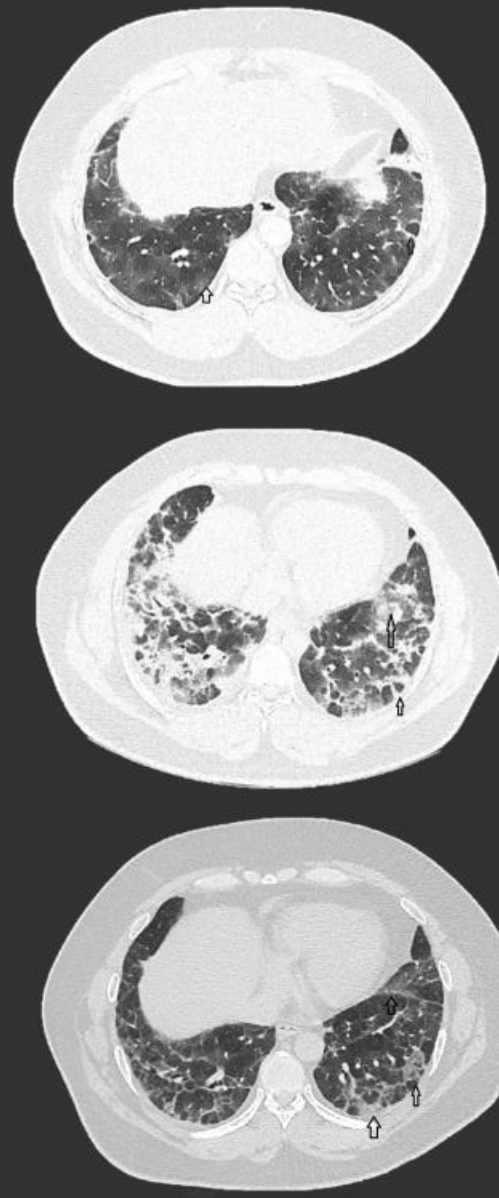
## Diagnosis:

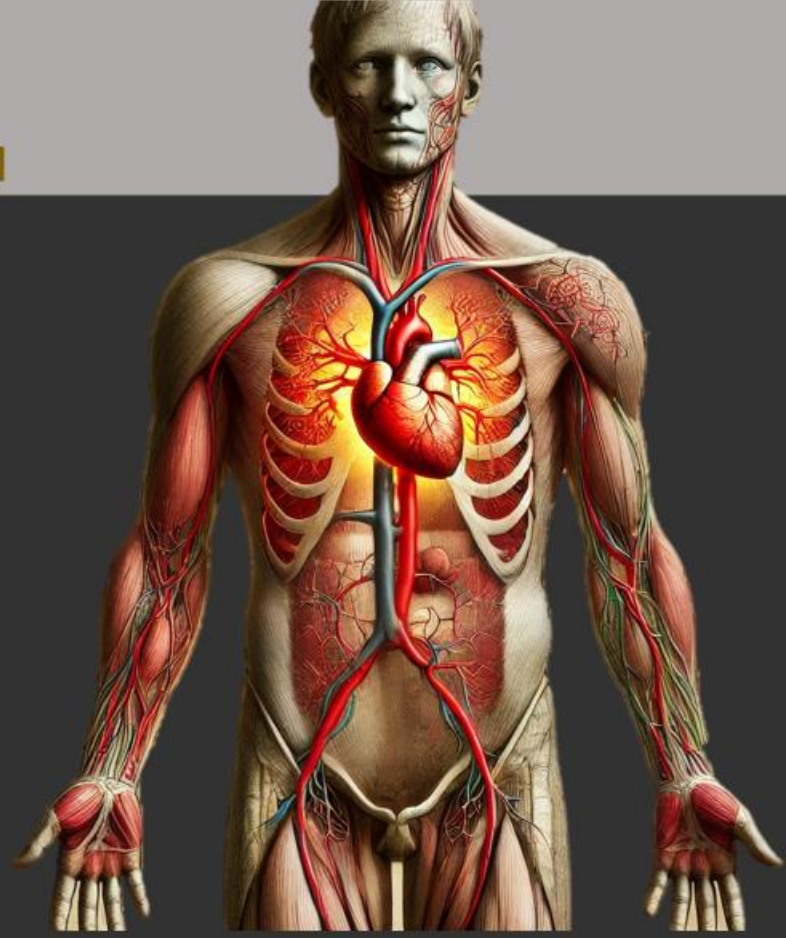
Positive anti-Jo-1, anti-PL-12 and anti-RO-52 antibodies confirmed ASSD with RP-ILD.

## Treatment:

Pulse-dose methylprednisolone and tacrolimus improved symptoms, with follow-up imaging showing lung recovery.

Case presented in IMRAD local meeting





## Conclusion:

Early diagnosis and a multidisciplinary approach are crucial for managing ASSD with RP-ILD, improving outcomes through targeted immunosuppressive therapy.

**References**

1. Cojocaru M, Cojocaru IM, Chicos B: New insights into antisynthetase syndrome. Maedica (Bucur. 2016, 11:130-5

# Geography Is Destiny: Cognitive Bias In A Case Of Euglycemic Diabetic Ketoacidosis

Dr A S Mahmood

*Internal Medical trainee (IMT3) - University Hospitals of Leicester*

NHS University Hospitals of Leicester NHS Trust

**How does the clinical setting in which you see a patient influence your diagnostic process?**

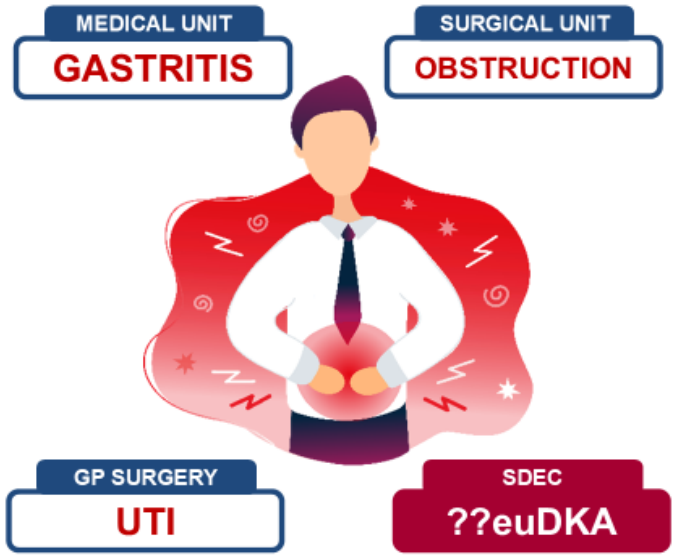
## Case summary:

A 52 year-old male with a background of type 2 diabetes and oesophageal dysmotility was triaged to our same-day emergency care unit (SDEC) from the emergency department.

He presented with 4 days of vomiting and abdominal pain after heavy alcohol ingestion. His vital signs showed he was tachycardic (110bpm) and euglycemic (6.6mmol/L). Blood tests were largely unremarkable, but showed an eGFR of 77 ml/min/1.73m² (from 89) and a potassium of 6.1mmol/L ('sample haemolysed').

A diagnosis of 'acute gastritis secondary to alcohol ingestion' was given, for which he was prescribed metoclopramide and an increased lansoprazole dose. Advice on pausing his regular empagliflozin was given, as he was still taking this sporadically during this illness.

A blood gas sample to recheck his potassium revealed a metabolic acidosis. His ketones were >7.0mmol/L, confirming a diagnosis of euglycemic DKA. He was immediately commenced on IV fluids and a fixed-rate insulin infusion – making a full recovery to discharge in two days.




## Triage cueing[1]:

- A form of cognitive bias.
- A patient is triaged to an inappropriate location, based on a limited history.
- The new setting influences a clinicians perception of illness severity.
- This can lead to diagnostic delay, inaccuracy and potential for patient harm[2].

## Factors affecting his diagnosis…

- Non-emergency setting.
- No automatic blood gas performed.
- Normal blood glucose so ketones not automatically tested.
- Symptom overlap with initial diagnosis of oesophageal dysmotility.
- Patient alluded to not being able to continue his medications.

## Key learning points for my practice:

- ✓ This setting can shift my focus towards discharging stable patients, but potentially overlooking critical cases.
- ✓ Both admission and discharge decisions are challenging but vital skills as a new registrar.
- ✓ Murtagh's strategy – applying the *must not miss* approach.
- ✓ Keen awareness is needed of local triaging protocols and cultures.

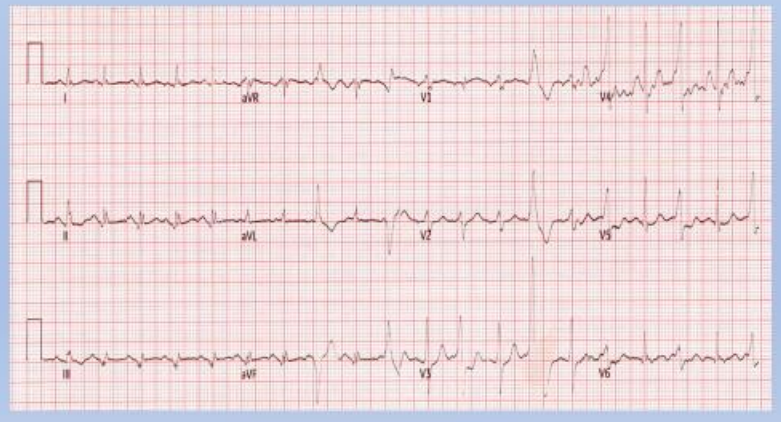
1.Nicola Cooper JF. ABC of Clinical Reasoning. 2nd ed: Wiley-Blackwell; 2023.
2.Howard J. Cognitive Errors and Diagnostic Mistakes: A Case-Based Guide to Critical Thinking in Medicine. Cham: Springer International Publishing; 2019. p. 379-423.

# Commotio Cordis in a young athlete : to implant or not implant ?

Dr Akshay Balaji
Dr Muhammad Ibaad Siddiqui
Dr Jaffar Al-Sheikhli

## Case

- A 45 year old, with no significant past medical history, presented to our center as an out of hospital cardiac arrest after sustaining direct chest trauma during a game of American football.
- Patient had return of spontaneous circulation on arrival to the emergency department after 25 minutes of bystander cardio-pulmonary resuscitation and a single shock for ventricular fibrillation (VF).
- On arrival his electrocardiogram (ECG) demonstrated no evidence of ST segment elevation.
- Patient was intubated and admitted to the intensive care unit for initial post cardiac arrest management. After making a good recovery, the patient was transferred to the coronary care unit for further investigation and management.




Admission ECG Post ROSC

## Cardiac MRI

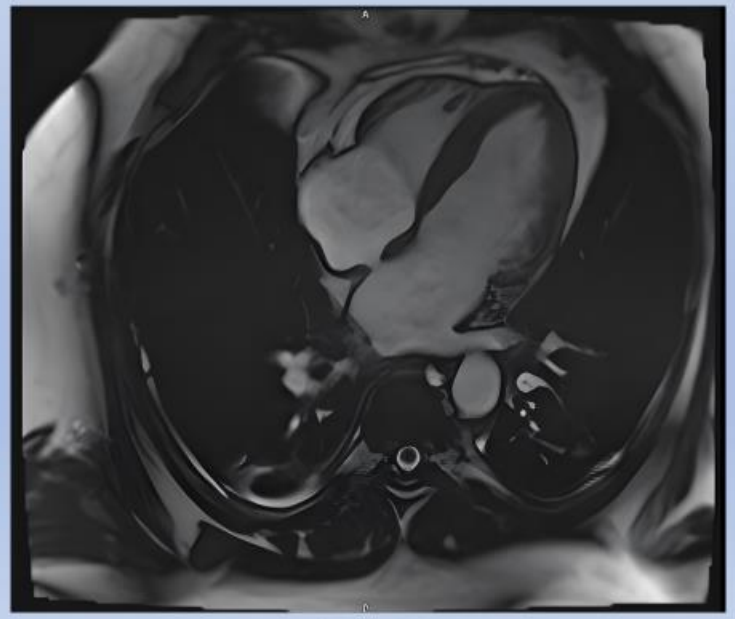
- Demonstrated features of a chronic subendocardial infarct with no acute oedema.

## Coronary Angiogram

- Demonstrated a chronic total occlusion of the right coronary artery and a large occluded obtuse marginal.

## Multi Disciplinary Team Input

- A decision was made for the medical management of his coronary artery disease and to implant a secondary prevention implantable cardioverter defibrillator due to the presence of substrate for future arrhythmias.



Cardiac MRI

## Discussion

- Commotion Cordis is a rare, but well known phenomenon secondary to blunt chest trauma which results in ventricular fibrillation .
- It caused by an external, non-penetrative force that generates stretch sensitive changes in cardiac myocytes, severely disrupting normal tissue electrophysiology. [1]
- It is explained by two mechanisms (1) blunt, non penetrating chest trauma directly over the heart & (2) within a 20 ms timeframe on the T wave upstroke just below its peak (1% of the cardiac cycle). [2]
- Cardiac Arrest and sudden death is becoming more apparent in professionally trained athletes at an elite level. [3]
- This case highlights the potential challenges of treating survivors of cardiac arrest secondary to direct chest trauma, which can be considered a reversible cause of ventricular arrhythmia.
- Particularly relating to the implant of ICDs, due to the potential lifelong complications that may occur in this young cohort. The use of cardiac MRI in this patient highlighted the presence of substrate that may cause further ventricular arrhythmia, leading to the implant of secondary prevention ICD.

**References**

1)https://www.ahajournals.org/doi/10.1161/CIRCIMAGING.118.007848
2) https://www.heartrhythmcasereports.com/article/S2214-0271(23)00260-9/fulltext
3) https://www.amjmed.com/article/S0002-9343(22)00884-1/abstract

IMPERIAL

# ECG Predictors of the efficacy of His Bundle Pacing in patients with a prolonged PR interval: A Stratified Analysis of the HOPE-HF Randomised Controlled Trial

Alain Geneste, Dr Nandita Kaza, Dr Zachary Whinnett, Dr Matthew Shun-Shin, Dr Daniel Keene

## Background

PR prolongation is common in heart failure with reduced ejection fraction (HFrEF) & is associated with increased mortality.

**HOPE-HF Trial Design:**

- Patient Population:
  - EF ≤40%
  - PR interval ≥200ms
  - QRS ≤140ms or right bundle branch block
- Intervention: AV-optimised His bundle pacing

**Key Trial Findings:**

- No significant improvement in VO2 Max
- Significant improvement in quality of life (MLWHF)

Sub-analysis revealed:

- Acute haemodynamic change predicted treatment effects
- Baseline PR prolongation did not predict response

**Clinical Challenge:**

- Haemodynamic optimisation is limited by:
  - Invasiveness of procedure
  - Findings only available during implantation

**Primary Aim:**

- Identify non-invasive ECG markers to predict treatment outcomes

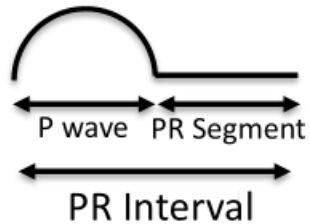
**Hypothesis**:

- PR segment may be a superior predictor compared to total PR interval because:
  - Represents atrial-ventricular conduction timing
  - Directly affected by His-Bundle pacing

## Methods

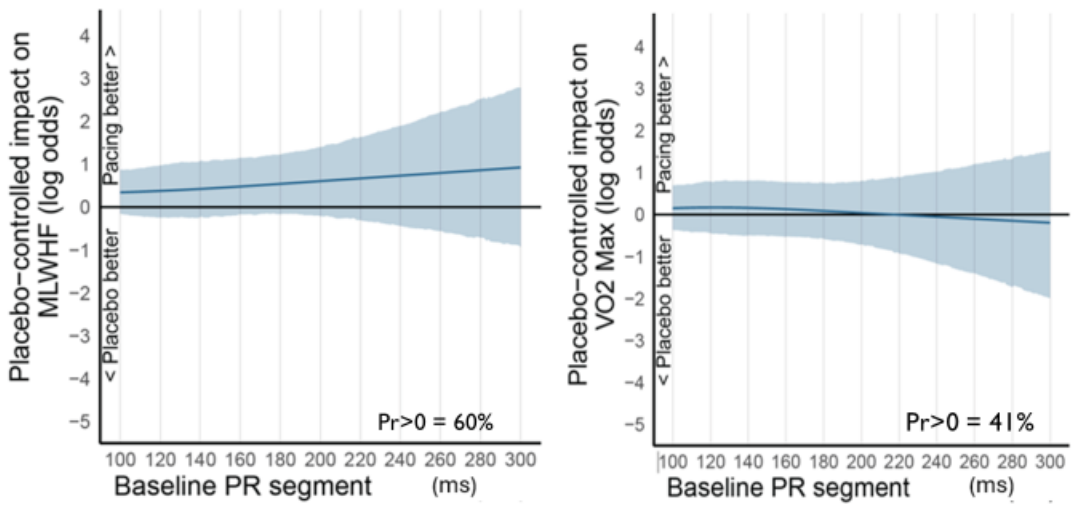
1. 140/167 HOPE-HF trial participants had intrinsic ECGs suitable for undertaking measurements
2. Measured PR interval components in lead II using digital callipers
3. Correlated measurements with acute haemodynamic response using Spearman's rank correlation
4. Assessed impact on VO2 max and quality of life using Bayesian ordinal modelling

***Figure 1**. PR Interval Components*



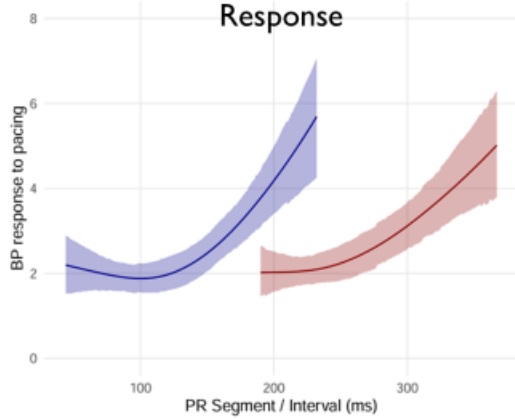

## Results

**Figure 2.** PR Segment as a Predictor of Clinical Outcomes




**PR segment did not predict response to His Bundle Pacing**

**Figure 3**. PR Components vs Acute Haemodynamic Response




**Both PR measures predicted haemodynamic response pre-randomisation**

**PR segment showed stronger correlation than total PR interval**:

- PR segment: Somer's D = 0.271
- PR interval: Somer's D = 0.194

## Discussion

**Mechanistic Pathway:**

- Strong correlation exists between adjacent measurements (PR segment → acute haemodynamic response → clinical outcomes)
- Relationship weakens with increasing distance in pathway

**Clinical Implications:**

- PR segment better predicts acute response than total PR interval
- Non-invasive markers still remain insufficient for patient selection
- High-precision haemodynamic assessment still necessary

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# Prescribing Prophylactic Anticoagulation in Renal Failure

Alexandra Pain, Rachel Bayliss, Shoomena Anil, Wenchee Siow.

Buckinghamshire Healthcare NHS
NHS Trust

## Aim

To bring the prescribing of prophylactic anticoagulation in patients with renal failure in line with evidence and guidelines

## Project Background

It is known that dalteparin is safe to use in patients with renal failure at prophylactic doses. It does not bioaccumulate, there is no increased bleeding risk compared to unfractionated heparin (UFH) and the rate of venous thromboembolism is not increased. It is less expensive and there is a lower risk of heparin-induced thrombosis compared to UFH. This is supported by evidence and our BHT guidelines.
However, we often prescribe UFH to patients with an eGFR<30, as it is a misconception that dalteparin bioaccumulates.

## Method

We quantified the magnitude of this issue by collecting data to look at the rate of incorrect prescriptions and by giving a short questionnaire to prescribers to assess their knowledge and understanding of prescribing anticoagulation in renal failure. We then provided education to doctors in the acute medical team to raise awareness and correct prescribing techniques, before repeating data collection to show the impact of the intervention.

## Results

Before intervention, 38% of patients admitted to the AMU in our month of data collection with an eGFR<30 received dalteparin appropriately (at the correct dose for weight). 62% received unfractionated heparin, which is 4x more expensive, no more efficacious and confers a higher risk of HIT (Figure 1). A questionnaire was conducted before and after the education session, attended by consultants, acute medicine registrars, ACCS and IMT trainees, ACPs, PAs and foundation doctors. Knowledge and confidence of prescribing VTE prophylaxis at low eGFRs was improved after the teaching session.
To further evidence this, the data was collected after the education session and prescription appropriateness had improved: 80% of patients admitted to the AMU received dalteparin in line with guidelines (Figure 2). It was noted that the remainder of incorrect prescriptions were made by members of other medical teams, rather than the acute medical team.

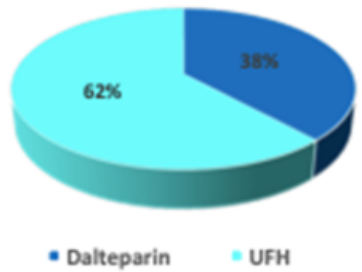



Figure 1: Pie chart showing the percentage of patients admitted to AMU with eGFR<30 prescribed unfractionated heparin (UFH) or dalteparin before intervention

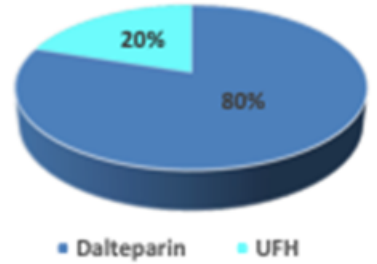



Figure 2: Pie chart showing the percentage of patients admitted to AMU with eGFR<30 prescribed unfractionated heparin (UFH) or dalteparin after intervention

## Conclusions

We saw a clear improvement in compliance with guidance; lessons were learnt about appropriate prophylactic prescribing in renal impairment and insights gleaned regarding cascading this through education. Our second cycle identified that to encourage sustainability we would need to widen our education session to doctors from other specialties and incorporate the pharmacy team as less rotational members of staff, offering anchoring to our changes. We also hope to use induction to convey key messages and undertake another cycle to assess the impact of our further interventions.
Implications range from patient safety importance (reduced risk of HIT) to increased compliance with guidelines (ensuring high quality stream-lined care) and financial savings (dalteparin being cheaper).

References

1. Douketis J, Cook D, Meade M, et al; Canadian Critical Care Trials Group. Prophylaxis against deep vein thrombosis in critically ill patients with severe renal insufficiency with the low-molecular-weight heparin dalteparin: an assessment of safety and pharmacodynamics: the DIRECT study. Arch Intern Med. 2008;168(16):1805-12.
2. Pai M, Adhikari NKJ, Ostermann M, et al; Low-molecular-weight heparin venous thromboprophylaxis in critically ill patients with renal dysfunction: A subgroup analysis of the PROTECT trial. PLoS One. 2018;13(6):e0198285.
3. Schmid P, Brodmann D, Fischer AG, Wuillemin WA. Study of bioaccumulation of dalteparin at a prophylactic dose in patients with various degrees of impaired renal function. J Thromb Haemost. 2009;7(4):552-8.
4. Atiq F, van den Bemt PM, Leebeek FW, van Gelder T, Versmissen J. A systematic review on the accumulation of prophylactic dosages of low-molecular-weight heparins (LMWHs) in patients with renal insufficiency. Eur J Clin Pharmacol. 2015;71(8):921-9.
5. Tincani E, Mannucci C, Casolari B, et al. Safety of dalteparin for the prophylaxis of venous thromboembolism in elderly medical patients with renal insufficiency: a pilot study. Haematologica. 2006;91(7):976-9.
6. Cook D, Douketis J, Meade M, et al; Canadian Critical Care Trials Group. Venous thromboembolism and bleeding in critically ill patients with severe renal insufficiency receiving dalteparin thromboprophylaxis: prevalence, incidence and risk factors. Crit Care. 2008;12(2):R32.

# An Updated Meta-analysis of Randomized Controlled Trials of Dual Antiplatelet Therapy Versus Aspirin in Patients with Stroke Or Transient Ischemic Attack.

Dr Ali Akhtar – IMT2, Addenbrookes Hospital, Cambridge

## INTRODUCTION

Stroke is a major global health issue, leading to severe consequences like disability, cognitive impairment, and death. Lifetime stroke risk increased by 50% in 17 years.

Our research evaluates Dual Antiplatelet Therapy (DAPT) efficacy and safety and insights from RCTs to guide clinical decisions.

## METHOD

- Included RCTs with non-cardioembolic ischemic stroke or TIA patients treated within 72 hours.
- Five RCTs included - INSPIRES, THALES, POINT, CHANCE, and FASTER – examined use of DAPT over different durations from 21 to 90 days.
- Databases: PubMed, Cochrane Library, EMBASE, Web of Science. Search terms: “Stroke”, “Ischemic Stroke", "Transient Ischemic Attack", etc. Total articles screened: 10,400; included RCTs: 5. Meta-analysis using RevMan 5.4 and Endnote X8. Pooled odds ratio calculated with random effects model. Heterogeneity assessed using I2 values.

## 5 trials of 27,559 patients with minor stroke or TIA

| | Aspirin + P2Y12i | Aspirin |
|---|---|---|
| |  |  |
| | N = 13,687 | N = 13,673 |
| Recurrent Stroke (N) | 839<br>*OR 0.75; 95% CI, 0.68-0.82, P<0.001* | 1094<br>*OR 0.75; 95% CI, 0.68-0.82, P<0.001* |
| Major Bleeding (N) | 98<br>*OR 2.20; 95% CI, 1.38-3.51; P:0.0009* | 42<br>*OR 2.20; 95% CI, 1.38-3.51; P:0.0009* |

Dual Anti Platelet Effectively The Risk Of Recurrent Strokes And Cardiovascular Events, But Increases Risk Of Significant Bleeding

## RESULT

- Five studies with 27,559 patients.
- Trials compared Aspirin + Clopidogrel vs. Aspirin alone and Aspirin + Ticagrelor vs. Aspirin alone.
- Duration of DAPT varied from 21 to 90 days.
- Stroke Recurrence: DAPT reduced recurrence (OR 0.75; p<0.001; I2=0%)
- Major Bleeding: Higher with DAPT (OR 2.20; p=0.0009; I2=30%).
- Adverse Cardiovascular Events: Reduced with DAPT (OR 0.76; p<0.001; I2=5%).
- Recurrent Ischemic Events: Lower with DAPT (OR 0.73; p<0.001; I2=0%).
- Haemorrhagic Stroke: Increased with DAPT (OR 2.09; p=0.02; I2=8%).
- Degree of heterogeneity between studies: low to moderate ($I^2$ = 0–30)
- All studies assessed: low risk of bias

## CONCLUSION

- DAPT is effective in reducing recurrent strokes and cardiovascular events but increases the risk of major bleeding.
- Treatment decisions should balance thrombotic prevention with bleeding risk.

References: Valery, L. F., et al. (2022). International Journal of Stroke, 17(1), 18-29. Kuźma, E., et al. (2018). Alzheimer's & Dementia, 14(11), 1416–1426. Gao, Y., et al. (2023). N Engl J Med, 389(26), 2413-2424. Johnston, S. C., et al. (2020). N Engl J Med, 383(3), 207-217. Johnston, S. C., et al. (2018).

# A Rare Case Report of Immobility- Induced Hypercalcaemia

Dr Adam Sinker and Dr Ali Hussain

The Leeds Teaching Hospitals NHS Trust

## Patient background

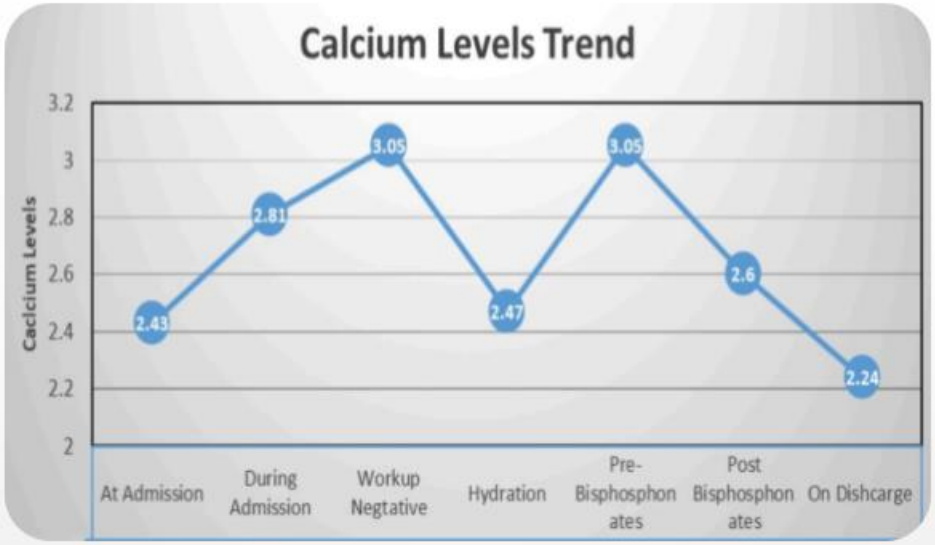
A 55-year-old patient was admitted with sudden-on-sudden left-sided weakness and slurring of speech. CT head showed a subacute right middle cerebral artery infarct. Patient had a long (164 day) admission to fulfil therapy needs.

## Hypercalcaemia

Routine blood testing on day 72 of admission revealed new hypercalcaemia (graph 1). The patient was investigated for an underling cause:

| Investigation | Result | Reference Range |
|---|---|---|
| **PTH** | <0.5 pmol/L | 1.5 – 7.6 pmol/L |
| **PTHrp** | < 1.40 pmol/L | < 1.40 pmol/L |
| **1-25 di-OH Vitamin D** | 42 pmol/L | 20- 120 pmol/L |
| **25 OH Vit D (Total)** | 52 nmol/L | 50- 100 nmol/L |
| **ACE** | <20 u/L | 20 - 70 u/L |
| **Immunoglobulin IgG** | 16.0 g/L | 6.0- 16.0 g/L |
| **Immunoglobulin IgA** | 3.51 g/L | 0.80 – 4.00 g/L |
| **Immunoglobulin IgM** | 1.11 g/L | 0.50 – 2.00 g/L |
| **Serum electrophoresis** | Unremarkable | - |
| **CT TAP** | Unremarkable | - |

Table 1: Investigation Summary




Graph 1: Calcium Level Trend and Treatment Timeline

As the patient had significant neurological deficits, the possibility of hypercalcemia of immobility was raised. Serum type I beta c-telopeptide (CTX) levels were sent… this was elevated at 0.80 ug/L (0.1 -0.5 ug/L).

## What is CTX?

Bone remodelling is controlled by osteoblast and osteoclast activity. 90% of the organic matrix of bone is type 1 collagen. [1] Type 1 collagen is a helical protein with crosslinks at the N and C ends of the protein. [2] During bone resorption, small peptide fragments known as CTX are released from the Type I collagen. [3] Beta-CTX is released into the bloodstream, thus acting as a biochemical marker of bone metabolism. [4]

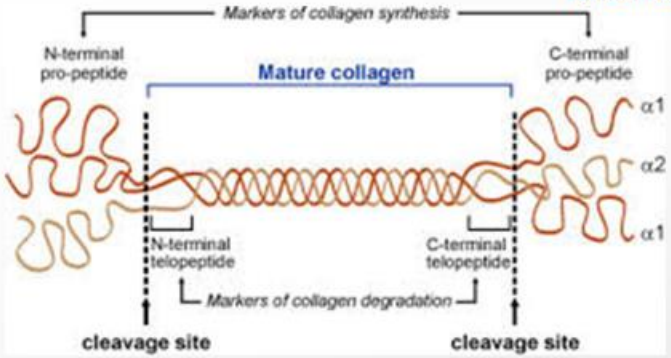



Figure 1: Collagen Synthesis[4]

## Significance

Elevated b-CTX indicated that the patients immobility was inducing their hypercalcaemia. Acute and severe immobilization can result in extreme hypercalcemia. Young adult men with a high peak bone mass are particularly susceptible to developing extreme hypercalcemia following a sudden neurological insult, as in our case.

## Recommendations

Hypercalcaemic patients with long hospital admissions, who have a low/normal PTH, standard myeloma screen, and a normal CT thorax, abdomen, and pelvis should have CTX blood tests sent considering a diagnosis of hypercalcemia of immobility.

**References**

1. Kuo T, Chen, C. Bone biomarker for the clinical assessment of osteoporosis: recent developments and future perspectives. Biomarker Research. 2017; 5(18).
2. Jensen L, Høt N. Collagen: scaffold for repair or execution. Cardiovascular Research. 1997; 33: 535-539.
3. Hashim A, Ali S, Emara I, El-Hefnawy M. CTX Correlation to Disease Duration and Adiponectin in Egyptian Children with T1DM. Journal of Medical Biochemistry. 2016; 35(1): 34-42.
4. Fan, D., Takawale, A., Lee, J. & Kassiri, Z. Cardiac fibroblasts, fibrosis and extracellular matrix remodelling in heart disease. Fibrogenesis Tissue Repair. 2012; 3(5):15.

# Inpatient medication deintensification in patients with diabetes and moderate-severe frailty did not lead to an increase in $HbA_{1c}$

**Kareem, Ali**[1]; Lwin, Hnin[2]; Fazil, Mohomed[2]; Gallagher, Alison[3]; Higgins, Kath[3]; Melson, Eka[3]; Davitadze, Meri[4]

[1]University Hospitals of Leicester, Leicester UK ; [2]University Hospitals of Leicester, Leicester, UK ; [3]University Hospitals of Leicester, Leicester, UK- Leicester Diabetes Centre, University of Leicester. UK ; [4]Clinic NeoLab, Tbilisi, Georgia - Institute of Applied Health Research, University of Birmingham, Birmingham, United Kingdom

## INTRODUCTION

- **Optimal $HbA_{1c}$ targets for people with diabetes and frailty is between 7.0 and 8.5% with any $HbA_{1c}$< 7.0% defined as overtreatment**
- **The benefit of medication deintensification outweighs the potential harm in older people with diabetes in community and nursing homes.**
- **No studies reported about safety and efficacy of inpatient deintensification post-discharge.**

## METHODS

**Electronic medical charts reviewed in all patients with diabetes and clinical frailty score (CFS) ≥6 who were discharged from the medical unit in 2022.**

**Data collected:**

- **Demographics: age, sex, ethnicity**
- **CFS**
- **Glucose lowering medication changes**
- **Hba1c levels before or during admission**
- **Hba1c levels post discharge (<12 weeks)**

## AIM: assess the effect of inpatient medication deintensification on glycaemic control post-discharge in people with diabetes and frailty.

**Baseline characteristics**

**Eighty-eight patients with diabetes, CFS ≥6, and their medication de-intensified were included in our analysis. 53.4% (n = 47/88) Female with median age of 76years (71-84) and median CFS of 6**

| Medication reduced/ stopped | Oral glucose lowering medication | Insulin | Oral glucose lowering medication and insulin |
|---|---|---|---|
| Number of patients | 37/88 (42.1%) | 46/88 (52.3%) | 5/88 (5.7% |

**$HbA_{1c}$ results:**

- $HbA_{1c}$ during admission was 7.8% (6.6-9.6%), not significantly different to the post-discharge $HbA_{1c}$ of 7.4% (6.6-8.7%), p=0.29.
- 38.6% of patients (n=34/88) had an increase in HbA1c post-discharge
- 16.7% (n=10/60) had clinically significant increase in HbA1c post-discharge (only applicable to patients who had 'optimal' pre-discharge $HbA_{1c}$ ($HbA_{1c}$ <8.5%) and is defined as an increase in $HbA_{1c}$ levels above 8.5% post-discharge ).

**Conclusion: No significant differences in $HbA_{1c}$ post-discharge for people with diabetes and frailty who underwent inpatient medication deintensification compared to the $HbA_{1c}$ that was assessed pre- or during admission as most patients did not have an increase in Hba1c. Rate of increase in HbA1c is lower for those who had an 'optimal' HbA1c pre- or during admission. Inpatient medication deintensification for patients with diabetes and frailty does not lead to harm in terms of deterioration in glycaemic control.**

# HOSPITAL SMOKING CESSATION SERVICES AUDIT: EVALUATING ACCEPTANCE RATES FOR SMOKING CESSATION INTERVENTIONS AND THE BURDEN OF SMOKING-RELATED HEALTH CONDITIONS IN HOSPITALIZED SMOKERS.

**Ali Hassan** , Tousif Baig , Syed Mehdi, Menaka Velewitharamalage, Sanjeewa Hettiarachchi, Tanmay Jain, Emma Dermody: Department of Respiratory Medicine, Royal Preston Hospital.

## INTRODUCTION

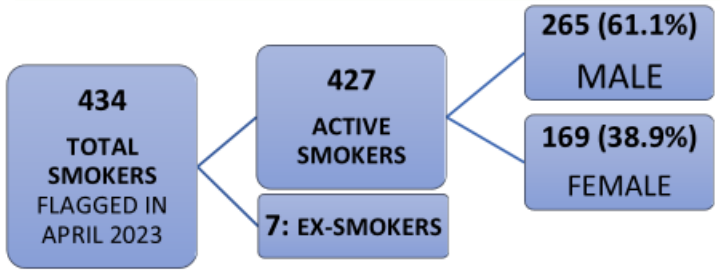
- Tobacco use: **Biggest public health threat** & Approx **half of all current users will die of a tobacco-related disease**[1]
- **In 2022-23 there were an estimated 408,700 hospital admissions due to smoking** (4.8% rise as compared to the last year)[1]
- **In-patient smoking cessation Team play a key role :** Identify & Provide **- (NRT)** and an onward **community referral**
- This audit analysed **various aspects of TACT** (Tobacco and Alcohol) team's reviews : demographics, acceptance rates smoking cessation therapies, health conditions linked to smoking.

## METHODOLOGY

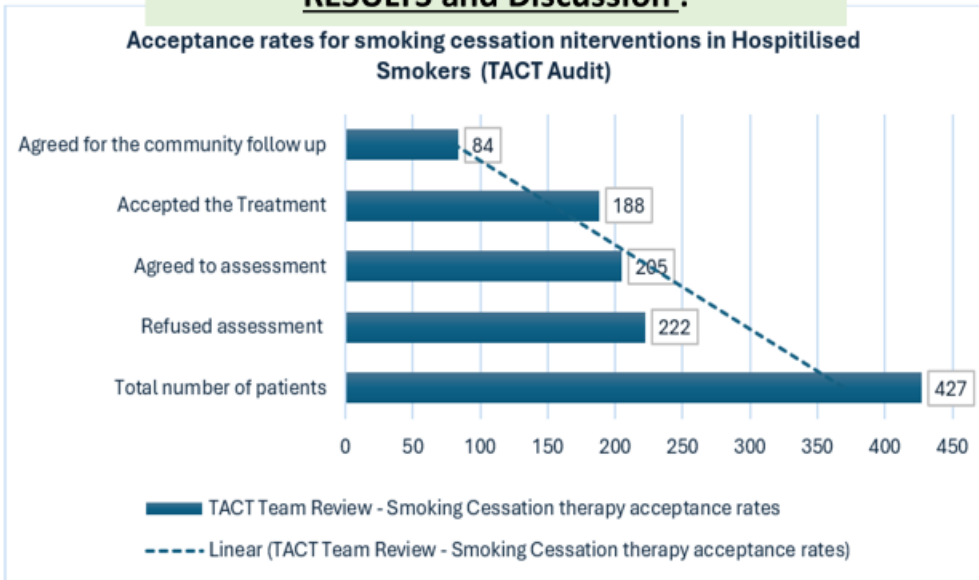
**Retrospective analysis** of TACT team reviews during **April 2023. Data** Collected on:

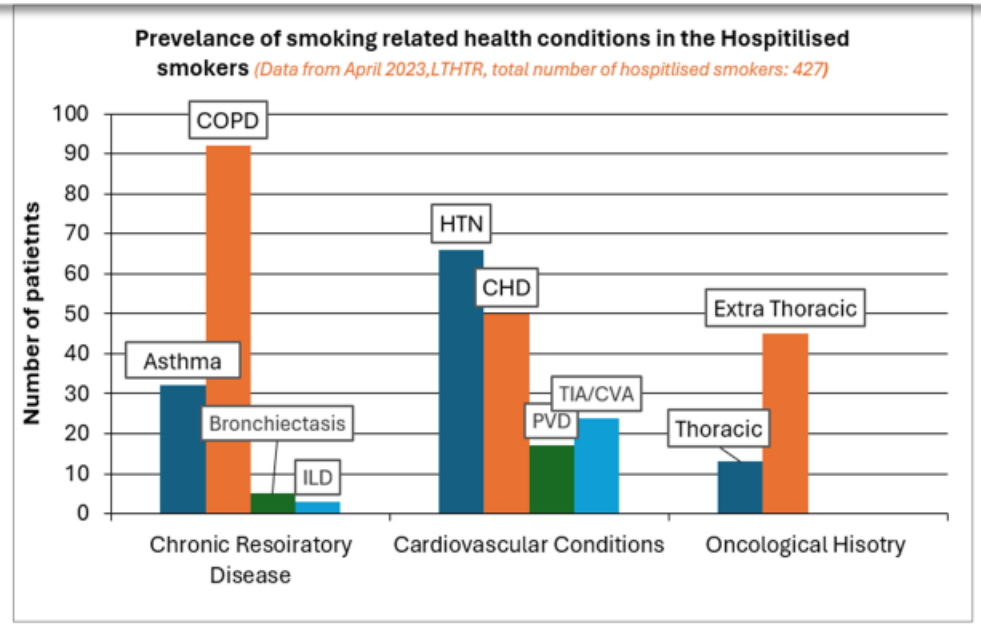
1. Patient **demographics** (age, gender, ethnicity)
2. Smoking related **Medical history** (Respiratory, Cardiovascular, and oncological)
3. NRT **treatment** and community follow-up **acceptance rates**.

## RESULTS and Discussion :




## RESULTS and Discussion :




## CONCLUSION:

### MISSED OPPORTUNITY!

- There is a substantial number of patients **with preexisting health conditions linked to smoking who continue to smoke.**
- Our data suggests that **acceptance rates for smoking cessation interventions in the hospitalised smokers are quite low**.
- **Only 20% patients agreed to continue receiving help trough community follow up showing the commitment to quitting.**

### CLINICIAN NEED TO PLAY MORE ACTIVE ROLE!

- Clinicians from multiple specialities have an **opportunity with every patient contact** to spread awareness about smoking cessation and its health benefits.

### BARRIERS FOR CLINICIANS DURING PROVISION OF SMOKING CESSATION!

A recent systematic review of clinician reported barriers to the provision of smoking cessation intervention includes **Lack of time**, **lack of knowledge (on smoking cessation interventions)**, **perceived lack of motivation to quit**, **and lack of support.**[2]

### RECOMMENDATIONS: likely to impact acceptance rates

- Smoking cessation advice be the **standard model of care during outpatient clinic setting, admission clerking, and post- take-ward rounds**
- **Training of staff** regarding smoking cessation interventions and referral processes.
- **Strengthening hospital smoking cessation services in terms of staffing and funding.**

**References**

1.https://www.england.nhs.uk/2023/12/hospital-admissions-due-to-smoking-up-nearly-5-per-cent-last-year-nhs-data-shows

2.Sharpe, T., Alsahlanee, A., Ward, K., & Doyle, F. (2018). Systematic Review of Clinician-Reported Barriers to Provision of Smoking Cessation Interventions in Hospital Inpatient Settings. Journal of Smoking Cessation, 13 (4), 233-243.

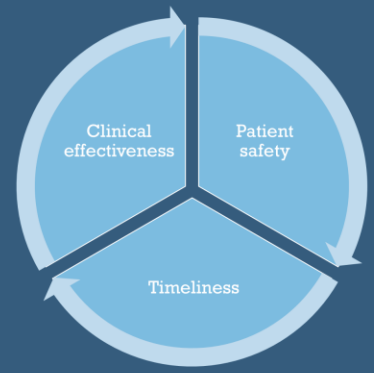
# SENIOR DAILY PATIENT REVIEW IN ACUTE MEDICINE AT A DISTRICT GENERAL HOSPITAL

United Lincolnshire Hospitals NHS Trust

## 1. Introduction

Senior daily patient review plays a crucial role in ensuring high quality, patient-centred care in acute medicine. This contributes to early detection of issues, collaboration among healthcare professionals, efficient resource utilisation and continuous improvement in the delivery of healthcare services.

Due to pressures on the hospitals across the NHS, many District General Hospitals like Lincoln County Hospital have a lot of their patients stuck in A&E waiting for a bed on MEAU often >24 hours. They would be clerked and have PTWR in A&E and a few will miss their next day senior (Consultant or Registrar) daily review until they move to MEAU.




## 2. Objectives

To ascertain how many patients miss senior daily review in Acute Medicine at LCH and improve this to ≥95% as per NHS 'Seven Day Services Clinical Standards' which states that patients should be reviewed by a senior at least ONCE EVERY 24 HOURS, seven days a week.

## 3. Methodology

Data collected from patient's notes over 1 week to identify patients who did not have a senior daily senior review for at least 24 hours spread across A&E and MEAU.

## 4. Issue

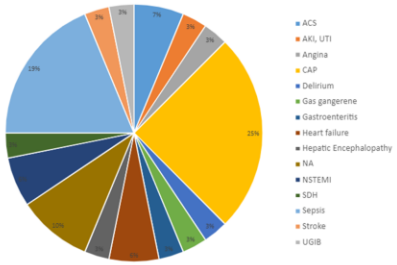



Fig.1: Diagnosis of missed patients

- 32 patients missed their senior daily review in the last week of October 2023 (23rd to 27th) – all in A&E
- These patients had varied diagnosis from PTWR like ACS, Sepsis, CAP, AKI, etc.
- Average medical patients in A&E per day = 37.5
- Average number of patients missed per day = 6.4
- Average percentage of patients missed = 17% (approximately 1 in 5 patients)

1/5

## 5. Intervention

A dedicated Registrar was appointed on most days for senior daily reviews in A&E for patients who had their PTWR the previous day and still waiting for bed in MEAU.

If there was no Registrar appointed for senior daily reviews on the day, A&E PTWR Consultant reviewed these patients.

## 6. Results

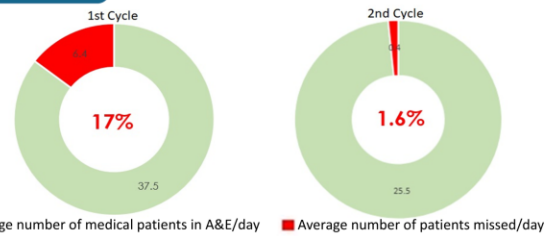
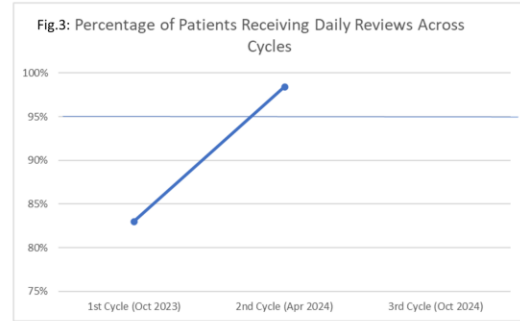



Fig.2: Average number of medical patients in A&E/day | Average number of patients missed/day

- In April 2024 (2nd cycle) only 2 patients missed senior daily review over 1 week out of average of 25.5 medical patients in A&E per day
- The Registrar on average reviewed 5 patients/day who would otherwise be missed




## 7. Conclusion

Pressure and poor patient flow at Lincoln County Hospital was causing many patient to miss their senior daily review. Appointing a Registrar in A&E has improved the situation in the short-term. For a long-term fix, an electronic system is recommended to track clerking doctors & PTWR details for easy identification of patients awaiting daily review.

The project emphasises the importance of senior daily review and supports ongoing quality improvement, aligned with NHS 'Seven Day Services Clinical Standards', to enhance care and outcome at Lincoln County Hospital.

*Authors: Dr. Ali Majeed, Dr. Muhammad Danial Yaqub*

*References:*
*NHS. (n.d.). NHS choices. https://www.england.nhs.uk/publication/seven-day-services-clinical-standards/*

# EVALUATING THE TIMING AND COMPLETENESS OF TREATMENT ESCALATION PLANNING FOR ACUTE ONCOLOGY ADMISSIONS- A SINGLE CENTRE AUDIT

Amelia Redman[1], Ella Daniels[1]
[1]Oncology Centre, Cheltenham General Hospital

Gloucestershire Hospitals NHS Foundation Trust

## Introduction

- Treatment escalation planning (TEP) has increasingly become part of routine clinical practice[1].
- The National Confidential Enquiry into Patient Outcome and Death recommends cardiopulmonary resuscitation (CPR) status must be considered and recorded for all acute admissions - ideally during the initial admission process and at the initial consultant review[2].
- Early and individualised decisions about CPR status help to provide good quality care for patients who are unstable or at risk of dying[1].

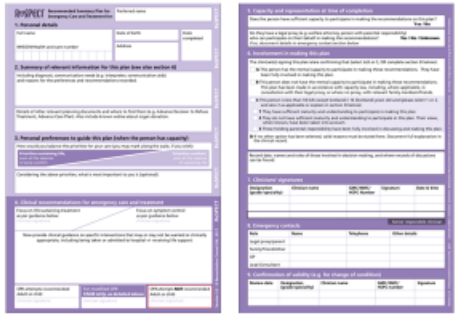


***Figure 1:*** *Recommended Summary Plan for Emergency Care and Treatment (ReSPECT) form*

## Aims

- To evaluate the proportion of patients with TEP forms completed within the first 24 hours of admission.
- To assess the extent to which the individual sections of the TEP form, in this audit ReSPECT form (figure 1), are completed.

## Methods

- Data was collected prospectively across a two-month period. N= 50 patients
- Inclusion criteria- unplanned acute admissions to the oncology ward.

## Results

- It was observed that only 50% of patients with forms completed had TEP discussions documented in the medical notes.
- The 'senior responsible clinician' had countersigned the TEP form in only 10% of cases.

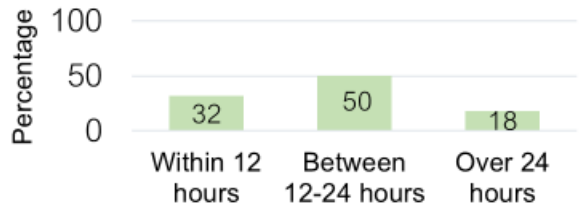



***Figure 2:*** *Time since admission for completion of TEP form*


***Figure 3:*** *Completion rate of TEP form during admission*

## Discussion

- Patients without capacity may not have a TEP form completed within 24 hours as discussions with next of kin may be required. Therefore, it may not be practical for 100% of TEP forms for acute admissions to be completed within this time scale.
- There is no standardised national TEP form- many variations exist across different healthcare trusts.

## Conclusion

- The majority of acutely admitted oncology patients have TEP forms, and these are completed within 24 hours of admission.
- Future interventions include departmental teaching sessions for junior doctors to improve their confidence in discussing treatment escalation planning with patients and their relatives.

## Acknowledgements

We would like to thank Dr. Alex Williams for her guidance and support with this project.

## References

1) Decisions Relating to Cardiopulmonary Resuscitation: guidance from the British Medical Association, Resuscitation Council (UK) and the Royal College of Nursing. 3rd edition (1st revision). London: 2016.
2) Time to Intervene. National Confidential Enquiry into Patient Outcome and Death (NCEPOD). London: 2012.

# THE SIGNIFICANCE OF A SCRIBE ROLE WITHIN AN ADULT EMERGENCY RESPONSE TEAM, QIP .

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Heartlands Hospital, University Hospital Birmingham - Birmingham, United Kingdom

## AIM

To increase the exposure of RDs to ERTs in whom there was a perceived lack of self-efficacy, stemming from the lack of confidence. With the aim to provide them with exposure and confidence, to join the ERT as a core team member during their subsequent on-calls.

## METHODOLOGY

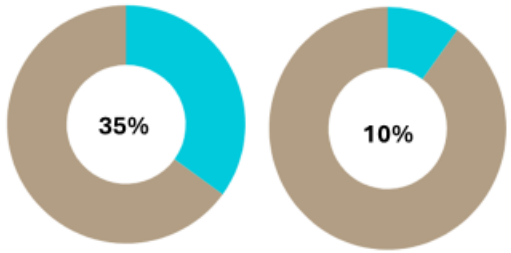
Between September 2023-July 2024 an additional, 'Scribe role' was introduced to the ERT, aimed at RDs, to allow for increased exposure by observing & documenting the sequence of events during a CA/ME response, at BHH. Those that signed up for the scribe role attended at least one CA & three MEs. Self-assessment forms were sent to participants pre, and post-participation to gather quantitative, and qualitative reflective feedback. The survey included a quantitative numerical scale of confidence (1 to 10).

## RESULTS

Twenty trust-grade RDs (F1 – ST2 level), from 71 overall, voluntarily completed two cycles. The pre-participation survey showed 35% (7/20) had previously attended a CA/ME at BHH, but only 10% (2/20) had led an ERT response – for which, the primary limiting reason was predominantly 'confidence' - despite 85% (17/20) completing ALS, within the past two years. After completing two rounds of the scribe role, the mean confidence levels in leading an ERT prior to carrying a scribe bleep (M = 2, SD = 1.5), compared to after carrying a scribe bleep twice, (M = 8, SD = 1.1).

The difference in levels of confidence is significant (t(38) = -14.4 , P = 0.021).

**Abbreviations - ERT** Emergency Response Team , **RD** Resident Doctor . **CA** Cardiac Arrest , **ME** Medical Emergency

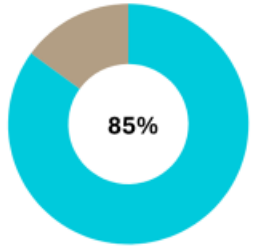



Pre-participation Attended in-hospital CA/ME

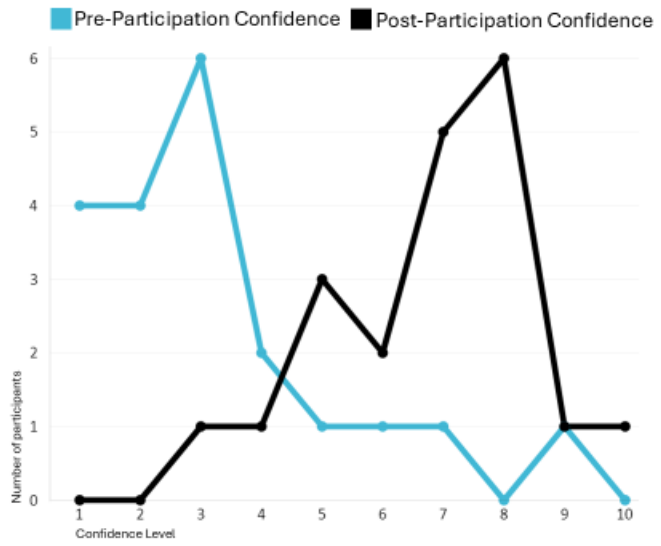



Pre-participation ERT Lead


Scribe role Effectiveness of within ERT




Post-participation willingness to lead ERT




University Hospitals Birmingham NHS

*Scan QR Code for Authors Correspondence details*

## CONCLUSION

This study highlights the significance of incorporating a scribe-role as a non-core-member within hospital ERTs, on improving levels of confidence within RD cohorts - especially international graduates - to voluntarily lead a CA/ME; Ultimately, improving patient care, at the most critical of times.

# Dr, Can You Review This ECG?
# Right Bundle Branch Block in a Patient with a Permanent Pacemaker.

**Authors:** Hsu Yee Mon[1], Amrit Samra[1], Dhruv Gosain[1], Zulakha Nadeem[1], Yusuf Kiberu[1]

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## INTRODUCTION

Transvenous right ventricular (RV) lead placement typically results in a left bundle branch block (LBBB) morphology due to RV activation preceding LV. A right bundle branch block (RBBB) morphology may therefore indicate a complication such as septal/free wall perforation, lead placement in the coronary sinus, or unintentional left ventricular (LV) lead placement, potentially through subclavian artery access or a patent foramen ovale /atrial septal defect.[1] However, RBBB morphology can sometimes also be seen with a correctly positioned RV lead. [1–3]

On the acute medical take, the presence of RBBB morphology on a 12-lead electrocardiogram (ECG) in a patient with an RV lead permanent pacemaker (PPM) should raise suspicion of a PPM complication.

## CASE PRESENTATION

History of Presenting Complaint

- 80F
- Background: COPD(LTOT), T2DM,HTN, CKD
- SOB, pleuritic chest pain
- Recent PPM implant

Physical Examination

- Examination revealed a wheeze, tachypnoea (29/min), a blood pressure of 127/82 mm Hg, and an oxygen saturation of 89% on LTOT.

| | |
|---|---|
| **CXR** | hyperinflation, PPM leads in position |
| **ECG** | a paced-RBBB morphology (figure 1) |
| **ECHO** | Echocardiogram ruled out a pericardial effusion and confirmed lead position with no evidence of lead perforation |
| **Pacing checks** | confirmed satisfactory pacing parameters not changed compared to post-implant |

*Table 1: Investigations*

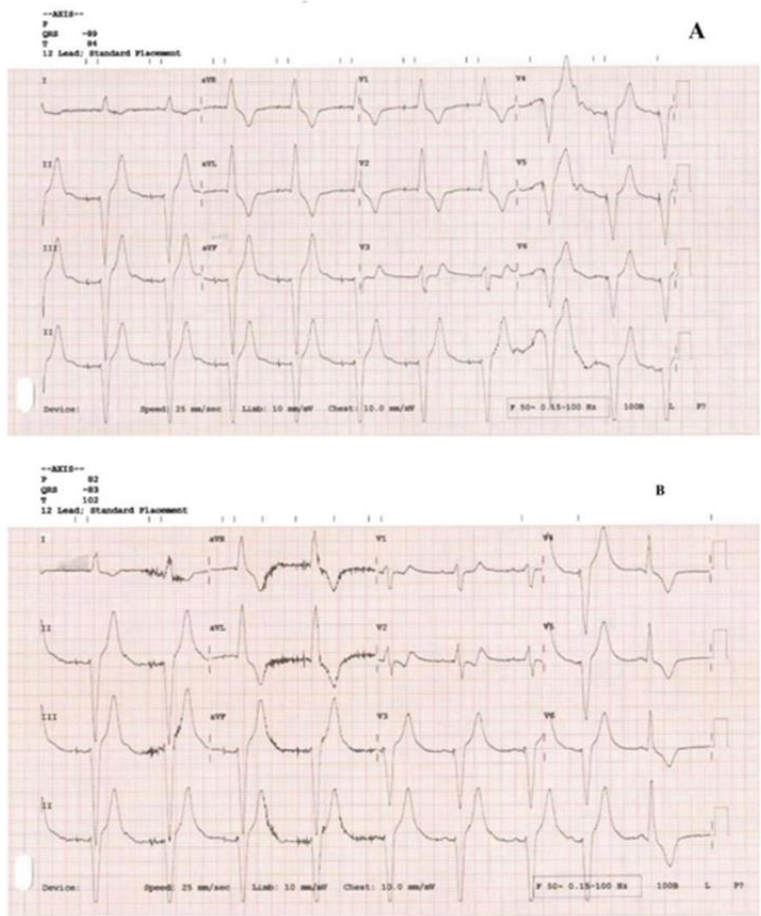



**Figure 1:** 12-lead ECGs post RV-pacing showing RBBB. ECG A shows a paced RBBB and precordial transition at V3 with standard position of leads V1 and V2. ECG B is following Klein's manoeuvre i.e. placing V1 and V2 one intercostal space lower.

## DISCUSSION

Lead function and position should always be checked when RBBB is noted in a patient with a PPM. **Uncomplicated RBBB may be due to**

- Retrograde conduction through the right bundle branch to the atrioventricular node (AVN)
- Pre-existing right-sided conduction abnormalities
- Early left ventricular activation via abnormal pathways
- Deeply implanted septal lead, leading to earlier LV activation. [3–6]

The **prevalence of uncomplicated RBBB morphology following RV pacing is higher in apical vs septal lead positions**. There is however a **higher risk of lead displacement in RV septal versus apex** which importantly for our case, carries a higher perforation risk.

Pacing lead position and stability are checked interprocedurally and post-procedure with a PA/Lateral CXR and pacing checks.

The net frontal plane QRS vector during RV pacing is left and upwards. If ECG leads V1+V2 are placed

- Above a plane perpendicular to this net vector → pseudo-RBBB will be produced (ECG A in figure 1).
- One intercostal space lower **(Klein manoeuvre)** → eliminate the RBBB and reveal precordial transition ≤ V3, very specific for correct RV lead location, making perforation/displacement unlikely (ECG B in figure 1).[7,8]

## CONCLUSION

- **RBBB can indicate perforation/lead displacement but can also be uncomplicated.**
- **On the acute medical take, the Klein manoeuvre and Chest X-ray can complement clinical assessment, safely avoiding an out-of-hour admission.**
- **Outpatient pacing check/cardiology review can be arranged due to the low index of suspicion.**

## REFERENCES

References : Agarwal R. Abnormal Electrocardiogram after a Pacemaker. J Clin Prev Cardiol. 2023;12(1):40–2.
Vijayaraman P, Cardiac KE, 2014 undefined. Electrocardiographic analysis of paced rhythms: correlation with intracardiac electrograms. cardiacep.theclinics.com [Internet]. [cited 2024 Feb 25]; Available from: https://www.cardiacep.theclinics.com/article/S1877-9182(14)00059-8/abstract
Gupta A, Parakh N, Juneja R. Right bundle branch block pattern after uncomplicated right ventricular outflow tract pacing in a patient with a left sided superior vena cava and corrected tetralogy of Fallot. Indian Pacing Electrophysiol J [Internet]. 2018;18(1):39–41. Available from: https://doi.org/10.1016/j.ipej.2017.11.005
Tzeis S, Andrikopoulos G, Weigand S, Grebmer C, Semmler V, Brkic A, et al. Right bundle branch block-like pattern during uncomplicated right ventricular pacing and the effect of pacing site. American Journal of Cardiology [Internet]. 2016;117(6):935–9. Available from: http://dx.doi.org/10.1016/j.amjcard.2015.12.028
Mower MM, Aranaga CE, Tabatznik B. Unusual patterns of conduction produced by pacemaker stimuli. Am Heart J. 1967;74(1):24–8.
Barold SS, Narula OS, Javier RP, Linhart JW, Lister JW, Samet P. Significance of right bundle-branch block patterns during pervenous ventricular pacing. Heart [Internet]. 1969 May 1 [cited 2024 Feb 25];31(3):285–90. Available from: https://heart.bmj.com/content/31/3/285
Klein HO, Beker B, Sareli P, DiSegni E, Dean H, Kaplinsky E. Unusual QRS morphology associated with transvenous pacemakers. The pseudo RBBB pattern. Chest [Internet]. 1985;87(4):517–21. Available from: http://dx.doi.org/10.1378/chest.87.4.517
Almehairi M, Ali FS, Enriquez A, Michael K, Redfearn D, Abdollah H, et al. Electrocardiographic algorithms to predict true right ventricular pacing in the presence of right bundle branch block-like pattern. Int J Cardiol [Internet]. 2014;172(3):e403–5. Available from: http://dx.doi.org/10.1016/j.ijcard.2013.12.258

# A case of primary Evans' syndrome : Insights into diagnostic challenges and therapeutic strategies

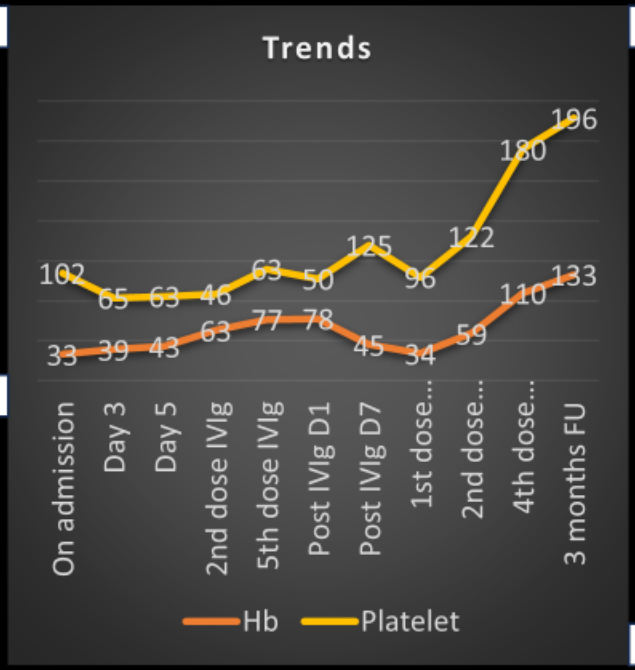
Jog Aniruddha, Chonde Neha, Sawardekar Vinayak

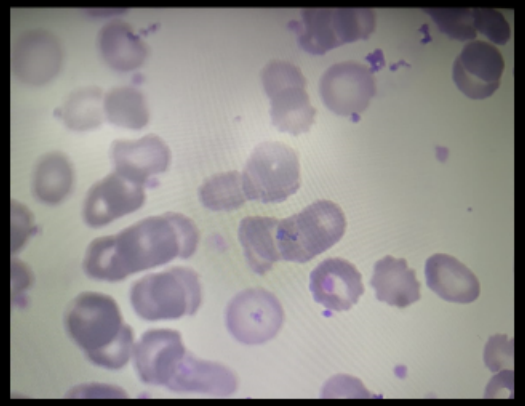
## INTRODUCTION

- Evans' syndrome is a rare autoimmune condition characterized by simultaneous autoimmune haemolytic anemia (AIHA) and thrombocytopaenia with or without neutropenia with positive anti globulin test.
- Its incidence is estimated to be around **1 case per 1,000,000/year**, (1) with only 4% having primary ES and a slight female predominance.
- The aetiology could be primary (idiopathic) or secondary to immune deficiency, lymphoproliferative disorders, or other autoimmune conditions(1).

## CASE

- Patient: A 35-year-old woman with known hypothyroidism presented with easy fatiguability and generalized weakness since 3 weeks. Clinically, she had pallor and splenomegaly.
- Laboratory investigations showed anaemia and thrombocytopaenia and peripheral smear showed raised reticulocyte count.
- Direct Coombs test (DCT) was positive (+++) and serum LDH was elevated. Bone marrow biopsy showed hypercellular marrow with erythroid hyperplasia. CT scan ruled out disseminated malignancy. Serological investigations and autoimmune profile were negative.
- After multidisciplinary discussion, a diagnosis of primary Evan's syndrome was made. She received pulse IV methylprednisolone but, as there was no response and the patient was transfusion dependent, the therapy was escalated to IVIg.
- Whilst in hospital, she developed sudden onset dyspnoea. CT pulmonary angiography confirmed pulmonary embolism for which she was treated with therapeutic anticoagulation.
- Consistently low haemoglobin prompted initiation of second-line therapy of Rituximab with steroids. She showed excellent response to treatment and her blood parameters improved. She had a transfusion free course post initiation of Rituximab.
- She was discharged on oral steroids, MMF and anticoagulation. On follow up, she has remained transfusion free.



## DISCUSSION

- Evans' syndrome was first described by Robert Evans as an association between idiopathic thrombocytopenic purpura and AIHA. A combination of genetic and epigenetic factors is involved in its pathophysiology.(2)
- Peripheral smear, viral markers for HIV, HBV, HCV, CMV and EBV, autoantibodies, bone marrow aspiration and cross-sectional imaging are recommended to rule out secondary causes. (3)
- Our patient presented with symptoms of anaemia. Investigations revealed haemolytic anaemia and thrombocytopaenia.
- Strikingly, our patient developed PE despite thrombocytopenia and an explanation for this could be that AIHA increases the risk of thrombosis especially in presence of active disease(4). Thus, highlighting the importance of prophylactic anticoagulation in these patients.
- Corticosteroids are the cornerstone of therapy in life-threatening ES, with methylprednisolone pulses often required. **IV Immunoglobulin** is an alternative when corticosteroids prove inadequate(3).
- **Rituximab,** with an 82% initial response rate, is a preferred second-line treatment. Other options include mycophenolate mofetil, splenectomy, and hematopoietic stem cell transplantation.(3)

## CONCLUSION

- Primary ES is a rare aetiology which requires prompt diagnosis and early initiation of treatment due to risk of bleeding as well as thrombosis.

## REFERENCES

1. Michel M, Chanet V, Dechartres A, et al. The spectrum of Evans syndrome in adults: New insight into the disease based on the analysis of 68 cases. Blood. 2009;114(15):3167–72.
2. Shaikh H, Prerna ; Affiliations M. Evans Syndrome Continuing Education Activity.
3. Audia S, Grienay N, Mounier M, Michel M, Bonnotte B. Evans' syndrome: From diagnosis to treatment. Vol. 9, Journal of Clinical Medicine. MDPI; 2020. p. 1–22
4. Audia S, Bach B, Samson M, et al. Venous thromboembolic events during warm autoimmune hemolytic anemia. PLoS One. 2018 Nov 1;13(11).

# A RARE CASE OF DIFFUSE LARGE B CELL LYMPHOMA MASQUERADING AS GUILLAIN BARRE SYNDROME, WARBURG PHENOMENON AND HEMOPHAGOCYTIC LYMPHOHISTIOCYTOSIS

Presenting Author: Anupama Kurup, Internal Medicine Trainee
Co-Author: Deepak Charles, Department of Haematology, Aster Medicity, Kochi, India

## Background

We report **a case of pyrexia of unknown origin** presenting with **lactic acidosis and hypoglycaemia.** He further developed **Guillain barre syndrome and Hemophagocytic Lymphohistiocytosis**. The bone marrow biopsy ultimately reported **Diffuse large B cell lymphoma**.

## Case description

A 74 year old gentleman presented with fever since two weeks . There was no localising focus of infection. On examination he was febrile with mild hepatomegaly.

Investigations **revealed elevated inflammatory markers**. Peripheral smear revealed leukopenia and thrombocytopenia. Cultures were sterile. Tropical panel and rheumatological work up were negative. He was treated with intravenous antibiotics and steroids .

## Course in Hospital

- Developed **repeated hypoglycaemic episodes**
- ABG-Metabolic acidosis with **elevated lactate**

- **Lower limb followed by upper limb weakness (**NCV-AMSAN variant) set in
- Responded with Intravenous immunoglobulin and steroids

- Fever , bicytopenia, lactic acidosis , hypoglycaemic episodes persisted
- Developed Hypotension and Oliguria- started on ionotropic supports and haemodialysis

- Repeat peripheral smear - Leucoerythroblastic picture and 3 % atypical lymphoid cells. Procalcitonin ,LDH and Ferritin elevated - **suggestive of HLH**.
- PET CT -increased FDG avidity in liver, spleen and marrow

- Bone marrow aspirate -presence of hemophagocytosis.
- Biopsy -**Large atypical mononuclear cells positive for CD 20.**
- Karyotyping analysis - t(1:1)(p36:q21). CSF analysis was normal
- Started on **intravenous steroids**( for secondary HLH) followed by chemotherapy (R-CVP regimen)

- Post 4 cycles of **R mini-CHOP** – PET CT showed good response.

## Tests and results

| | |
|---|---|
| CRP | 260 mg/dl |
| Ferritin | 8476 ng/ml |
| LDH | 1998 IU/L |
| Triglyceride | 266 mg/dl |

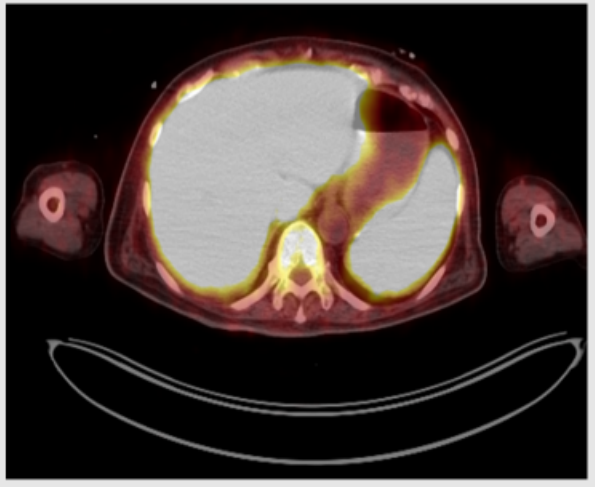


Figure 1 PET CT showing increased uptake in spleen, liver and marrow

## Discussion

An unique aspect of our case was the presence of **hypoglycaemia and lactic acidosis** . It couldn't be explained by hypoperfusion, toxins or drugs and persisted despite fluid replenishment. The association between hypoglycaemia and lactic acidosis is rare but well documented in malignancies but its association with severe asymptomatic hypoglycaemia is extremely rare [1]. **Warburg effect** was described by Otto Warburg in 1920s. It is characterized by increased glucose uptake causing lactate production by tumour cells in the presence of oxygen[2]GBS can by caused by tumour factors , infection or neurotoxicity of chemotherapy .Our patient responded well with **Intravenous immunoglobulins and steroids**. He also developed Hemophagocytic Lymphohistiocytosis. The mainstay treatment of malignancy associated HLH is **chemotherapy** which was promptly initiated here.

## Conclusion

This case portrays **a unique presentation of DLBCL** and underscores the importance of suspecting malignancy in the least typical of circumstances.

## References

1.Friedenberg AS, Brandoff DE and Schiffman FJ. Type B lactic acidosis as a severe metabolic complication in lymphoma and leukemia: Medicine (Baltimore) 2007; 86: 225–232.

2.Pascale RM, Calvisi DF, Simile MM, Feo CF, Feo F. The Warburg effect 97 years after its discovery. Cancers. 2020;12(10):2819.

# Improving PPE Compliance to Reduce Carbopenemase-Producing Enterobacteriacea (CPE) Transmission in an Acute Stroke Unit.

Authors: Aqsa Saeed, Imogen Smedley

North Middlesex University Hospital NHS Trust

## Introduction & Aims

CVA (cerebrovascular accident) patients are highly vulnerable to infections like CPE (Carbapenemase-Producing Enterobacteriaceae), a resistant superbug. Following recent CPE cases in our Stroke Unit, this project aims to enhance PPE compliance and assess healthcare practitioners' attitudes.

## Methodology

An initial survey of 21 HCPs used a 5-point Likert scale to assess PPE confidence and knowledge around CPE. After implementing targeted intervention based on findings, a follow-up survey was conducted to evaluate changes in compliance.

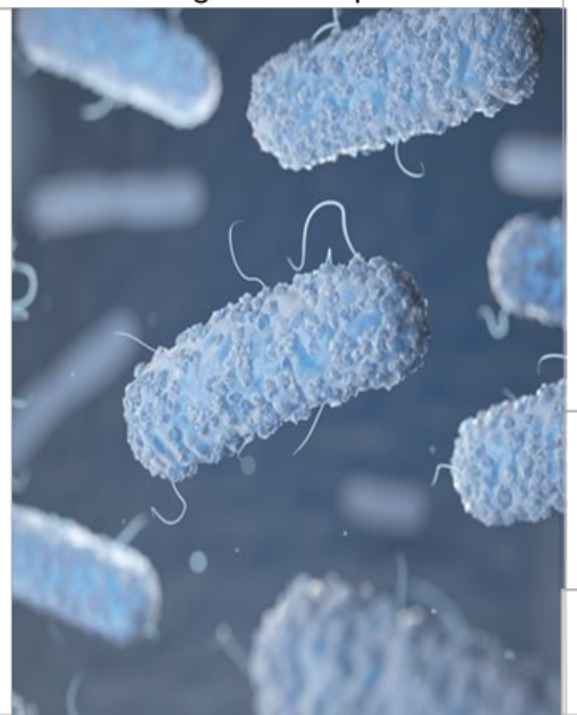
## Discussion & Analysis

Survey results indicated varied PPE competence levels among HCPs. Key issues included outdated posters, limitation in access, lack of theoretical and practical training.

**Interventions included:**

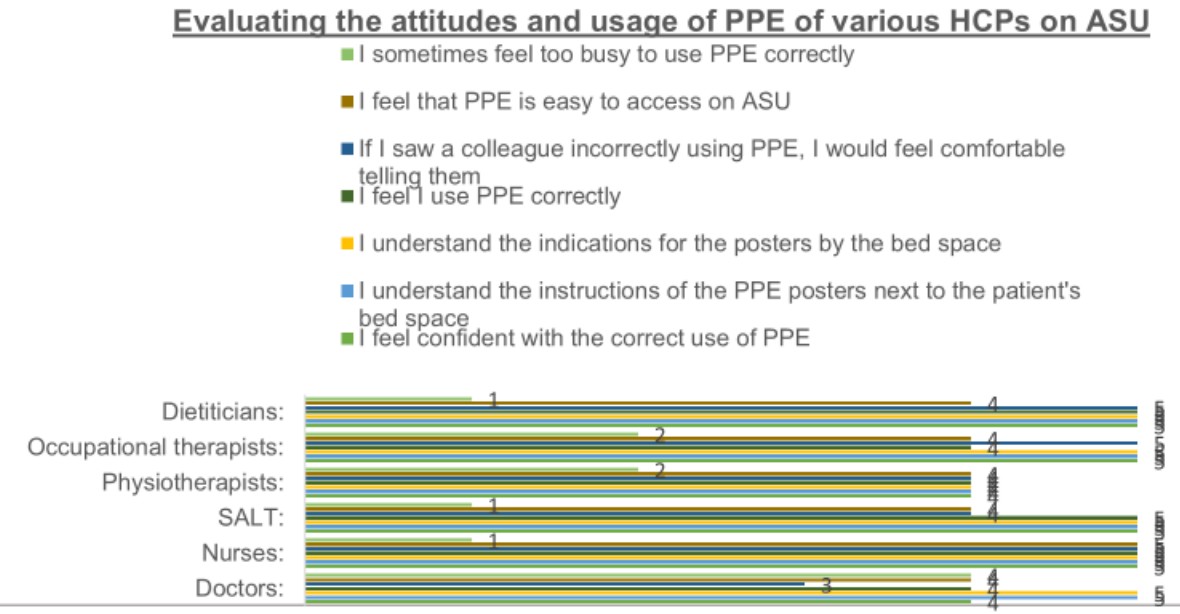
**1.Education**: Targeted training sessions on CPE and PPE delivered to HCPs, in collaboration with Infection Prevention and Control (IPC).

**2.Resources**: Developed new infection control posters, improved PPE availability, and distributed multilingual patient information leaflets for greater inclusivity.



## Results & Findings

The results indicated suboptimal PPE practices contributing to CPE spread. Factors include high ward pressures and varying staff backgrounds, necessitating ongoing training and support.




## Conclusion

Initial findings confirm inadequate PPE use impacting CPE transmission. Education and resource improvements are in progress, with plans for ongoing patient feedback to enhance infection control measures.

## References

1. Smith HZ, Hollingshead CM, Kendall B. Carbapenem-Resistant Enterobacterales. [Updated 2024 Feb 2]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK551704/ 2. Tsang CC, Holroyd-Leduc JM, Ewa V, Conly JM, Leslie MM, Leal JR. Barriers and Facilitators to the Use of Personal Protective Equipment in Long-Term Care: A Scoping Review. J Am Med Dir Assoc. 2022;23(3):366-374.e9. Available from: https://www.sciencedirect.com/science/article/pii/S1525861022008908 3. Cordeiro L, Gnatta JR, Ciofi-Silva CL, Price A, de Oliveira NA, Almeida RMA, et al. Personal protective equipment implementation in healthcare: A scoping review. Am J Infect Control. 2022;50(6):702-710. Available from: https://www.sciencedirect.com/science/article/pii/S0196655322000530

# CLINICAL AUDIT OF MEDICINES OPTIMISATION PRACTICES IN CARE OF THE ELDERLY WARDS

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EASTBOURNE DISTRICT GENERAL HOSPITAL, EAST SUSSEX HEALTHCARE NHS

## INTRODUCTION:

Medicines optimisation in geriatric care is essential to ensure patient safety and treatment efficacy due to the complexity of medication regimens and the high prevalence of polypharmacy and the heightened vulnerability of elderly patients to medication-related adverse events. This clinical audit evaluated current practices against NICE guideline NG5 recommendations underscoring the imperative of optimising medicine use to enhance patient outcomes and safety in three care of the elderly wards at Eastbourne District General Hospital: Frailty, Glynde, and Seaford. [1]

## OBJECTIVES:

1. **Medicines Reconciliation:** To assess the implementation and timeliness of medicines reconciliation processes, with particular focus on adherence to the NICE recommendation of completion within 24 hours of admission.
2. **Medication Review:** To examine the frequency, quality, and documentation of medication reviews, including the extent of pharmacist involvement in these processes.
3. **Medicines-Related Communication:** To evaluate the effectiveness of medicines-related communication systems, especially during care transitions, and their impact on continuity of care.
4. **Patient Involvement:** To quantify the level of patient involvement in medicines-related decisions and the provision of self-management plans, assessing adherence to patient-centred care principles.
5. **Discharge Practices:** To review discharge medication practices and follow-up arrangements, assessing their completeness and timeliness.
6. **Multidisciplinary Team Involvement:** To assess the extent and nature of multidisciplinary team involvement in medicines optimisation, including the specific role of pharmacists in care decisions.
7. **Clinical Decision Support:** To evaluate the utilisation and effectiveness of clinical decision support systems in prescribing practices across the three wards.
8. **Safety Incident Reporting:** To evaluate practices surrounding medicine safety incident reporting and learning, including the frequency and nature of reported incidents.
9. **Documentation of Medicines Indication:** To assess the comprehensiveness and consistency of documentation for medicines indications across different medication classes.
10. **Cross-Ward Standardisation:** To identify and quantify variations in medicines optimisation practices across the three wards, with a view to standardising best practices.
11. **Outcome Correlation:** To examine the relationship between medicines optimisation practices and key patient outcomes, including length of stay and 30-day readmission rates.

## METHODS:

A retrospective analysis of 300 patient records (100 per ward: Frailty, Glynde, and Seaford) was conducted from May to July 2024. Data from electronic systems (ePMA, eSearcher, Nervecentre) were extracted using a standardised 517-variable tool. Compliance with NICE guideline NG5 recommendations was assessed across the following eleven domains: medicines reconciliation, medicines-related communication, medication review, patient involvement, self-management plans, clinical decision support, multidisciplinary team involvement, safety incident reporting, discharge practices, allergies and adverse reactions, and pharmacist involvement. Statistical analysis included descriptive statistics, inferential statistics, and logistic regression, with a significance level of $p<0.05$.

## RESULT:

Demographic analysis revealed a mean age of 84.98 years (SD=8.00) across all wards, with a slight female majority (51.7%).

Ethnicity data showed a predominance of White British patients (73.0%), with a notable proportion of unstated ethnicities (17.8%).

This audit identified key areas of good practice, including patients involvement, multidisciplinary team engagement, and excellent discharge processes. It also exhibited critical areas requiring improvement in particular in medicines reconciliation and standardisation of practices across all wards.

Medicines reconciliation was suboptimal, with only 20.5% of patients receiving this within 24 hours of admission (NICE target: 100%). Inter-ward variations were notable: Frailty (37%), Glynde (37%), and Seaford (51%).

High compliance was observed in patient involvement (94%), self-management plan provision (94.3%), and use of clinical decision support systems (90.3%). Multidisciplinary team involvement was strong (94.3%), with pharmacist involvement in 84.7% of cases across all three wards.

Medication reviews were conducted for 84.8% of patients.

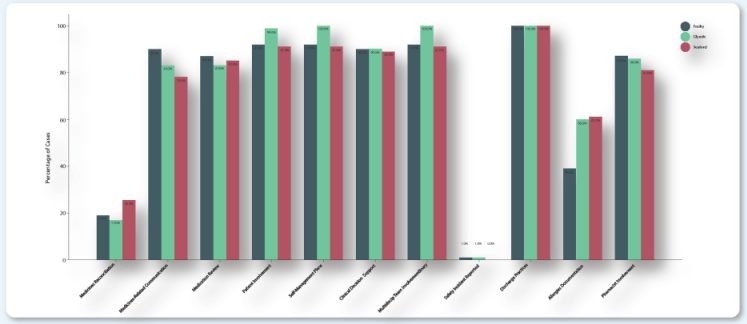
Significant variations were identified in 30-day readmission rates: Frailty (31%), Glynde (43%), and Seaford (27%). The mean length of stay was 17.05 days (SD=19.79), with Frailty ward showing the longest average stay (21.78 days, SD=28.97). Documentation of medicines indications was inconsistent with the NICE guideline's standards, primarily limited to anticoagulants and antimicrobials.

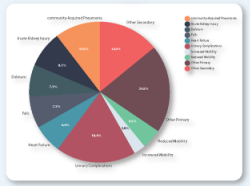
Documentation of allergies and adverse reactions was excellent, with 40-60% of patients having no known drug allergies. Common allergies included penicillin (18.7%), statins (6-9%), and ACE inhibitors (3-6%).

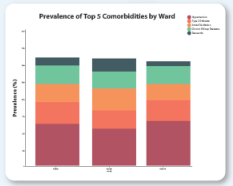
Discharge practices showed 100%.

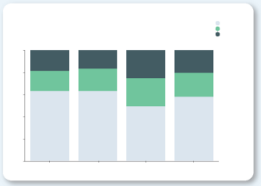
Medicine safety incidents was notably low at 0.66%. The most frequent primary reasons of admission across all wards were Community-Acquired Pneumonia (10.5%), Acute Kidney Injury (8.1%), Delirium (7.3%), Falls (7.3%), and Heart Failure (6.6%). Prevalent comorbidities across all wards included Hypertension (61.2%), Type 2 Diabetes Mellitus (29.9%), Atrial Fibrillation (28.2%), Chronic Kidney Disease (26.5%), and Dementia (12.0%).

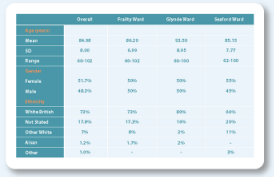
Statistical analysis revealed significant correlations between timely medicines reconciliation and reduced length of stay ($p<0.05$). Logistic regression identified age, number of comorbidities, and ward assignment as significant predictors of 30-day readmission rates ($p<0.01$).

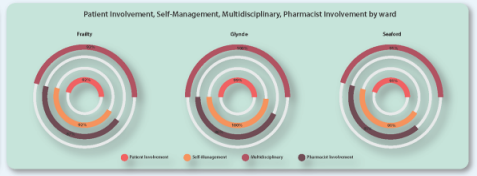


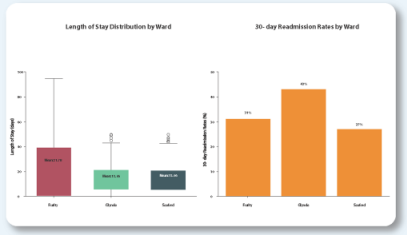





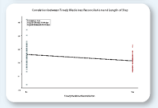



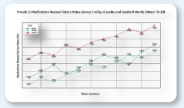










## CONCLUSION:

This comprehensive clinical audit of medicines optimisation practices across three cares of the elderly wards has revealed a nuanced landscape of strengths and critical areas for improvement. While excelling in patient involvement, self-management support, and discharge practices, significant deficiencies were identified in timely medicines reconciliation and standardization of practices across wards. The stark variations in readmission rates and length of stay underscore the potential impact of these gaps on patient outcomes.

The audit findings highlight the urgent need for a systemic overhaul of current practices, emphasizing the critical role of timely and accurate medicines reconciliation, consistent documentation, and standardized cross-ward protocols. This audit serves as a catalyst for change, providing an evidence-based foundation for targeted interventions that promise to enhance patient safety, reduce medication errors, and optimize therapeutic outcomes in this vulnerable population.

## RECOMMENDATIONS:

**1. Improve Medicines Reconciliation:**

- Implement an electronic medicines reconciliation tool across all wards with the ability to alert the pharmacists and doctors in charge to initiate the medicines reconciliation shortly after patient's admission.
- Set progressive targets: increase reconciliation within 24 hours to 80% within 6 months.
- Assign responsibility to Head of Pharmacy and Chief Nursing Officer.

**2. Enhance Documentation of Medicine Indications:**

- Update ePMA system to include mandatory fields for all medication indications.
- Aim to increase indication documentation from inconsistent practice to 95% for all medications.
- Task Head of IT and Clinical Director with overseeing system update.

**3. Standardise Practices Across Wards:** • Develop and implement standardised protocols for key processes (e.g., medicines reconciliation, medication review).

- Reduce inter-ward variation in practice compliance to less than 5%.
- Clinical Director and Ward Managers to lead protocol development.

**4. Implement Post-Discharge Pharmacy Follow-up:**

- Establish a service for high-risk patients to address high readmission rates.
- Target to decrease overall 30-day readmission rate from 43% to below 25%.
- Head of Pharmacy and Discharge Coordinator to design and implement service.

## REFERENCES:

1. National Institute for Health and Care Excellence (NICE). (2015). Medicines optimisation: the safe and effective use of medicines to enable the best possible outcomes. NICE guideline [NG5]. Retrieved from **https://www.nice.org.uk/guidance/ng5**

2. Royal Pharmaceutical Society. (2013). Medicines Optimisation: Helping patients to make the most of medicines. Retrieved from **https://www.rpharms.com/Portals/0/RPS%20document%20library/Open%20access/Policy/helping-patients-make-the-most-of-their-medicines.pdf**

# Gallbladder tuberculosis mimicking carcinoma: A case report of a rare entity

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## INTRODUCTION

Gallbladder TB (GBTB) is a rare disease with a non-specific presentation, simulating cholecystitis and gallbladder malignancies. We describe a rare case of infiltrative GBTB with biliary strictures in a young female who was initially diagnosed with metastatic gallbladder carcinoma.

## CASE PRESENTATION

A 33-year-old female presented with recurrent episodes of obstructive jaundice, significant weight loss, fatigue, and oligomenorrhoea. Physical examination revealed icterus and cervical lymphadenopathy. Routine laboratory investigations showed disproportionately raised alkaline phosphatase (508 IU/mL). The viral and autoimmune hepatitis panels, anti-mitochondrial and antinuclear antibody profiles, and human immunodeficiency virus (HIV) serology were all negative. Serum CA 19-9 and Carcinoembryonic Antigen were within normal limits. A triphasic contrast-enhanced computed tomography scan of the abdomen (**Figure 1A, 1B**) showed a distended gallbladder with thick walls containing calculus in the lumen and a dilated common bile duct (CBD) with distal abrupt tapering indicative of distal CBD stricture. A magnetic resonance cholangiopancreatography showed (**Figure 1C, 1D**) a mass-like irregular GB wall thickening with infiltration of the adjacent liver parenchyma with bilobar moderate intra-hepatic biliary dilatation, splenomegaly and dilated CBD with multiple intraluminal filling defects indicative of choledocholithiasis. These imaging studies suggested features of locally advanced gallbladder carcinoma with proximal and distal common bile duct strictures. An ultrasound-guided fine needle aspiration biopsy of the GB mass was attempted. However, a biopsy of the tissue surrounding the gallbladder mass confirmed necrotizing granulomatous inflammation (**Figure 2**) with similar findings from fine-needle aspiration of the cervical lymph node.

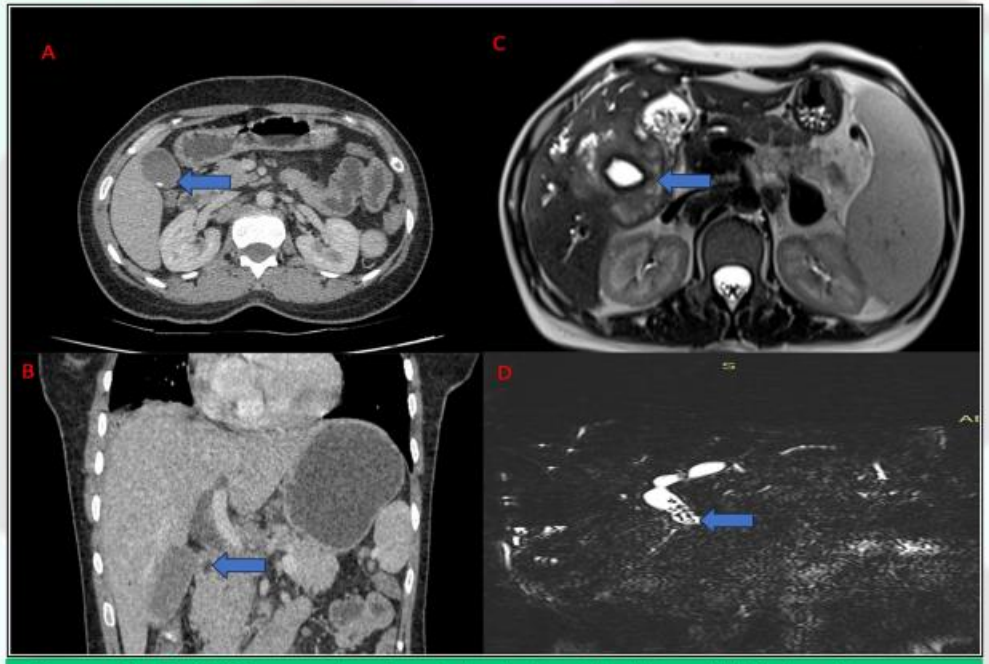


**Figure 1A,B:** CT image showing distended gallbladder with thick walls containing calculus (blue arrow) and a dilated common bile duct with distal abrupt tapering. **Figure 1C, 1D**: MRCP showing irregular GB wall thickening with infiltration of the adjacent liver parenchyma with bilobar intra-hepatic biliary dilatation, and dilated CBD with multiple intraluminal filling defects (blue arrow).

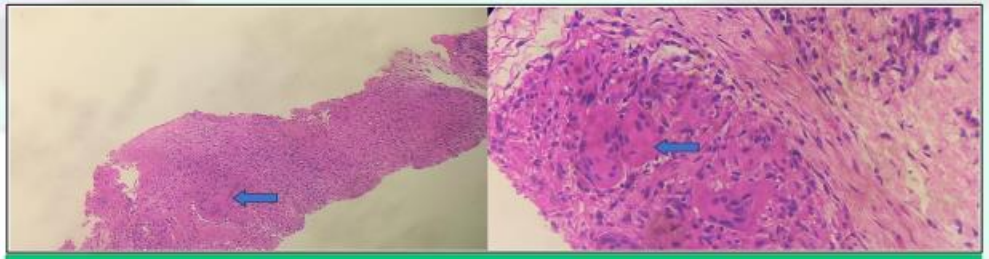

**Figure 2:** 100X and 400X HPE images of gallbladder biopsy showing multiple areas of epithelioid granuloma (blue arrow) with Langhans type of giant cell and focal areas of caseous necrosis.

## CASE PRESENTATION

Along with the histopathological findings, radiological evidence of pulmonary tuberculosis confirmed the diagnosis of infiltrative GBTB. The patient was successfully managed with anti-tubercular drugs along with biliary decompression.

## DISCUSSION

The rarity of GBTB is attributed to the high alkalinity of bile and bile acids, which afford protection against tubercle bacilli. Patients commonly present with abdominal pain, fever, abdominal lump, anorexia, and weight loss. Biliary strictures, though rare, have been described in GBTB and simulate cholangiocarcinoma. Due to the non-specific findings of pre-operative laboratory and radiological investigations, most patients are taken up for surgery and diagnosed with TB on post-operative histological analysis.

## CONCLUSION

Gallbladder TB is a rare disease that poses a diagnostic challenge because it lacks any pathognomonic features. A tissue diagnosis must be carried out before confirming gallbladder and biliary tract malignancies. Physicians in TB-endemic regions should possess a high index of suspicion for diagnosing GBTB.

## REFERENCES

1. Abu-Zidan F, Zayat I. Gallbladder tuberculosis (case report and review of the literature). *Hepatogastroenterol*. 1999;46:2804–6.
2. Ladumor H, Al-Mohannadi S, Ameerudeen FS, *et al*. TB or not TB: A comprehensive review of imaging manifestations of abdominal tuberculosis and its mimics. *Clin Imaging*. 2021 Aug;76:130-143.

# Correlation Between High-Resolution Computed Tomography of Thorax Findings and Spirometric Indices in Patients with Rheumatoid Arthritis

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## INTRODUCTION

Rheumatoid arthritis (RA) is a chronic autoimmune disease primarily affecting joints but also leading to significant extra-articular manifestations, particularly in the lungs. Pulmonary involvement in RA, especially interstitial lung disease (ILD), contributes substantially to morbidity and mortality. This study aims to evaluate the prevalence and pattern of lung involvement in RA patients and correlate these findings with spirometric indices.

## METHODS

This cross-sectional study was conducted at IPGMER Hospital, Kolkata, between February 2020 and July 2021. A total of 50 RA patients aged 18-55 years, diagnosed according to ACR-EULAR criteria, were enrolled. All participants underwent spirometry to measure FEV1, FVC, and FEV1/FVC ratios. Additionally, high-resolution computed tomography (HRCT) of the thorax was performed to identify patterns of lung involvement, including ground glass opacity, honeycombing, interstitial thickening, and fibrosis. Statistical analyses, including Chi-square tests, Fisher's exact test, and binary logistic regression, were used to explore associations between disease duration, spirometric indices, and HRCT findings.

## RESULTS

30 (60%) patients had lung involvement, with ground-glass opacities present in 16 (32%) and interstitial thickening in 14 (28%) patients (**Table 1**). ILD was detected in 13 (26%) patients, with usual interstitial pneumonia (UIP) being the predominant pattern at 69.2% (n=9), followed by nonspecific interstitial pneumonia at 30.8% (n=4). A significant correlation was found between longer disease duration (>5 years) and the presence of abnormal spirometric patterns (OR = 16.0, 95% CI: 3.527-72.583, p = 0.000326; 63.2%, n = 12) as well as abnormal HRCT findings (OR = 6.476, 95% CI: 1.56326.836, p = 0.01; 84.2%, n = 16).

| Pattern of lung involvement in HRCT | Number (%) | RA ILD in HRCT |
|---|---|---|
| Ground-glass opacity | 16 (32%) | 8 |
| Honeycombing | 8 (16%) | 8 |
| Interstitial thickening | 14 (28%) | 12 |
| Fibrosis | 9 (18%) | 7 |
| Lung nodule | 9 (18%) | 5 |
| Air trapping | 11 (22%) | 1 |
| Bronchiectasis | 12 (24%) | 9 |
| Bronchial wall thickening | 3 (6%) | 3 |
| Lung cyst | 5 (10%) | 4 |
| Pleural thickening | 12 (24%) | 8 |
| Pleural effusion | 2 (4%) | 1 |
| Pulmonary artery hypertension | 2 (4%) | 2 |

**Table 1:** Patterns of lung involvement detected by HRCT thorax

## RESULTS

Furthermore, patients with abnormal spirometry had significantly higher odds of showing abnormal HRCT findings (OR = 35.0, 95% CI: 7.629-160.719, p = 0.000084).

## DISCUSSION

The study highlights the high prevalence of pulmonary involvement in RA patients and underscores the critical role of HRCT and spirometry in early detection. The significant association between disease duration and lung involvement suggests a progressive nature of RA-related pulmonary complications, particularly ILD. UIP's predominance among ILD patterns indicates a poorer prognosis, necessitating early and targeted interventions.

## CONCLUSION

Pulmonary involvement in RA is common and often correlated with disease duration. Routine pulmonary assessment, including spirometry and HRCT, should be integrated into the management of RA patients, particularly those with a longer disease course, to facilitate early detection and improve outcomes. Further longitudinal studies are recommended to better understand the progression of ILD in RA and its impact on patient prognosis.

## REFERENCES

1. Chopra A, *et al*. Prevalence of Rheumatoid Arthritis in India. *Int J Rheum Dis*. 2020;23(5):571-579.
2. Solomon JJ, *et al*. Rheumatoid Arthritis-Associated Interstitial Lung Disease. *Clin Chest Med*. 2019;40(3):557-574.
3. Shaw M, *et al*. Pulmonary Complications of Rheumatoid Arthritis. *Chest*. 2015;148(5):1275-1287.

# Financial Barriers to participation in International Gastroenterology Conferences: A Cross-Sectional Analysis of Registration Fees

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3. College of Medicine and Sagore Dutta Hospital, Kolkata, India

## INTRODUCTION

International gastroenterology conferences serve as vital platforms for networking, knowledge exchange, and professional development. However, participation from low- and middle-income countries (LMICs), home to over 6.59 billion people, is often limited due to financial barriers such as high registration fees, currency depreciation, and low purchasing power. Despite the rise of virtual conferences during the COVID-19 pandemic, in-person interactions vault over any other mode of communication. This study aims to analyse the registration fees for international gastroenterology conferences to understand the financial challenges faced by attendees, particularly from LMICs, and suggest improvements for equitable access.

## METHODS

This was a cross-sectional, retrospective study. International gastroenterology conferences that have occurred or are slated to occur in 2024 were selected; 2023 data were taken for biennial conferences slated to occur in 2025. We collected registration fee data from the official conference websites and stratified it based on the host country, career stage (student, trainee/resident, or staff), society membership status, the option for virtual participation, and availability of discounted fees for LMIC participants. Only early bird registration fees were considered to avoid complications. Fees were converted to their United States dollar (USD) equivalent using historical exchange rates obtained from the International Monetary Fund's website for January 2, 2024. All data were captured and analysed on Google Sheets. Registration fees were assumed to be non normally distributed and presented as medians and interquartile ranges (IQR).

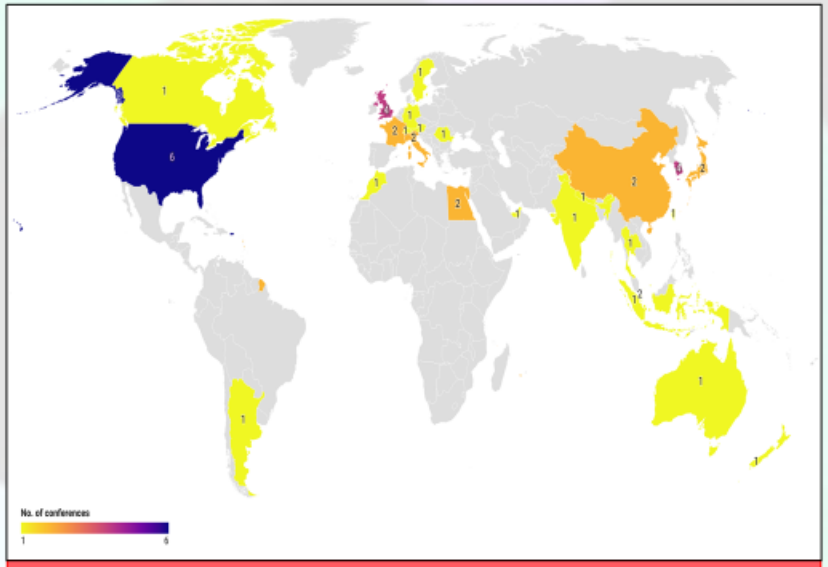


**Figure 1:** Countries hosting international gastroenterology conferences 2023-2024

| Category | Range | Median | IQR |
|---|---|---|---|
| Student - member | 0-310.19 | 87.65 | 51.25-178.17 |
| Student - non-member | 50-620.39 | 220.00 | 120.52-350.00 |
| Trainee - member | 0-394.41 | 150.00 | 75.09-250.00 |
| Trainee - non-member | 50-620.39 | 368.28 | 171.25-414.55 |
| Staff - member | 0-1000 | 336.84 | 201.58-487.50 |
| Staff - non-member | 75.03-1125 | 600.39 | 394.63-733.52 |

**Table 1:** Summary of conference fees (in USD) by attendee category

## RESULTS

We included 42 international gastroenterology conferences across 25 countries, with the United States hosting the most (six conferences) and only five hosted by LMICs (Egypt, Morocco, Nepal, and India) **(Figure 1)**. A summary of registration fees by attendee category is provided in **Table 1**. Only 8 (19%) conferences offered concessions for LMIC participants, out of which 3 (37.5%) provided the same discounted rate regardless of membership status, 3 (37.5%) had varying discounts based on membership status, 1 (12.5%) provided full waivers only to member participants, and 1 (12.5%) provided concessions only to non-member participants. Additionally, 12 (28.6%) conferences included a virtual component, with 7 (58.3%) offering cheaper virtual-only packages. Among these, 3 (42.8%) conferences offered discounts for both trainees and LMIC participants, and 1 (14.2%) provided discounts only for the latter.

## CONCLUSION

Conference registration costs were substantial and only a minority of conferences offered concessions for LMIC participants, who remain underrepresented at global conferences. The high costs of registration, travel, and accommodation, complex visa processes, and limited speaking opportunities represent major barriers to active participation. To address these inequities, global societies should provide financial incentives such as scholarships, tiered pricing based on career stage and country, support for visa-related issues, and continue the hybrid model of conferences to enhance accessibility and representation.

## REFERENCES

1. Arend ME, Bruijns SR. Disparity in conference registration cost for delegates from low- and middle-income backgrounds. *Afr J Emerg Med*. 2019;9(3):156-161.
2. Velin L, Lartigue JW, Johnson SA, *et al*. Conference equity in global health: a systematic review of factors impacting LMIC representation at global health conferences. *BMJ Glob Health*. 2021;6(1):e003455.

# Solid Pseudopapillary Neoplasm causing Obstructive Jaundice: Case report of a rare entity

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## INTRODUCTION

Solid pseudopapillary neoplasm (SPN) is an extremely rare, low-grade malignant tumour affecting the pancreas, comprising less than 3% of all pancreatic cancers. We describe a case of SPN in a young female whose clinical and radiological features were suggestive of pancreatic adenocarcinoma, but was diagnosed as SPN on post-operative histological analysis of the resected specimen.

## CASE PRESENTATION

A 32-year-old female with a history of laparoscopic cholecystectomy presented with abdominal pain for 2 days. Physical examination revealed icterus, mild tachycardia, fever, and a tender, firm, globular epigastric lump which was 3×3 cm in size with ill-defined margins. Laboratory investigations showed direct hyperbilirubinaemia, disproportionately raised alkaline phosphatase, and elevated levels of liver enzymes, suggestive of cholestatic jaundice. Computed tomography (CT) scan of the abdomen (**Figure 1**) showed an ill-defined, solid mass in the pancreatic head region causing obstructive pancreatopathy and biliopathy, along with evidence of portal venous thrombosis. Coupled with her clinical features, this raised suspicions of a pancreatic neoplasm, possibly pancreatic adenocarcinoma. Endoscopic ultrasound (EUS) showed an irregular-shaped hypoechoic lesion measuring 25×24 mm in the head of pancreas and confirmed the CT findings. EUS-guided fine-needle aspiration cytology of the lesion revealed tumour cells arranged in sheets, clustered with delicate papillary fronds, suggestive of SPN. The patient was managed by ERCP biliary decompression and underwent Whipple procedure for complete tumour resection. Histopathological analysis of the resected specimen (**Figure 2**) showed cells arranged in a pseudopapillary pattern around basement membrane-like material, thus confirming the diagnosis of SPN. The postoperative period was uneventful and no further treatments were administered.

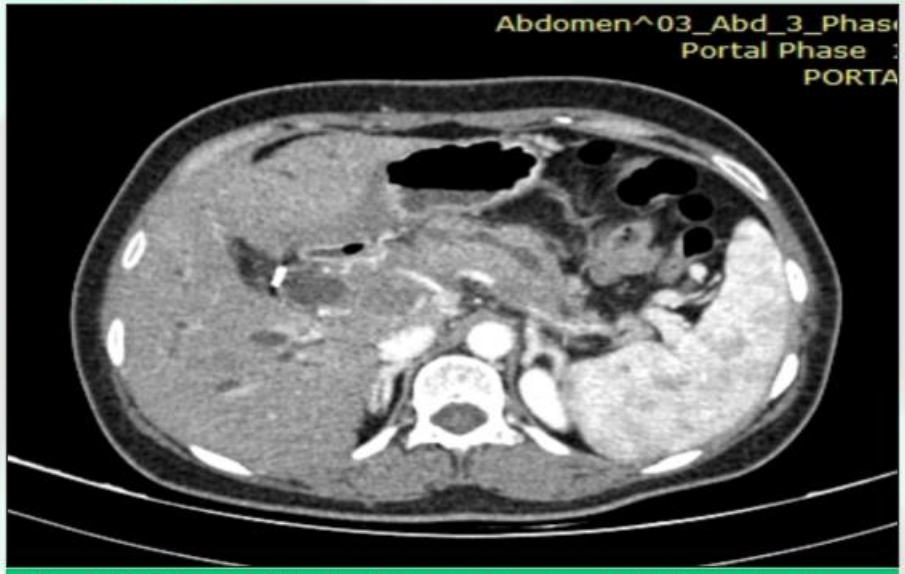


**Figure 1:** CT scan at the level of pancreas showing ill-defined isodense, solid-appearing mass in pancreatic head region in portal phase, with portal venous thrombosis extending towards the main portal vein.

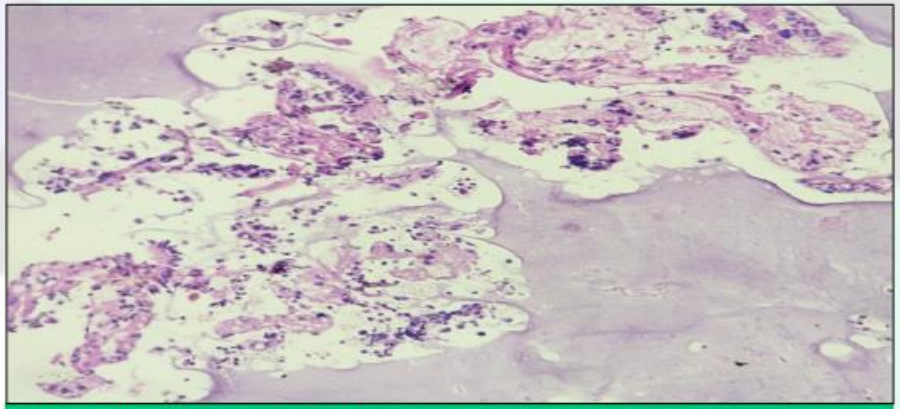

**Figure 2:** HPE image of pancreatic tumour biopsy showing pseudopapillary pattern of cellular arrangement, suggestive of SPN

## DISCUSSION

SPN is an extremely rare tumour of pancreas that is typically seen in the pancreatic head or tail, and they frequently affect young females under 35 years of age. They are mostly asymptomatic or have non-specific symptoms, with patients complaining of abdominal pain, nausea, and vomiting. Our patient presented with jaundice, which is a rare finding even for tumours in the pancreatic head. Her findings indicated pancreatic adenocarcinoma, since it commonly presents with painless jaundice and abdominal pain. Due to its indolent nature, SPN is often diagnosed incidentally on imaging studies. Diagnostic confirmation is achieved by tissue biopsy. The presence of pseudopapillary patterns, which result from tumour cells separating from blood vessels, is a characteristic feature of SPN. Contrary to pancreatic adenocarcinoma, SPN has an excellent prognosis. The definitive treatment for SPN is surgery; complete tumour resection has a 5-year survival rate of 96.7%.

## CONCLUSION

SPN poses a diagnostic challenge due to its non-specific presentation. Clinicians should consider SPN as a differential in women presenting with abdominal mass and vague abdominal complaints. Radical surgical resection is the mainstay of treatment for SPN.

## REFERENCES

1. Omiyale AO. Solid pseudopapillary neoplasm of the pancreas. *World J Hepatol*. 2021;13(8):896-903.
2. La Rosa S, Bongiovanni M. Pancreatic Solid Pseudopapillary Neoplasm: Key Pathologic and Genetic Features. *Arch Pathol Lab Med*. 2020;144(7):829-837.
3. Yang F, Fu DL, Jin C, *et al*. Clinical experiences of solid pseudopapillary tumors of the pancreas in China. *J Gastroenterol Hepatol*. 2008;23(12):1847-1851.

# Investigating the success and impact of the Sheffield Bardhan Fellowship in Gastroenterology: A longitudinal analysis of 20 years' experience

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## INTRODUCTION

Research plays a critical role in advancing medical knowledge and improving patient outcomes. However, recent studies indicate a decline in trainee participation in research activities. The Bardhan Fellowship was established to address this issue by encouraging and motivating Gastroenterology trainees to engage in research. This study aims to evaluate the outcomes of abstracts presented at an annual gastroenterology conference.

## METHODS

Data collection was performed through three primary methods. A questionnaire (**Figure 1**) was distributed to gather feedback and ratings from participants. The final programs of the meetings were reviewed to identify the abstracts and their respective presenters, including those ranked in the top three. A cross-referencing approach was employed to track subsequent publications of presented abstracts using Google Scholar and MEDLINE databases.

## RESULTS

An analysis of 249 abstracts presented revealed that 35% (88) were published as full papers in peer-reviewed journals, while 65% (161) remained unpublished. Of the 67 top-three ranked abstracts, 57% (38) achieved full publication, significantly more than the 27% publication rate of unranked abstracts ($p<0.0001$). Top-ranked abstracts contributed 43% of the total publications, while unranked abstracts accounted for 57%. The median time to publication for ranked abstracts was 12.5 months (IQR: 6.25–21.25 months), compared to 15 months (IQR: 6–27 months) for unranked abstracts. The overall median lag time was 13 months (IQR: 6-25 months). Longer lag times were associated with lower journal impact factors. Ranked abstracts were published in journals with a median impact factor of 3.769 (IQR: 2.491–7.527).

**Bardhan Fellowship 2021**
Please take 1 minute to fill out this form – it may shape the future meetings

Overall meeting rating:

Very Poor Poor Average Good Excellent

| | Strongly Agree | Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|
| The meeting is relevant to my continuing professional development | | | | |
| The meeting is educationally beneficial | | | | |
| The meeting has given me enthusiasm towards participating in research | | | | |
| The meeting contained new ideas and material | | | | |
| Adequate time was given for discussion | | | | |
| The meeting met my expectations | | | | |
| The facilities, catering arrangements met my requirements | | | | |
| The AV facilities were of a high quality | | | | |

What was your opinion of the two sessions?

**Live Endoscopy**

Very Poor Poor Average Good Very Good

**SPR Prize**

Very Poor Poor Average Good Very Good

How would you rank this meeting by comparison to other Yorkshire regional meetings that you attend? (circle as appropriate)

Very Poor Poor Average Good Very Good

Are there any other suggestions or comments you would like to make? (free text)

*Thanks For Participating.*

**Figure 1:** Questionnaire to gather feedback about the Bardhan Fellowship

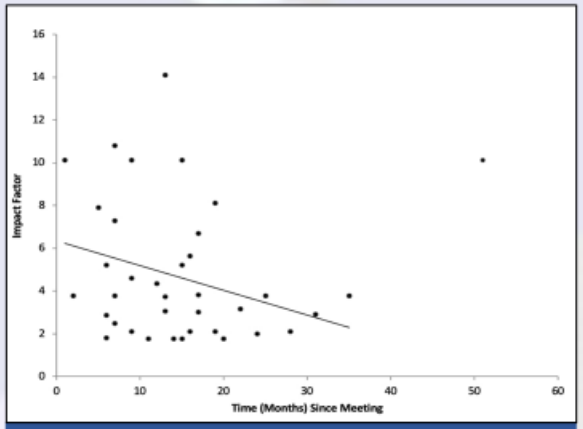



**Figure 2:** Scatter plot of journal impact factor and time since meeting

## RESULTS

Unranked abstracts were published in journals with a median impact factor of 2.884 (IQR: 1.95–4.628). There was a weak negative correlation between the time since the meeting and journal impact factor (**Figure 2**), and a positive correlation between the number of published abstracts and time since the meeting. On average, four abstracts (IQR: 3–5) were published per year following the meeting. Questionnaire data from 161 attendees over nine years indicated a positive evaluation of the meeting. In 2020, 90% of attendees rated the event as excellent, with the remaining 10% rating it as good. The meeting was praised as an "excellent platform" for research presentation and feedback. Attendees also appreciated live endoscopy sessions and the time for discussions. Feedback from 2008 to 2021 showed growing enthusiasm for research, with 86% of attendees in 2021 expressing motivation to participate in research, up from 77% in 2008. Similarly, educational benefit ratings increased from 81% in 2009 to 95% in 2020, underscoring the meeting's growing relevance.

## CONCLUSION

This study found that 35% of Bardhan Fellowship abstracts achieved publication, with top-ranked abstracts significantly more likely to be published in higher-impact journals and with shorter lag times. This is comparable to similar studies. The success of this conference model suggests it could be effectively implemented in other regions to promote research dissemination among trainees.

## REFERENCES

1. Hopper AD, Atkinson RJ, Razak A, *et al*. Is medical research within the UK in decline? A study of publication rates from the British Society of Gastroenterology from 1994 to 2002. *Clin Med (Lond)*. 2009;9(1):22-5.
2. Kurien M, Hopper AD, Sabbagh R, *et al*. PTU-009 From Abstract to Full Publication: A 15-Year Review of British Socety of Gastroentorology (BSG) Conference outcomes. *Gut*. 2013;62:A44-A45.
3. Scherer RW, Langenberg P, von Elm E. Full publication of results initially presented in abstracts. *Cochrane Database Syst Rev*. 2007;(2):MR000005.

# ‘Train to Drain’: a quality improvement project leading to a national educational resource to improve the confidence of doctors and nurses in managing patients with chest drains

B. Iqbal[1,2], D. Addala[1,2], S. Guo[2], A. Elsheikh,[1,2], A. Sundaralingam[1], R. Hallifax[1,2], N. Rahman[1,2], J. Wrightson[2]
1. Oxford Respiratory Trials Unit 2.Oxford Pleural Unit, Oxford University Hospital NHS Foundation Trust

## Introduction

National Patient Safety Alert

**Deterioration due to rapid offload of pleural effusion fluid from chest drains**

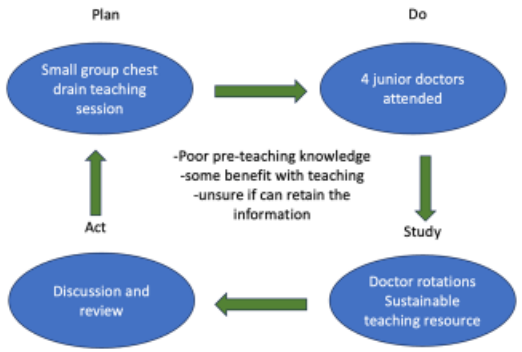
- Chest drains are common
- **Limited training resources available for medical staff!**

## Methods

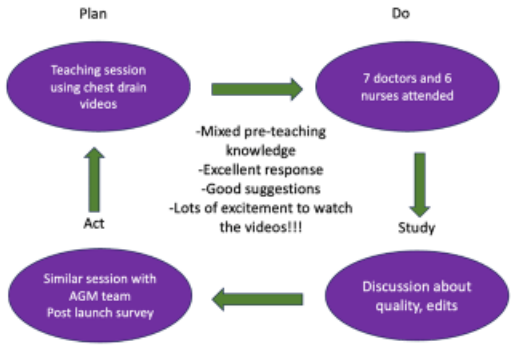
We conducted a QIP to improve the confidence of doctors and nurses to manage chest drains

**Driver Diagram for an intervention plan to hold regular teaching sessions**

### First PDSA cycle



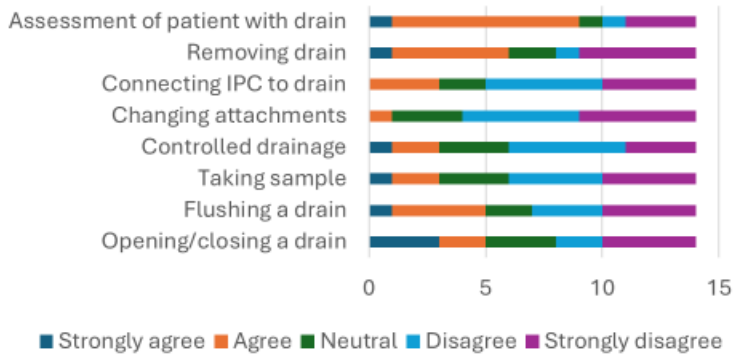

### Second PDSA cycle



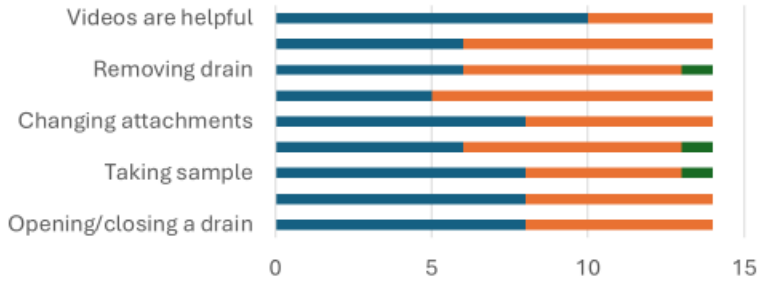

**8 videos produced to guide chest drain management**

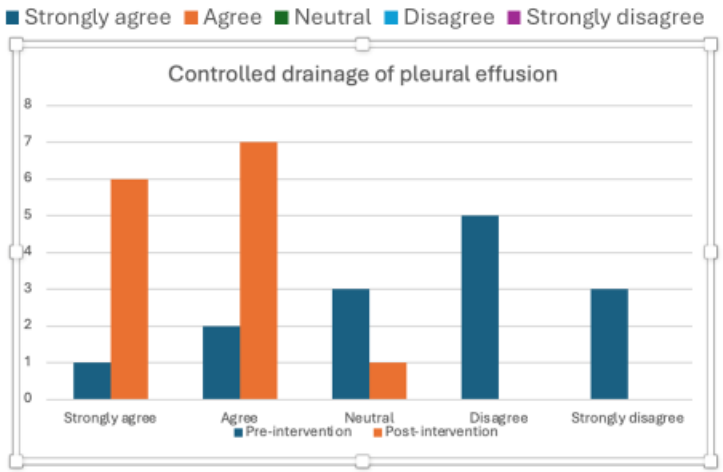
## Results

### Pre-teaching




### Post teaching using videos




## Conclusion

This QIP highlights the positive impact of targeted educational interventions to improve patient safety by using sustainable, cost-effective resources.

# Natural Language Processing Identification And Interpretation Of Free Text Requests In The Hospital Discharge Summary

Benjamin D James[1,2], Matthew Watson[3], Noura Al Moubayed[3], Darren Green[1,2]

[1]Salford Care Organisation, part of the Northern Care Alliance NHS Foundation Trust, UK; [2]University of Manchester, UK; [3]Durham University, UK

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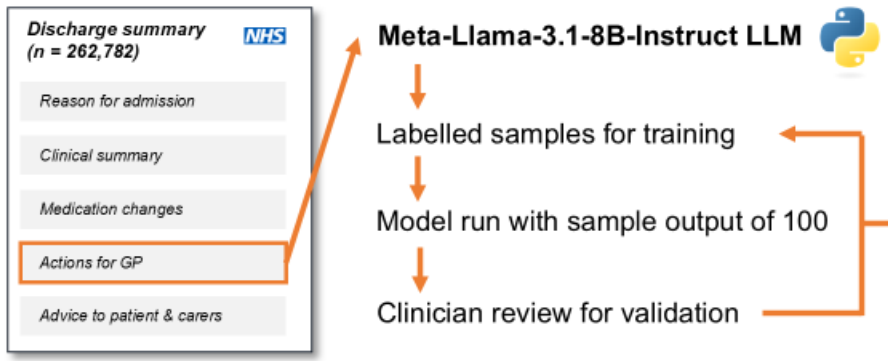
References: Available by hyperlinks

**Aim:** To explore feasibility of NLP analysis of discharge summary text by creating a model to identify and interpret written requests for blood tests




**Examples of model output:**

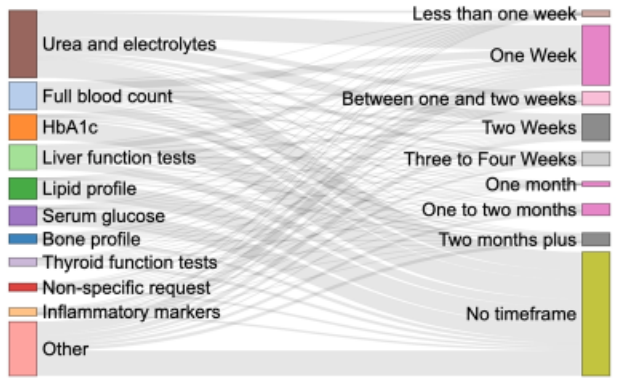
**Actions for GP**
Please kindly repeat the patients LFTs in two weeks time to ensure continuing resolution of these

**Output:** [REQUESTS BLOODS]
Timeframe: 2 weeks
['LFTs']

**Actions for**
GP follow 1 week to monitor risk of delirium.

**Output:**
[DOES NOT REQUEST BLOODS]

**Model-identified tests and suggested timeframe**




## Background

- Analysis of medical notes by clinicians for data collection in quality improvement and research projects is labour-intensive.
- Clinician time collecting data limits capacity to develop and implement interventions for change
- This is especially so for hospital discharge summaries; a pivotal juncture of care, frequently highlighted as a point of safety breakdown.[1]
- Natural Language Processing (NLP) methods are rapidly developing, allowing comprehension of large volumes of text at scale and speed.
- We hypothesised that NLP could be applied to electronic health records to allow better use of text data for service monitoring and research.

## Methods

- Data were acquired for an AKI QIP at Salford Royal Hospital, January 2015 to May 2023; this included the free text of the discharge summary "*actions for GP*".
- Prior to analysis, anonymisation of free text was ensured using the DeID-BERT-I2B2 model.[2]
- We used in-context learning with the Meta-Llama-3.1-8B-Instruct large language model to identify requests for primary care organisation of blood tests.[3]
- We designed a prompt incorporating 20 labelled samples (10 requesting bloods) and asked the model to identify if the next note also requested a test. This was developed to identify the tests being requested, and suggested timeframe
- The model was validated by clinician review of text and model outcome and iterated to optimise performance.

## Results

- 262,782 hospital episodes with a completed discharge summary were included. Character length ranged from 1 to 1022 (median: 61, interquartile range: 148).
- Four iterations of validation with 100 results were performed. The final model identified 49,218 (18.7%) summaries with a request to perform blood tests.
- The most requested tests were U+E, FBC, and HbA1c. 8.3% of requests simply requested "bloods" without detailing tests. 64.4% of requests were identified as including a suggested time-frame, the commonest was "1 week".
- Clinician validation suggested the sensitivity and specificity for identifying blood test requests were 98% and 98%, respectively. The correct time-frame was identified in 84% of requests, and the correct test in 98%.

**Conclusion:** We have demonstrated that NLP can be applied to free text in discharge summaries to facilitate fast, accurate identification of requests. This has implications for use of text at scale in clinical research, and quality improvement.

# IMPROVING DOCUMENTATION OF PATIENT TARGET SATURATIONS ON DISCHARGE LETTERS - A QUALITY IMPROVEMENT PROJECT

DR C REID, DR T CONWAY, DR N SHEARER, DR J FERRICK, DR M ZAID, DR M PORTER, DR D O'FLYNN

CREID46@QUB.AC.UK

## INTRODUCTION

Target oxygen saturations for patients with respiratory illness is essential knowledge for safe patient management. Respiratory patients experience frequent re-admissions, with one quarter of patients with chronic obstructive pulmonary disease (COPD) exacerbations being readmitted to hospital at least once within 30 days of discharge [1]. Having target saturations available from previous admissions in an easily accessible place, from the point of admission reduces the risk of inappropriate over oxygenation, improving **patient safety**, recudes the need for routine artieral blood gases (ABGs), improving **patient satisfaction** and provides clarity for admitting doctors, improving **doctor satisfaction.** Theoretically the reduction in routine ABGs should provide a **cost reduction**. BTS recommend targeting oxygen saturations at 88-92% for patients at risk of type two respiratory failure pending the availability of blood gases [2]. Our project aimed to make it easier to access information where these blood gases had been previously performed and acted upon.

## AIM

**The aim of this QI project was for 70% of the discharge letters from the respiratory wards to have target oxygen saturations documented by April 2024.**

## METHODOLOGY

We implemented a 5 cycle QI project over a 16-week period, with data collection following each intervention in the form of a weekly audit of all discharge letters from the respiratory ward over a 7 day period and calculating the percentage which included reference to target oxygen saturations.
Change ideas which were implemented:

1. Email to all staff regarding the importance of documenting target oxygen saturations.
2. Formal teaching session to all respiratory doctors.
3. Posters placed in doctors office.
4. Re formatting of the discharge letter template on PatientCentre.
5. Further teaching session regarding new proforma and post changeover.

We adapted our change ideas in real time, as we noticed following trainee doctor changeover there was a noticible dip in results, therefore a further teaching session was scheduled.

## KEY FINDINGS

We measured an improvement in the documentation rate from **13.5% to 78%** within a 16-week period.
Baseline data collection showed a documentation rate of 15% and 11% during the 2 weeks prior to our project start. Verbal feedback from doctors was positive, referencing how it made creating a plan on clerking a respiratory patient clearer and easier.

DISCHARGE LETTERS WITH TARGET OXYGEN SATURATIONS RECORDED AFTER A RESPIRATORY ADMISSION


## ANALYSIS

We found that the intervention which demonstrated the most change was the creation of a new discharge letter template which included a box to enter target saturations. We noticed a clear dip in results with the junior doctor changeover, therefore we scheduled a second teaching session as another intervention.

## CONCLUSION

We achieved our aim of 70% documentation rate. The change we made is sustained, through a permanent change in the discharge proforma along with including reference in the junior doctor inductions. Our next steps would be to measure any change with the implementation of a new computer system for paperless notes.

REFERENCES: 1-J. ALGAHTANI, Y. ALDABAYAN, A. ALDHAHIR, A RAJESH, S. NADAL, J HURST. PREDICTIONS OF 30 DAY AND 90-DAY COPD EXACERBATION READMISSION: A PROSPECTIVE COHORT STUDY. INTERNATIONAL JOURNAL OF COPD 2021; (34675502):
2-O'DRISCOLL BR, HOWARD LS, EARIS J, MAK V. BTS GUIDELINE FOR OXYGEN USE IN ADULTS IN HEALTHCARE AND EMERGENCY SETTINGS. THORAX. 2017 JUN 1;72(SUPPL 1):II1-90.

# Retrospective analysis to determine potential predictors of talc pleurodesis success in patients with malignant pleural effusion

Guy's and St Thomas' NHS Foundation Trust

Catherine Roberts, Junyi Zhang, Owais Kadwani

## 1 Introduction

Malignant pleural effusion affects up to 15% of patients with cancer[1] with an average prognosis of 3-12 months.[2] The treatment options include the use of chemical pleurodesis, with a reported 81.4% success rate as per the TIME1 trial.[3] Analysis of our local cohort was performed to determine if there were any specific factors to predict success.

## 2 Methods

Data were gathered from January 2020 to December 2023. The inclusion criteria were patients with a malignant pleural effusion given a talc slurry via chest drain or indwelling pleural catheter (IPC). Data were collected for several variables including:

- primary tumour type
- performance status (PS)
- procedure location (elective: inpatient or outpatient or acute i.e. performed opportunistically during a hospital admission)
- post-procedure drain care (including use of suction & any issues e.g. difficulty in aspiration)

Procedure failure was defined as evidence on imaging (USS/CT) of re-accumulation before 12 months post-pleurodesis or unplanned removal of the IPC/chest drain. Statistical analyses were performed using unpaired t-tests and Pearson correlation.

## 3 Results

- 24 patients (17 female, 7 male) aged 38-82 years were treated during the three-year period, median PS = 1.
- The most common primary tumours were ovarian (n=8) and lung (n=7).
- Pleurodesis was performed mainly in the inpatient setting (see Figure 1).
- Across the whole cohort, the overall success rate was 45.4% (n=10) with a failure rate of 54.5% (n=12) and no follow up data for 2 patients.
- For outpatients given pleurodesis through IPC (n=5) there was an 80% success rate. The location of treatment was statistically significant to predict success (p=0.003).
- Of the failed inpatient procedures, 36.3% had associated documentation of a post-procedure issue e.g. difficulty in aspiration or blockage resulting in drain removal.

### Key points

- The success rate of pleurodesis varied depending on setting (inpatient 35.3% vs outpatient 80%) and device (IPC 85.7% vs chest drain 26.7%)
- There was no correlation between pleurodesis success and patient age (p=0.74), performance status (p=0.53) or pre-procedure CRP (p=0.1).

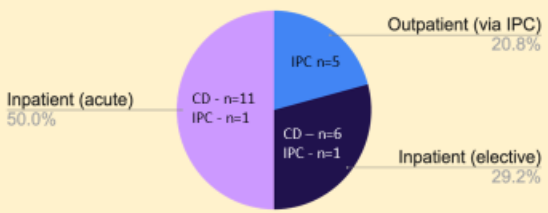



*Figure 1. Pie chart illustrating the location of pleurodesis: performed as an outpatient via IPC or as an inpatient, (elective or acute admission) via chest drain or IPC.*

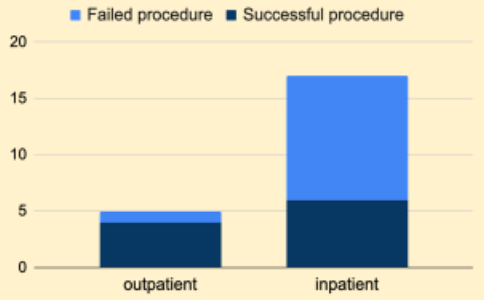



*Figure 2. Bar chart showing procedure success in the inpatient and outpatient setting.*

## 4 Discussion and conclusion

The reported success in those treated as an outpatient and given pleurodesis via IPC is promising, however difficult to generalise given the very small data set. The significant difference between the success rate of both devices (chest drain and IPC) contrasts with previous literature[4] and suggests the presence of confounding variables. For those treated as an inpatient there are likely to be important factors to consider, for example co-morbidities, operator differences and ward management of inpatient drains. Given the high rate of post-procedure drain issues (36.3%) this should be explored further and addressed to improve future practice. In summary, there is further work required to assess the impact of the inpatient versus outpatient setting for talc administration.

Finally, it would be pertinent to understand the patient experience between those treated as an inpatient versus those managed as an outpatient.

## References

1. Clive AO et al. Interventions for the management of malignant pleural effusions: a network meta-analysis. *Cochrane Database Syst Rev.* 2016;2016(5):CD010529.
2. Roberts ME, et al. Management of a malignant pleural effusion: British Thoracic Society pleural disease guideline 2010. *Thorax* 2010;65:ii32-ii40.
3. Rahman NM et al. Effect of Opioids vs NSAIDs and Larger vs Smaller Chest Tube Size on Pain Control and Pleurodesis Efficacy Among Patients With Malignant Pleural Effusion: The TIME1 Randomized Clinical Trial. *JAMA*. 2015;314(24).
4. Sivakumar P et al. The OPTIMUM randomised control trial. *European Respiratory Journal.* 2023; 2201215.

# International Medical Graduates: Onboarding and beyond

University Hospitals Sussex NHS Foundation Trust

Dr Catherine Miles (Chief Registrar), Dr Ai-lyn Yeo (Geriatric Consultant), Dr Lorraine Albon (Site DME SRH), Dr Stephen Kriese (Chief of Service)
Louise Took (Recruitment lead) Sam Vaughan (PGME Lead ) Samuel Elliott- Olechnowicz (International recruit lead) , Maxine Davis (HR Lead) Emanuela Guerinoni (HR)
Dr Lucinda Rickwood and Dr Santonu Bhattacharjee (IMG teaching fellows), Dr Uday Rana (IMG teacher)

## Background and Objectives

Problem statement: Worthing and St Richards had a growing number of International Medical Graduates (IMGs) starting in locally employed doctor posts. Many did not receive an Induction, had delays to IT set up and no supervisor allocated. There was also no defined pathway for those requiring shadowing.

With over half (52%) of new joiners to the GMC register in 2022 being IMGs, we recognised the need to appropriately support this group of doctors. Integrating and subsequently retaining these doctors was paramount.

We set out to evaluate our current onboarding processes, aiming to improve doctor satisfaction and compliance with national standards

## Current Condition

Data was collected via surveys, small group and Individual Interviews. Our current IMGs were pivotal in outlining issues. Also included in the individual interviews were HR leads, recruitment leads and supervising medical consultants.

Feedback from consultant supervisors via post graduate medical education (PGME) highlighted an increasing number of IMGs requiring additional support and supernumerary time.
The gap analysis in "Welcoming and valuing International Medical graduates" was also used to benchmark suitable interventions

PDSA 1 & 2 : Tested interventions on individual new doctors
PDSA 3: Pulled together all successful interventions, in the form of an Enhanced Induction and a Clinical Orientation Programme (COP)

## Enhanced Induction and Clinical Orientation Programme

*Figure 1*

**PDSA 3: July to September 2024 – 20 Doctors**

**Post interview**
- Streamlined HR
- Recruitment lead
- IMG Office

**1 month prior to start date**
- Welcoming communication
- Shadowing plan
- Whatsapp groups

9 doctors had prolonged shadowing (COP)

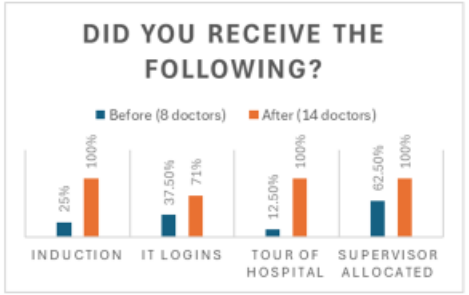
**1st day**
- IMG induction day
- Tour of hospital
- Workbook

**1st 4- 6 weeks**
- Complete shadowing
- Meet buddy
- Meet ES/CS

**First 3 months**
- Teaching and mentoring
- Simulation
- GMC workshop

## Results

*Graph 1*





August 2023 August 2024

*Figure 2*

| *Table 1- CoP* | **Before COP** | **After COP** |
|---|---|---|
| Mean shadowing time (all groups) | 6.7 weeks (Range 0-25 weeks) £14,472 | 5.4 weeks (Range 4-8 weeks) £11,664 |
| Mean shadowing time if prior NHS experience but < 1 year | 2 weeks (Range 0-4 weeks) £ 4,320 | 4 weeks (all given 4 weeks) £ 8,640 |
| Mean shadowing time If new to NHS | 15.25 weeks (Range 8-25 weeks) £32,940 | 6.6 weeks (Range 6-8 weeks) £14,256 |

## Discussion

There has been overwhelmingly positive feedback to this programme from our International Doctors.

- Would you recommend our hospital to another IMG? - 100% said yes (14 respondents)
- Overall rating of shadowing programme 9.4/10
- PGME identified 2 GP trainees to add into programme also (not included in data)
- Cost savings for division with reduction of shadowing timeframes for IMGs brand new to NHS.

| July to September 2024 shadowing | |
|---|---|
| Predicated cost of locums | £181,980 |
| Actual cost of locums | £105,840 |
| Fellow time x 2 (3 months) | £8,747 |
| Overall savings | £67,393 |

# Becoming the Medical Registrar
## Improving Confidence in Emergency Management Through Simulation

Dr Chris Marsden, Dr Janis Meek
Rotorua Hospital, New Zealand

## INTRODUCTION

Simulation has quickly emerged in medical education as a vital tool to develop competence and confidence in managing medical emergencies. It has been shown to not only drastically improve trainee confidence and capabilities, but also improve patient care and patient outcomes (1).

A low-fidelity simulation course was designed for this purpose, for medical registrars leading acute medical emergencies, in a small district hospital in north island New Zealand.

## METHODS

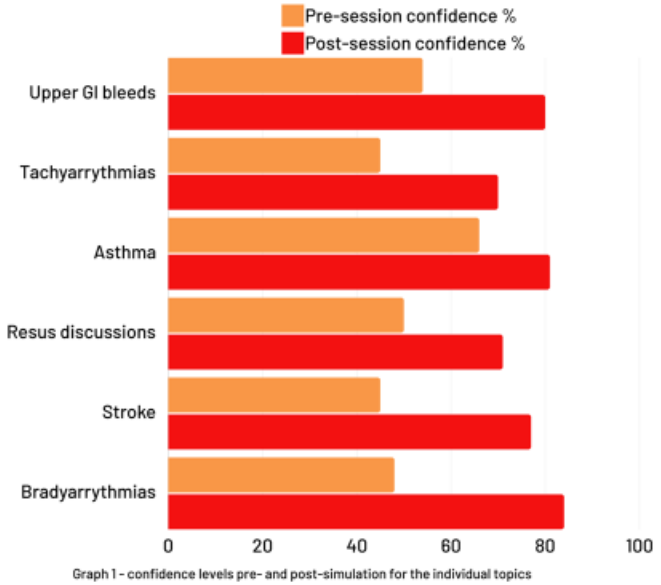
Pre-session survey
iResults utilised in simulation design

Notification of topic
Relevant pre-learning

6 x Six 90 minute sessions, one each month

SImulation lab
ICU consultant + nurse educator
Debrief
Presentation
Post-session survey

## RESULTS




Graph 1 - confidence levels pre- and post-simulation for the individual topics

Registrar chosen topics

Morning sessions (2)

Safe space to make mistakes

Collaboratively designed

6 month program..



## SUMMARY

- Morning teaching sessions allowed for a higher consistent attendence to registrar teaching
- Simulation has the potential to improve patient care.[3]
- Even with reasonably low-fidelity simulation, confidence levels can be drastically improved

## REFERENCES

1. Weile, J., Nebsbjerg, M.A., Ovesen, S.H. et al. Simulation-based team training in time-critical clinical presentations in emergency medicine and critical care: a review of the literature. Adv Simul 6, 31(2021).
2. Rimmer, A. (2014) 'Core medical training needs "urgent" reform to drive up quality, says RCP', BMJ (2014)
3. LaVelle BA, McLaughlin JJ. Simulation-Based Education Improves Patient Safety in Ambulatory Care. In: Henriksen K, Battles JB, Keyes MA, et al., editors. Advances in Patient Safety: New Directions and Alternative Approaches (Vol. 3: Performance and Tools). Rockville (MD): Agency for Healthcare Research and Quality (US); 2008.

# When little is too much. The case of digoxin toxicity

**Osagie, Christopher O.[1]; Aslam, Zainab[2]**

[1]Manchester University NHS Foundation Trust, [2]Tameside General Hospital

**Background:** It is not uncommon to assume that the risk of digoxin toxicity (DT) is low in patients on the lowest daily dose (62.5 µg). However, the medication has a narrow therapeutic index and multiple drug interactions.[1] DT accounts for about 3.3% of adverse drug events amongst those ≥85 years.[2]

## Case summary

- 85-year-old lady presented with a 3-day history of lethargy, nausea, recurrent vomiting and occasional white shadows in her field of vision
- Background CKD, metastatic breast cancer, reflux (on Esomeprazole) and heart failure on digoxin (62.5mcg/day), eplerenone, bisoprolol and furosemide.
- Bradycardic on examination
- ECG (Figure 1) showed AF with slow ventricular response, a shortened QTc (328 ms) and scooped ST segments.
- No floaters nor suggestions of retinal detachment, posterior vitreous detachment, vitreous haemorrhage or papilledema on ocular ultrasound
- Serum digoxin level 2.9 ug/L (0.5 – 1.0 µg/L), $K^+$ 4.2 mmol/L. Her renal function was stable with an eGFR of 54 ml/min/1.73 m2.
- Digoxin was stopped and symptoms gradually resolved.

## Discussion

- Presenting symptoms were consistent with DT, though not specific.
- Advanced age, CKD & medications (including diuretic & PPIs) can increase its risk of toxicity.[3]
- Shortened QTc and scooped ST segments are components of the typical "digitalis effect".[4]
- DT is a clinical diagnosis consisting of history of digoxin exposure with suggestive clinical features and/or ECG changes.[5]

**Conclusion:** As Digoxin is a commonly prescribed medication, we should have a high index of suspicion in any patient, with background risk factors and exposure to digoxin, presenting with clinical and electrocardiographic features consistent with DT irrespective of the daily digoxin dose as little is enough to cause DT.

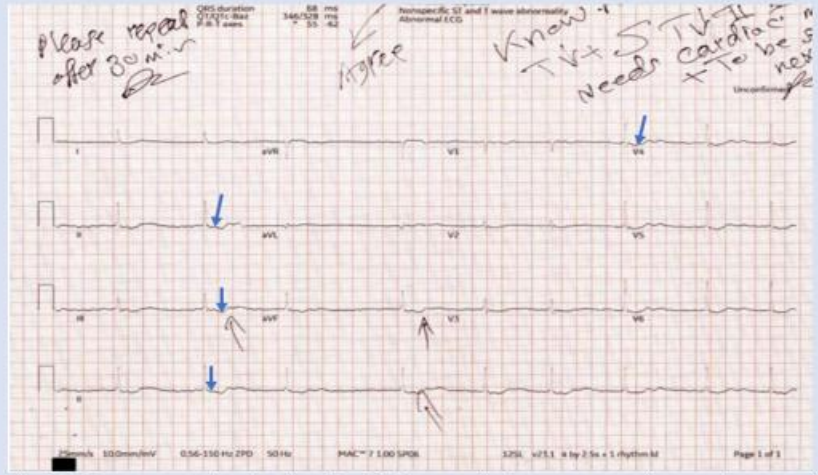


Fig. 1: ECG at presentation showing AF with slow ventricular response, a shortened corrected QTc of 330 ms and scooped ST segments (blue arrows).

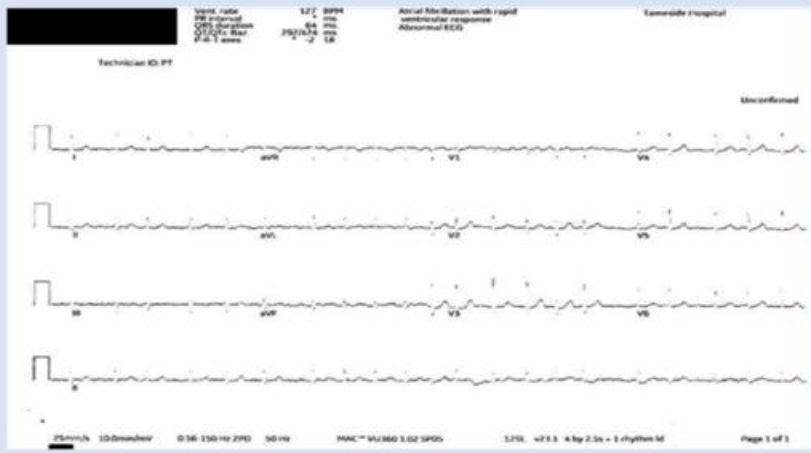


Fig. 2: ECG 2-months prior to commencing digoxin showing AF with fast ventricular response, normal QTc and ST segments


*Courtesy: EMNote.org*

## References

1. Lip GY, Metcalfe MJ, Dunn FG. Diagnosis and treatment of digoxin toxicity. Postgraduate medical journal. 1993 May;69(811):337.
2. See I, Shehab N, Kegler SR, Laskar SR, Budnitz DS. Emergency department visits and hospitalizations for digoxin toxicity: United States, 2005 to 2010. Circulation: Heart Failure. 2014 Jan;7(1):28-34.
3. Wang MT, Su CY, Chan AL, Lian PW, Leu HB, Hsu YJ. Risk of digoxin intoxication in heart failure patients exposed to digoxin–diuretic interactions: a population-based study. British journal of clinical pharmacology. 2 010 Aug;70(2):258-67.
4. Cheng TO. Digitalis administration: an underappreciated but common cause of short QT interval. Circulation. 2004 Mar 9;109(9):e152.
5. Levine M, O'Connor A. Digitalis (cardiac glycoside) poisoning. UpToDate. Waltham: UpToDate. 2012:1-1

# Irregular Management of an Irregularly Irregular Rhythm

**Osagie, Christopher O.[1]; Al-Sheikhli Jaffar[2]; Oboirien, Isa O[3].**

[1]Manchester University NHS Foundation Trust, [2]University Hospital Coventry and Warwickshire, [3]Sheffield Teaching Hospital

Royal College of Physicians

Navigating the path of clinical progress

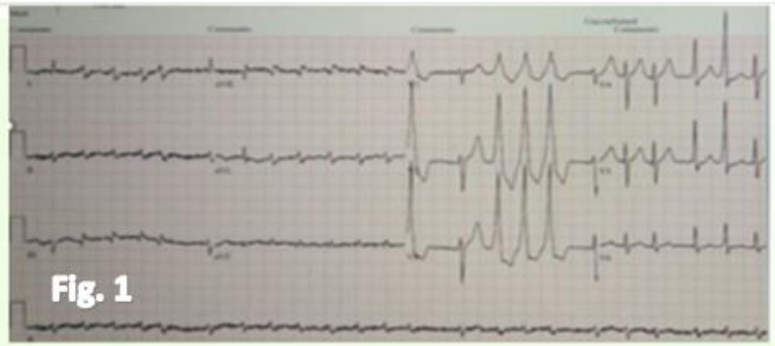
MED+

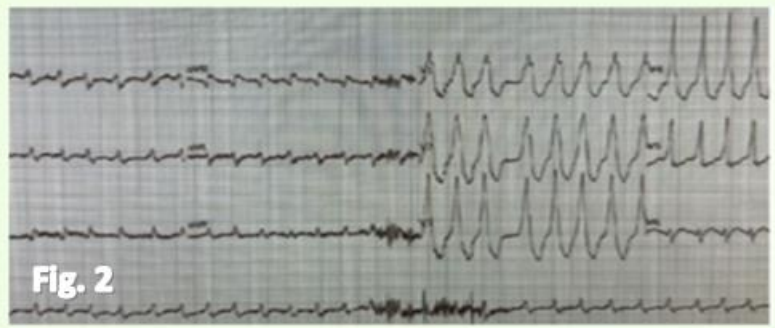
21 - 22 November

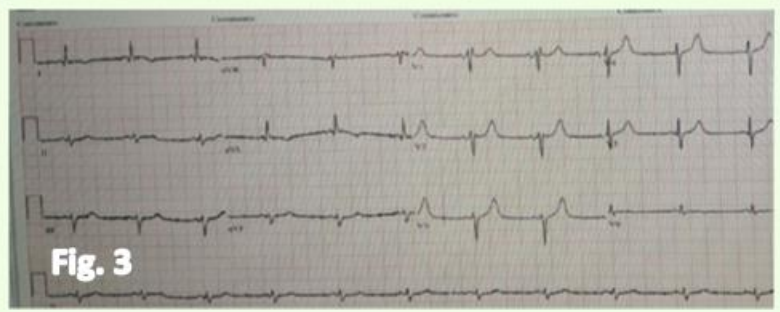
**Introduction:** AF remains the prototype of an irregular rhythm. The conventional rate management of haemodynamically stable AF with fast ventricular response (FVR) begins with betablockers (BBs) or non-dihydropyridine calcium channel blockers (CCBs) +/- digoxin.[1] It is vital to know when to deviate from this regular approach

**Case summary**

- Male/ 67 years, usually fit and well
- Presented with palpitations.
- No sustained chest pain, syncope, SOB, or heart failure symptoms.
- ECGs done; diagnosis of AF with FVR made (fig. 1).
- Normal inflammatory markers, electrolytes, Hb & TFT
- Commenced on Bisoprolol; max dose (10 mg) reached within 12 hours
- Digoxin loading commenced within 12 hours; 1500µg in 24 hours
- Rate worsened, QRS broadened with varying durations and amplitudes (fig. 2).
- 42nd hour r/v: clammy, BP – 108/70 mmHg (from 148/90 mmHg), ↑JVP, bi-basal crackles, conscious, no chest pain.
- Cardioverted as haemodynamically compromised
- Post cardioversion ECG: shortened PR-interval and some delta waves (fig. 3).




ECGs at presentation (fig. 1), immediately prior to cardioversion (fig. 2) and post cardioversion (fig. 3)

**Discussion:**

- Pre-excited AF occurs in those with accessory pathway (AP)
- Presents as a broad complex irregular tachycardia with varying duration and amplitude
- AP features may be present on the routine ECG in sinus rhythm.[2]
- Pre-excited AF can deteriorate into VT/VF
- Management involves an irregular approach.
- BBs, non-dihydropyridine CCBs and digoxin should be avoided
- Propafenone, Flecainide and Procainamide can be used
- Haemodynamically compromised patients should have immediate direct-current-cardioversion.[1, 3]

**References**

1. Kotalczyk A, Lip GY, Calkins H. The 2020 ESC guidelines on the diagnosis and management of atrial fibrillation. *Arrhythmia &Electrophysiology Review*. 2021 Jul;10(2):65.

2. Willems JL, de Medina EO, Bernard R, Coumel P, Fisch C, Krikler D, Mazur NA, Meijler FL, Mogensen L, Moret P, Pisa Z. Criteriafor intraventricular conduction disturbances and pre-excitation. *Journal of the American College of Cardiology.* 1985 Jun1;5(6):1261-75.

3. Joglar JA, Chung MK, Armbruster AL, Benjamin EJ, Chyou JY, Cronin EM, Deswal A, Eckhardt LL, Goldberger ZD, Gopinathannair R, Gorenek B. 2023 ACC/AHA/ACCP/HRS guideline for the diagnosis and management of atrial fibrillation: a report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines. *Circulation.* 2024 Jan2;149(1):e1-56.

# Amiodarone-Induced Type 2 Thyrotoxicosis (AIT) presenting as Thyroid Storm with Multiorgan Involvement

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## Clinical Case - Timeline Of Events

**66-year-old female: PMH of hypertension, HF, AF, osteoporosis + unremarkable thyroid history.**

**2022**

Cardioversion for AF. Subsequently commenced on amiodarone.

**May 2024**

Exertional dyspnoea, oedema and thyrotoxicosis
**AIT suspected**; further investigations requested. **Carbimazole and prednisolone initiated.**

**July 2024**

**08/07/24**- ED: **worsening CCF with uncontrolled AF, new onset jaundice (ALT 481 U/L) and AKI (creatinine 318 umol/l)**. 16-day hospital stay.

Normal thyroid USS, ESR 67mm/hr, **Burch-Wartofsky Point Scale score of 60→ Type 2 AIT diagnosed**.

**Carbimazole stopped, prednisolone and bisoprolol increased.** Lugol's iodine and cholestyramine commenced.

**August 2024**

**30/07/24**- ED: **worsening CCF, HFrEF (45% EF).**

HF medications optimised, TFTs and ALT normalised. Prednisolone dose weaned.

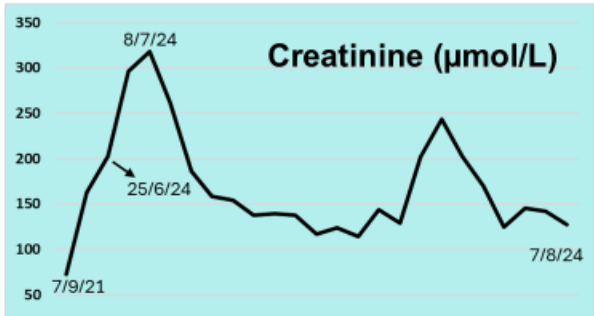
## Investigations

Initiation of carbimazole and prednisolone therapy. Amiodarone stopped.

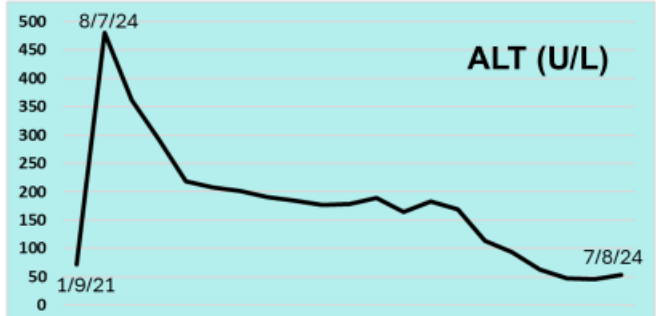
Cessation of carbimazole therapy. Prednisolone dose increased. Initiation of cholestyramine + Lugol's iodine.

| Date | TSH mU/L (0.35-5.5) | T4 pmol/L (11-22) | T3 pmol/l (3.1-6.8) | TPO (0-60) | TSI (<0.56) |
|---|---|---|---|---|---|
| **21/05/24** | **<0.03** | **62.1** | **14.8** | **42** | **<0.10** |
| **03/07/24** | **<0.02** | **71.6** | **5.4** | | |
| **10/07/24** | <0.02 | 35.9 | | | |
| **15/07/24** | <0.02 | 36.0 | 3.2 | | |
| **23/07/24** | 0.07 | 26.5 | | | |
| **30/07/24** | 0.44 | 23.9 | | | |
| **06/08/24** | 1.04 | 21.4 | | | |

**Graph 1: Trend in creatinine**




**Graph 2: Trend in ALT**




## Discussion

- **The amiodarone treatment led to thyrotoxicosis which manifested as decompensated heart failure. Treatment of the thyrotoxicosis and heart failure resulted in AKI and deranged LFTs, which posed a significant management challenge.**
- The high iodine content of amiodarone can result in suppression of thyroid hormone production due to the Wolff-Chaikoff effect. In some patients this effect is escaped, resulting in thyroid dysfunction. 14-18% of patients taking amiodarone develop overt thyroid dysfunction- either hypothyroidism or thyrotoxicosis (AIT).
- Two subtypes of AIT- Type 1 (excessive thyroid hormone synthesis with underlying thyroid disorder) and Type 2 (destructive thyroiditis). Differentiation between the two types of AIT helps to determine correct treatment.
- AIT can present with typical hyperthyroid symptoms. However, our patient predominantly presented with symptoms of decompensated heart failure.
- Deranged LFTs were attributed to thyrotoxicosis itself and exacerbated by cardiac decompensation and the recent initiation of carbimazole, given that liver screening and imaging were normal. Additionally, cardiac decompensation and its treatment led to AKI.
- Cholestyramine may be beneficial in refractory cases of thyrotoxicosis and can also be used in AIT before considering salvage thyroidectomy, if required.

## Key Points

- Diagnosis, differentiating subtypes and the treatment of AIT can be challenging.
- In this case, challenges arose due to the side effects of anti-thyroid medication and balancing diuretic use, to offload the patient, whilst limiting hepatic and renal derangement.
- Classical thyrotoxicosis symptoms may not always be present in patients and may be masked by underlying cardiac conditions. Patients on amiodarone should be advised to seek prompt medical attention for symptoms of thyrotoxicosis.
- An MDT approach is crucial for managing thyroid storm with multi-organ involvement.

# Electronic vaping-associated lung injury in Type 1 Gaucher's disease

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## Introduction

Electronic vaping-associated lung injury (EVALI) is an emerging health concern with pathophysiology thought to be due to chemical toxicities from vaping aerosols, but this remains unclear (1). Type 1 Gaucher's Disease is a lysosomal storage disorder diagnosed by reduced glucocerebrosidase enzyme in peripheral blood leukocytes. Individuals with Gaucher's disease have increased susceptibility to severe infections/injuries due to underlying metabolic imbalances and compromised immune function, potentially impairing detoxification and recovery from vaping aerosols. Preclinical studies demonstrate that e-cigarette vapour alters fibroblast viability, increasing connective tissue and tumour growth factor expression, to promote lung fibrosis (3). Significant challenges arise due to the heterogenous nature of clinical presentations in Gaucher's disease, including pulmonary involvement as an under-recognised clinical manifestation.

This case report describes an 18-year-old male with type 1 Gaucher's disease presenting after an out-of-hospital cardiac arrest.

## Clinical Case

An 18-year-old male was brought into the emergency department after a cardiac arrest at work. CCTV showed him shaking his hands as though he had pins and needles- swaying before collapsing. CPR was commenced. After 4 rounds, one shock resulted in immediate return of spontaneous circulation. He was conscious when paramedics arrived. There was no seizure activity/urinary incontinence/tongue biting/infective symptoms. The following additional history was elicited on admission:

*Past medical history* - Type 1 Gaucher's disease
*Drug history* - Eliglustat 84mg BD (recently commenced)
*Family history* - Unknown as adopted
*Social history* - Lives with adoptive family. Fit and active. Previous social smoker for 1-2 years. Regular user of electronic vaping devices over past year (replacing device every 2-3 days). Tried cannabis once a few months ago.

## Initial assessment and investigations

On initial assessment, he had a 35% oxygen requirement, sats 97%, RR 36, HR 105, BP 105/53, apyrexial and GCS 15. He had some generalised chest wall pain. Other investigations are listed below:

Bloods - CRP 1; Hb 115; plt 223; U&Es/LFTs in range
ECG - sinus rhythm without QT interval prolongation
His initial chest x-ray and subsequent CT pulmonary angiogram are shown in figures 1 and 2.

| ABG - | |
|---|---|
| pH | 7.34 |
| $pO_2$ | 10.8 |
| $pCO_2$ | 5.1 |
| $HCO_3$ | 20.2 |
| lac | 1.5 |
| Glu | 10 |

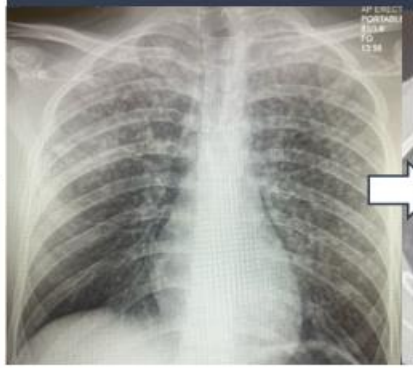


Figure 1 - admission CXR showing bilateral patchy opacities favouring the upper lobes

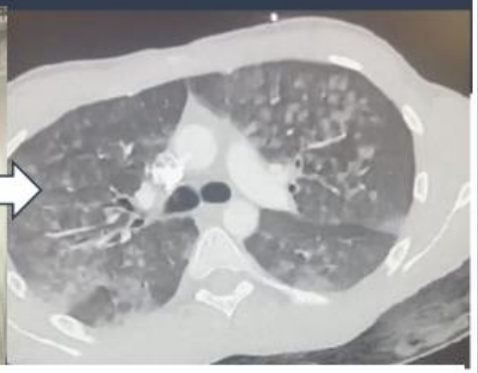


Figure 2 - CTPA showing diffuse alveolar shadowing in upper zone distribution

## Management and next steps

Following a brief stay in critical care for post-resuscitation care, he quickly recovered and was stepped down to the coronary care unit for further investigations surrounding the cause of his arrest. His recently started arrhythmogenic medication, Eliglustat, was stopped as a precaution , and due to his CXR, he was advised to cease vaping.

A cardiac MRI indicated potential infiltrative changes due to his Gaucher's disease, and an ICD was implanted electively two weeks later. His post-insertion chest x-ray is shown in figure 3.

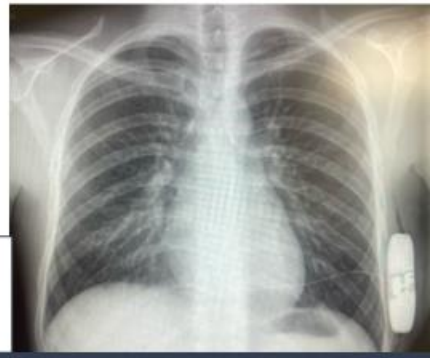


Figure 3 (right)- CXR post-ICD insertion showing complete resolution of the lung changes

## Conclusion

This is the first reported case of EVALI in a patient with type 1 Gaucher's disease. Despite confounding factors like post-CPR injury and recent Eliglustat initiation, the appearances on imaging were highly suggestive of an inhalation injury. The underlying glucocerebroside accumulation in various organs may have increased this patient's susceptibility to lung injury.

The management of EVALI is largely supportive, systemic corticosteroids have been found to reduce lung inflammation (2) and fibrosis (3). One preclinical study reported a therapeutic benefit using a combined glucocorticoid with pirfenidone (4).

Further research is crucial in optimising our understanding of EVALI, and the management of pulmonary injury, particularly in the context of complex underlying conditions such as Gaucher's disease.

## REFERENCES

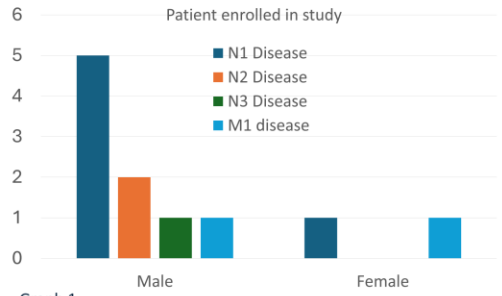
1.Park J, Alexander LEC, Christiani DC. Vaping and Lung Inflammation and Injury. Annu Rev Physiol. 2022 Feb: 84: 611-629.
2.Kalininskiy A, Bach CT, Nacca Ne, Ginsberg G, Maraffa J et al. E-cigarette, or vaping, product use associated lung injury (EVALI): case series and diagnostic approach. *Lancet Respir Med* 2019. 7 (12): 1017-26.
3. Du Y, Zhu P, Wang X, Mu M, Li H et al. Pirfenidone alleviates lipopolysaccharide-induced lung injury by accentuating BAP31 regulation of ER stress and mitochondrial injury. J Autoimmun 2020. 112: 102464.
4. Nho R. E-cigarette vapor alters lung fibroblast viability via alpha 7 nicotine acetylcholine receptor. *FASEB J* 2020. 34 (S1): 1.
5. Wu C-H, Liao T-Y, Chen Y-H, Kuo P-H. Treatment of electronic cigarette or vaping product use-associated lung injury (EVALI) by corticosteroid and low-dose pirfenidone: Report of a case. *Respirology Case Reports* 2021. 9: e0845. https://doi.org/10.1002/rcr2.845

# Retrospective analysis of patients treated with radical chemoradiotherapy for lymph node positive bladder cancer at University Hospitals Plymouth NHS Trust between 2016 and 2021

Dr Damien Coleburt, Dr Gregory Ball, Dr Dominique Parslow

## Background

- Clinically node-positive bladder cancer is a relatively rare presentation of bladder cancer. It is known to carry a poor prognosis.
- As a result, these patients have largely been excluded from seminal clinical trials utilising radical treatment approaches.
- The optimal management of lymph node positive bladder cancer remains poorly defined. Our study is a retrospective analysis of outcomes of patients with node positive bladder cancer treated in our centre with radical chemoradiotherapy




Graph 1

## Methods

Varian database was searched for all patients who have undergone radical radiotherapy to bladder and lymph nodes since 2016 at University Hospitals Plymouth NHS Trust.

Their demographic data was collected, as well as progression free survival, overall survival, treatment toxicity and type of chemotherapy utilised, both neoadjuvant and concurrent.

Data regarding radiotherapy toxicity and side effects was collected, with only minor bowel and urinary side effects documented. No grade 3 (or higher) toxicities were documented in all patients analysed.

## Results

11 patients (2 women and 9 men) in our centre have undergone VMAT radiotherapy for lymph node positive bladder cancer since 2016.

Neoadjuvant platinum-based chemotherapy plus gemcitabine x 4-6 cycles followed by concurrent mitomycin C + capecitabine was used for 9 patients (7 urothelial carcinoma, 2 non-small cell carcinoma) and neoadjuvant and concurrent carboplatin and etoposide was used for the 2 patients with small cell carcinoma.

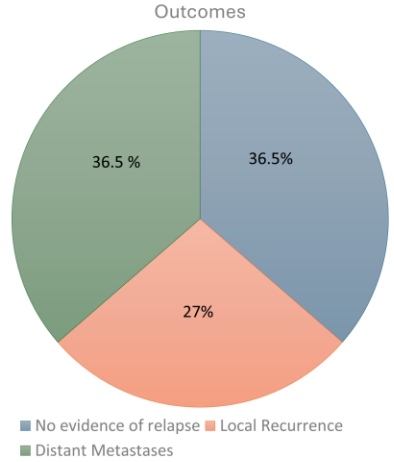



Chart 1

7 out of 11 patients have had bladder cancer relapse since treatment (3 local recurrence, 4 distant metastases).

Two of the M1 patients had a very poor progression free survival of < 3 months and a poor overall survival, and one of the para-aortic LN patients has had a complete and ongoing response.

Excluding these metastatic patients, median PFS was 16 months (7-55months) and median OS was 34 months (21-62 months).

## Conclusions

Chemoradiotherapy appears to be well tolerated with an acceptable side effect profile for patients with node positive bladder cancer.

Although numbers were small, the addition of radiotherapy to patients with para-aortic involvement seems to have limited value for most patients, with rapid distant disease recurrence.

Many patients with N1-3 bladder cancer had durable responses to CRT, and a superior PFS and OS than could be expected by systemic treatments alone.

Further investigation is needed into the utility and effectiveness of CRT for node positive bladder cancer. It may well offer an effective alternative to radical cystectomy and lymph node clearance to provide long term disease control.

## References

1. Haque W, Verma V, Butler EB, Teh BS. Chemotherapy Versus Chemoradiation for Node-Positive Bladder Cancer: Practice Patterns
and Outcomes from the National Cancer Data Base. Bladder Cancer [Internet]. 2017 Oct 27;3(4):283–91.
2. Sherif A, Holmberg L, Rintala E, Mestad O, Nilsson J, Nilsson S, et al. Neoadjuvant Cisplatinum Based Combination Chemotherapy in Patients with Invasive Bladder Cancer: A Combined Analysis of Two Nordic Studies. European Urology [Internet]. 2004 Mar 1;45(3):297–303.
3. Fackrell DG, Ford D, Chetiyawardana S, Austin S, James N. The delivery of radical radiotherapy to the bladder and pelvis in node positive (N1) bladder cancer: a five patient case series. BJR|Case Reports [Internet]. 2017 Jun 1;3(2):20160102.

# FunctioNLP: A Natural Language Processing Approach for Tracking Longitudinal Changes in Functional Status Across Healthcare Settings

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## Background

Understanding functional trajectories is crucial for clinical decision-making, but comprehensive data remains elusive. While clinicians regularly document functional status in their notes, this valuable information has been effectively trapped in unstructured text, making systematic analysis impossible at scale.

## Methods

We analysed clinical documentation from nearly 65,000 hospital admissions at King's College Hospital (2022-2023), using the CogStack information infrastructure. Our system was developed to identify functional status descriptions in clinical notes, converting them into quantifiable scores. We included both standard Barthel domains and additional functional measures commonly documented in clinical practice, such as sitting and standing ability. Over 8000 manual annotations were used to fine-tune the MedCAT AI model, which was then run on 9 million notes, producing 5.8 million estimated functional scores. Figure 1 explains how MedCAT is used to annotate clinical notes with structured clinical concepts. Cox-proportional hazards, linear mixed effects and joint models were used to test statistical associations.

We compared places where a Barthel Score was documented in the notes to estimated Barthel Scores to validate the modelling approach.

## Key Points

### The Challenge

Functional status is frequently documented in clinical notes but rarely in a structured, analysable format.

### Our Solutio

We trained a system to read clinical notes and convert narrative descriptions of function into quantifiable metrics.

### What We Found

- Good correlation with formal Barthel assessments by physiotherapists
- Predictive of clinical outcomes including mortality and length of stay
- First successful automation of functional status extraction

### Why it matters

It could transform our understanding of functional trajectories across multiple conditions and settings. Unlocks potential for large-scale research into:

- Disease progression and recovery patterns
- Treatment effectiveness
- Outcome prediction including discharge destination and length of stay

All using existing clinical documentation.

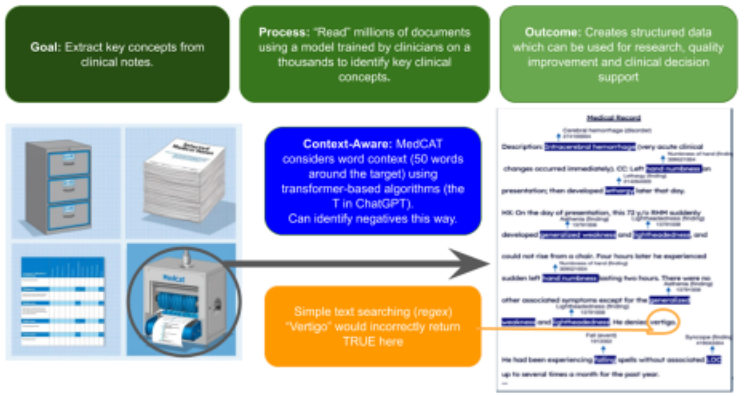


Figure 1. Diagram explaining how MedCAT annotates text notes with SNOMED CT concepts

## Results

We were able to generate almost 6 million functional annotations using the MedCAT tool. The system proved particularly powerful in predicting clinical outcomes. We found striking differences in 120-day mortality between patients whose mobility declined during admission compared to those who maintained or improved their function (Figure 2). Both the trend of mobility change and average mobility level were strongly predictive of mortality ($p < 10^{-11}$), remaining highly significant even after adjusting for age and sex ($p < 0.0001$) using a Cox-proportional hazards model. Analysis of functional trajectories revealed important demographic patterns. Older patients and males typically started with lower baseline function, with older age also associated with faster functional decline during admission ($p < 0.00005$), when tested using a linear mixed effects model. These patterns remained consistent across our dataset of nearly 65,000 admissions.

The system also showed promise in predicting length of stay. Early mobility patterns, particularly in the first 4 days of admission, proved highly predictive. The mean mobility and number of assessments also significantly influenced length of stay ($p < 0.0005$), as did variability ($p = 0.008$), suggesting that patterns of functional assessment themselves may indicate complexity of care needs.

## Discussion

While initially trained on hospital admission data, FunctioNLP has the potential to be applied to a wide range of settings, opening up new possibilities for tracking functional status. It allows for large-scale, longitudinal research using various data sources, and facilitates comparisons between different settings. We plan to adapt and validate FunctioNLP across diverse settings and conditions, refine it for condition specific applications and develop predictive models.

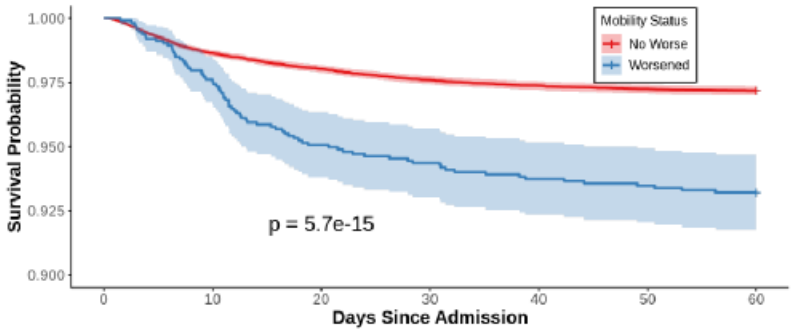


Figure 2. Kaplan-Meier Plot split by loss of mobility (blue line) against static or improving in-hospital mobility

## Validation

There were 62 times that a Barthel score was documented, but only 24 where an estimated score was available within 28 days. Comparing documented and estimated Barthel, the Mean Absolute Error (MAE) was 0.21, or less than 1 point out on a 4 point scale (Figure 3).

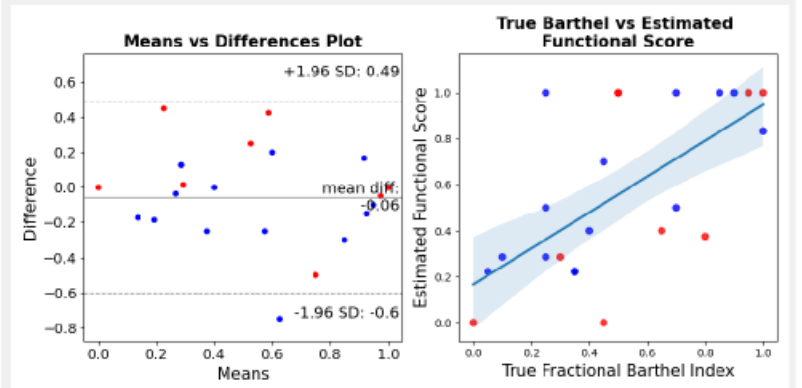


Figure 3. Documented vs estimated Barthel: mean score plotted against difference between scores (left panel) and documented against estimated Barthel scores (right panel), with scores not on the same day coloured red



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# In-patient Optimisation of Guideline Directed Medical Therapy (GDMT) in Heart Failure; Are we too cautious?

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## INTRODUCTION

Acute heart failure accounts for approximately 5% of all hospital emergency admissions(1) .Each acute heart failure admission confers a poor prognosis with a high rate of readmissions and mortality within 6 months post-discharge(2) GDMT has been shown to improve symptoms, reduce readmission and improve survival in heart failure patients with a reduced ejection fraction (HFrEF)(3). Additionally, ***angiotensin-receptor, neprilysin inhibitors (ARNIs)*** have been shown to be superior to angiotensin converting enzymes/ angiotensin receptor blockers (ACE/ARBs) in achieving this(4).

Due to the staffing crisis and rising demand on outpatient clinics, timely optimization of GDMT is often lacking. We therefore audited our heart failure in-patients to identify and address the causes of sub-optimal GDMT on discharge.

## METHODS

**Audit Period**
- Retrospective
- NICOR database
- August-Sept 2022 (HFrEF LVEF<40%)

**Admission**
- Age, sex, ethnicity
- NT-pro-BNP at admission

**Discharge &Follow up**
- Length of stay (LOS)
- Renal function
- Systolic blood pressure, heart rate
- Time to subsequent heart failure admission

## RESULTS

- Total: **35 patients**, 63% females
- **Medial age:** 80 years.
- **Mean Length of Stay:** 12 days.
- **Mean NT-Pro BNP on admission:** 15,000.

- **Only 3** (8%) patients were on optimal GDMT prior to discharge.

- 7 patients eligible for ARNI i.e., no allergy/intolerance, eGFR>30, SBP>95 (mean SBP 122 ±18 mm Hg), and not on ACEI/ARB were **not** discharged on it.
- 12 (34%) heart failure readmissions.
- 9 (26%) all-cause **deaths within 3 months**.

| GDMT Drug class | No. on Tx: n (%) | No. with CI to Tx: eGFR <30 n (%) | No. with CI to tx: SBP < 95 n(%) | No. with CI to Tx: HR <60 n (%) | No. with K+ > 5.5 n (%) | No with CI to tx:(On ACE/ARB) n (%) | No. with side effects/ Allergies n (%) |
|---|---|---|---|---|---|---|---|
| ACEI/ARBs | 12 (34) | 10 (43) | 8 (35) | - | - | - | 2 (6) |
| Beta - Blocker | 21 (60) | - | 4 (29) | 3 (21) | - | - | 0 |
| MRAs | 11 (31) | 13 (54) | 8 (33) | - | 1 (4) | - | 0 |
| ARNI | 4 (11) | 13 (41) | 9 (29) | - | - | 10 (32) | 2 |
| SGLT2 inhibitor | 16 (46) | 8 (42) | 7 (37) | - | - | - | 1 (5) |

**Table 1:** showing the number, n (%) of patients on each class of heart failure (HF) medication treatment (tx) as well as the number of patients with contraindication (CI) to that specific class.

## DISCUSSION

Challenges faced:
- Late discharge decisions and lack of continuity of care due to cycling of ward teams.
- Relatively higher SBP and HR thresholds for initiating therapy.
- Lack of awareness of safe initiating and titration of these medications.

**4 Pillars of GDMT**: Beta blocker, Mineralocorticoid receptor antagonist, ARNI, SGLT2 inhibitors.

**Conclusion:** Implement a pre-discharge checklist and educate medical teams GDMT to enhance patient outcomes (admissions & mortality).

## REFERENCES

1) Facts and figures - Information for journalists - BHF [Internet]. https://www.bhf.org.uk/what-we-do/news-from-the-bhf/contact-the-press-office/facts-and- figures [cited 2023 Aug 31]
2) Crespo-Leiro MG, Anker SD, Maggioni AP, et al. European Society of Cardiology Heart Failure Long-Term Registry (ESC-HF-LT): 1-year follow-up outcomes and differences across regions. Eur J Heart Fail. 2016 Jun 1;18(6):613–25.
3) CMcDonagh TA, Metra M, Adamo M, et al. 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure. Eur Heart J. 2021;42(36):3599–726.
4) John J.V. McMurray, M.D., Milton Packer, M.D., Akshay S. Desai, M.D., M.P.H., et al.–Neprilysin Inhibition versus Enalapril in Heart Failure. N Engl J Med. 2014;371(11):993–1004.

# Fabry Disease: The riddle of unexplained Left Ventricular Hypertrophy. A case report

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## INTRODUCTION

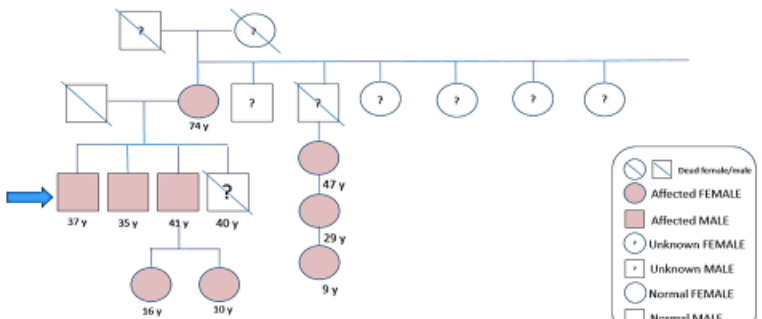
Fabry disease is a rare x-linked lysosomal storage disease that results in the deficiency of a-galactosidase A (GLA) enzyme and the progressive accumulation of GB3, globotriaosylceramide in endothelial-abundant tissues, primarily in the heart, kidneys, and CNS. Since its discovery in 1882, Fabry disease has been outseen as a multisystem disease but with kidney burden. In the 1990s, several papers were published highlighting another prototype of the disease, the 'Cardiac Variant,' which is commonly misdiagnosed as Hypertrophic cardiomyopathy (HCM). The phenotypic-genotypic correlation is complicated. Still, some mutations are associated with the classic early-onset disease, while others are related to the non-classical late-onset disease with a predominant or exclusive cardiac phenotype. Such variants may be misdiagnosed, leading to significant delays in initiating proper therapy. Currently, a hundred and two cases of FD have been documented.

## CASE VIGNETTE

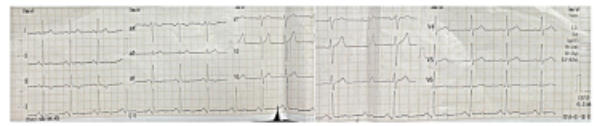
A 37-year-old male farmer sought medical advice, complaining of progressive exertional dyspnea as well as non-specific chest pain that lasted for four months. The pain was of mild intensity and didn't worsen with exertion or activity, but this limited his daily working routines. He didn't recall bouts of limb pain, paresthesia, or hyperhidrosis.

The family history was significant, with the sudden cardiac death of an older 40-year-old sibling and another 41-year-old brother who was labeled as having hypertrophic cardiomyopathy. His clinical examination revealed no angiokeratoma or corneal opacities. His blood pressure is 130/70 mm/Hg, and his pulse is regular, good volume, and 70 bpm. The chest and precordial examination were unremarkable.

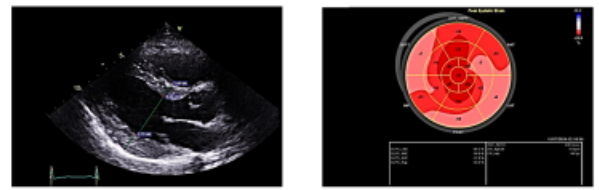
Baseline renal function revealed a serum creatinine of 1.13 mg/dl and an eGFR of 85 ml/min/1.37m2. The urine analysis revealed neither microalbumin nor protein.



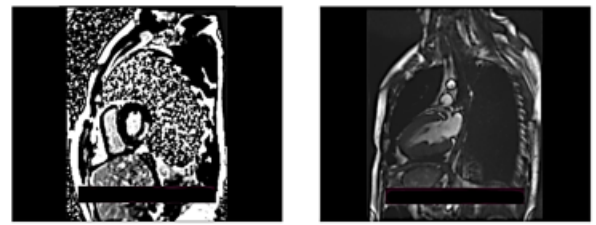

Family screening



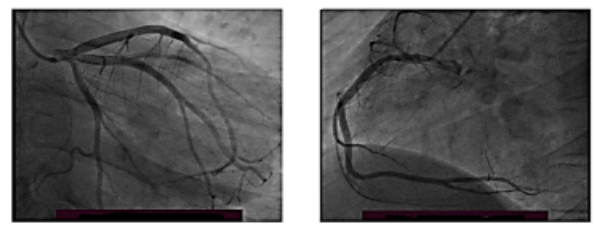
A. Electrocardiography



B. Echocardiograph; PLAX View and Speckle Tracking Study



C. Cardiac MR: Mid-wall Late Gadolinium Enhancement (LGE) in the Inferolateral Segment



D. Diagnostic Coronary Angiography Showing Patent Both Left and Right Systems.

Figure 1

Figure 1 : (A) T-wave inversion in inferior leads and high voltage QRS complex(lead2). (B) Moderate left ventricular hypertrophy with an interventricular septal thickness of 14mm and a posterior wall thickness of 17mm. Speckle tracking showed impairment (GLS 15%) at the basal third segments. (C) A mid-wall late gadolinium enhancement (LGE) inferolaterally. (D) Normal Coronary arteries.

## ENZYME ASSAY

Enzyme testing by Tandem mass spectrometry from Dried Blood Spots showed an α-Galactosidase level of 0.1 µmol/L/h (2.8 cut-off). DNA Extraction showed a mutation detected in the hemizygous state (Pathogenic stop (nonsense) mutation) c.132G>A (p. (Trp44*).

## CONCLUSION

Late-onset isolated cardiac variant of Fabry disease is a potentially fatal disease that should be included in the differential diagnosis of Left ventricular hypertrophy.

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# How reliable is CTCA in the diagnosis of coronary artery disease?

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Royal Cornwall Hospitals NHS Trust

## Background and Aims

Coronary artery disease (CAD) is a major global cause of death. CT coronary angiography (CTCA), though widely used for stable angina, has been found to overestimate disease severity compared to invasive coronary angiography (ICA).[1] This study evaluates the discrepancies between CTCA and ICA, aiming to prompt further research on how these differences affect management decisions.

## Methods

- Data collected from a Southwest hospital's electronic records.
- Imaging reports of 350 patients who underwent CTCA and subsequent ICA over 2-year period were reviewed.
- Analysed the discrepancy between results.
- Further analysed LAD by demographics and risk factors.
- Used paired t-tests for statistical analysis.

## Results

Our study revealed significant discrepancies between CTCA and ICA in evaluating CAD severity. CTCA tended to overestimate disease severity across all coronary arteries and patient subgroups, with the largest discrepancies seen in the left anterior descending artery (LAD), particularly in females aged 60 and older. Tables 1 & 2 demonstrate this in further detail.

| Artery | Mean difference, p<0.0001 (95% CI) |
|---|---|
| LMS | 0.27 (0.14-0.41) |
| LAD | **0.66** (0.55-0.76) |
| LCx | 0.51 (0.35-0.67) |
| RCA | 0.31 (0.17-0.44) |

***Table 1*** *– Mean Difference (=μCTCA-μICA) Values Across Different Arteries*

| Variable(s) | Mean difference, p<0.0001 (95% CI) |
|---|---|
| Age >60 | 0.70 (0.59-0.83) |
| Hypercholesterolemia | 0.73 (0.56-0.90) |
| Smoking History | 0.73 (0.55-0.92) |
| Females | 0.81 (0.58-1.03) |
| Females + Age >60 | **0.88** (0.61-1.15) |

***Table 2*** *– Mean Difference (=μCTCA-μICA) Values for the **LAD** Across Various Variables*

## Conclusion

The tendency of CTCA to overestimate CAD severity presents a substantial challenge, particularly in an overburdened healthcare system and an aging population. This underscores the need for the development of alternative imaging techniques and further research to improve diagnostic accuracy in CAD management.

**References**

**1.** Moschetti K, Hulten E, De Cecco CN, et al. Coronary CTA vs coronary angiography for risk stratification: a systematic review and meta-analysis. J Cardiovasc Comput Tomogr. 2016;10(4):314-322.

# Analysis of Delays from Patient Presentation to Lumbar Puncture Procedure in Acute Admission Settings

D Trivedi, M Patyjewicz, A Shah
The Royal London Hospital, Barts Health NHS Trust

## Background

Lumbar punctures (LPs) are essential diagnostic and therapeutic tools, however procedural delays often occur due to trainee inexperience and equipment issues. Additionally, many clinicians habitually request coagulation tests to mitigate bleeding risks, despite guidelines from the Association of British Neurologists advising against routine testing for patients without bleeding disorders or liver disease [1]. This two-cycled quality improvement project (QIP) uses a Plan-Do-Study-Act (PDSA) approach to assess whether routine coagulation testing contributes to inefficiencies, overall aiming to reduce procedural delays by encouraging evidence-based medicine, thus minimising unnecessary investigations.

## Methods

**PDSA Cycle 1:** Data analysis via electronic patient records reviewing patients admitted to AAU between Dec 2023 – July 2024

→ Data collection on LP timing, clotting profile requests, CSF result publication time (protein, glucose and MC&S)

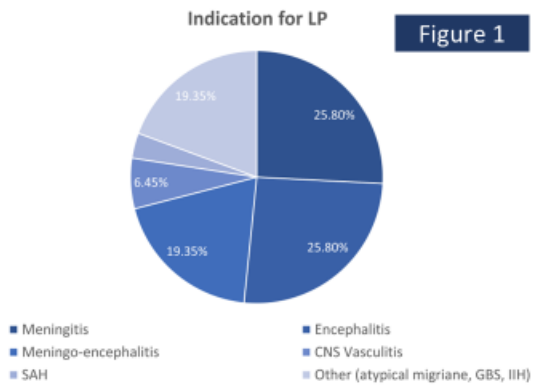
→ Survey distribution on procedural understanding. Educational interventions – LP teaching programme and posters.

→ **PDSA Cycle 2:** Reassessment of LP timing and delays, clotting requests and trainee procedural knowledge

## Results: Demographics

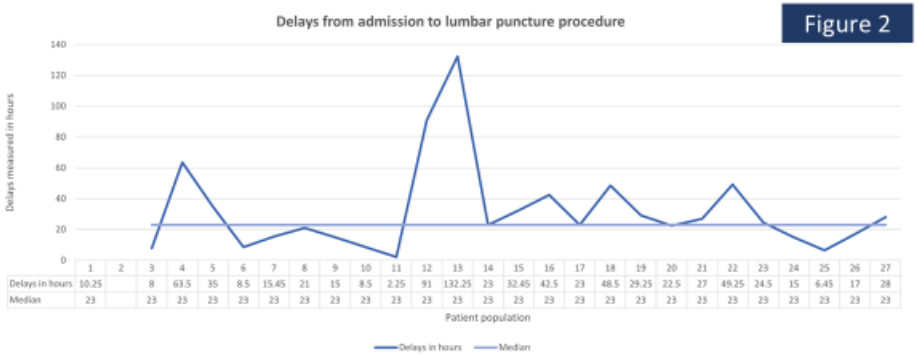
N = 31 patients had a lumbar puncture out of which 83.57% patients had a successful procedure. 5 patients did not have a successful LP and therefore were not included in this data analysis. The gender distribution across this data set included 51.6% females and 48.4% males. The most common indication for LP (as per initial physician impression documented within medical clerking) was meningitis, followed by encephalitis. In PDSA Cycle 2, a total of 11 patients were retrospectively analysed, with data comparing similar metrics – i.e., LP timing, clotting profile requests, CSF test result publication.

Figure 1




## Results: Plan-Do-Study-Act Cycle 1 and 2

Figure 2




| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Delays in hours | 10.25 | | 8 | 63.5 | 35 | 8.5 | 15.45 | 21 | 15 | 8.5 | 2.25 | 91 | 132.25 | 23 | 32.45 | 42.5 | 23 | 48.5 | 29.25 | 22.5 | 27 | 49.25 | 24.5 | 15 | 6.45 | 17 | 28 |
| Median | 23 | | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 |

Figure 2 showcases delays (hours) from patient admission and medical clerking to LP procedure. The median delay was 22.4 hours, with an additional median delay of 3.35 hours between LP completion and availability of CSF glucose, protein results on electronic patient records. 94% of patients underwent routine coagulation testing however, this was clinically indicated in only 6% of cases. The 2nd PDSA cycle improved LP delays to 15.5 hours. However, it is important to note that delays in publishing CSF test results persisted across both PDSA Cycles (58 hours and 54 hours respectively)

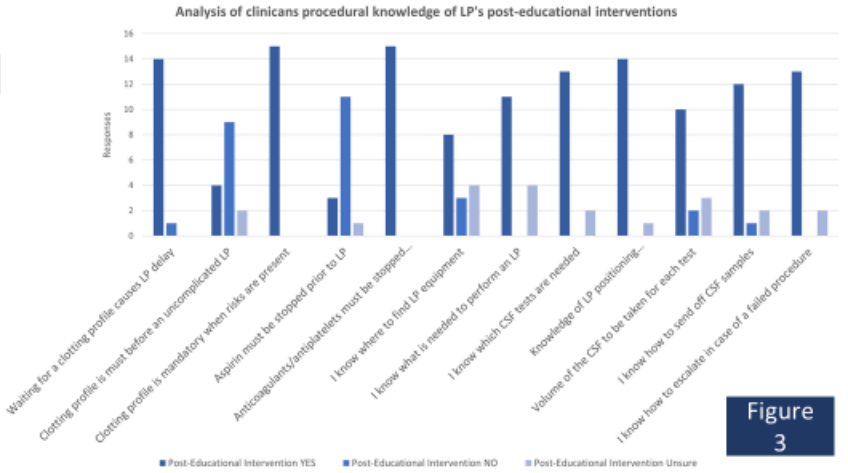



Figure 3

Qualitative surveys distributed amongst resident doctors demonstrated a lack of knowledge on recent LP guidelines. As evidenced by figure 3, regular teaching sessions, educational posters led to improvements in procedural confidence, better understanding of bleeding/thrombosis risk associated with LP and improved awareness of equipment location. Teaching sessions also allowed trainees to understand who to contact in case of procedural failure.

## Conclusion

Educational interventions improved trainee confidence, reduced LP delays and investigations, highlighting benefits of implementing evidence-based medicine. Future PDSA cycles should focus on optimising equipment availability and work to improve CSF reporting times

## References

1. Dodd KC, Emsley HCA, Desborough MJR, *et al* Periprocedural antithrombotic management for lumbar puncture: Association of British Neurologists clinical guideline. *Practical Neurology* 2018;18:436-446.

# A Case Report of Tuberculous Pericarditis: Diagnostic and Management challenges

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Royal Papworth Hospital
NHS Foundation Trust

## Introduction

Tuberculous pericarditis is a rare extrapulmonary TB with nonspecific symptoms, making diagnosis challenging, especially in non-endemic areas. Early recognition and a multidisciplinary approach are crucial to prevent complications.

We present a case of a 42-year-old woman diagnosed through pericardial biopsy after negative initial tests. A coordinated multidisciplinary approach and timely anti-TB therapy resulted in a successful outcome.

## Presentation

A 42-year-old UK-born woman with a history of bipolar disorder, asthma, and gastritis presented with a two-month history of worsening dyspnoea, fever, cough, chest pain, and oedema. Despite two courses of antibiotics, her symptoms persisted, along with unintentional weight loss. She had no recent travel or known TB exposure. Clinical examination revealed fever, tachycardia, elevated jugular venous pressure, bibasal crackles, and severe pedal oedema.

## Key Investigations

Severe anaemia (Hb 67 g/L), neutrophil leucocytosis and elevated CRP 110 mg/L, normal renal and liver function

**ECG**: sinus tachycardia without voltage reduction

**Chest X-ray**: cardiomegaly with pleural effusion

**CT CAP**: Large pericardial effusion with impaired right atrial filling suggestive of tamponade, mediastinal lymphadenopathy

**Echocardiogram**: Thickened pericardium with a large circumferential septated pericardial effusion, no signs of tamponade

Autoimmune and infection screens, including TB QuantiFERON and HIV tests, were negative.

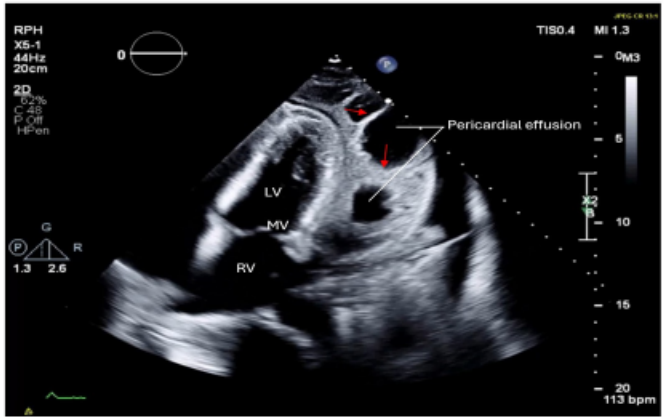



Figure 1. Apical 4-chamber view

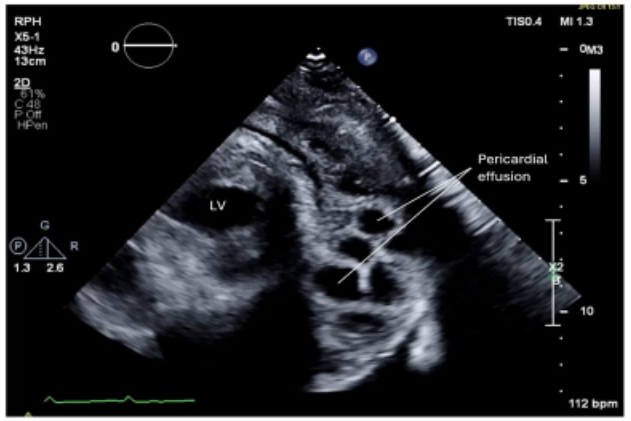



Figure 2. Parasternal short-axis view

Note large septations with multiple loculated appearance of pericardial effusion. LV – Left ventricle, RV – Right ventricle, MV – Mitral valve

## Management

Due to the complex pericardial effusion, the patient was transferred to a cardiothoracic centre where a VATS pericardial window revealed organized clots with minimal fluid. Although pericardial tissue analysis was negative for TB culture, TB-PCR of pericardial tissue confirmed tuberculous pericarditis. Histology showed organizing fibrinous pericarditis without granulomas. Further microbiological tests, including pericardial and pleural fluid, multiple sputum samples, TB isolator blood cultures were all negative.

She was started on standard anti-tuberculosis therapy and corticosteroids, which led to symptom resolution. Due to her psychiatric medication regimen, the mental health team was involved to manage potential drug interactions and minimize the risk of corticosteroid-induced mania.

## Conclusion

This case underscores the complexity of diagnosing and managing tuberculous pericarditis, highlighting the critical role of a multidisciplinary team. The decision to perform a VATS pericardial window enabled a definitive diagnosis, allowing for targeted treatment that resulted in a positive patient outcome. In this case, multiple microbiological samples were negative for acid-fast bacilli (AFB) and TB culture, emphasizing the importance of pericardial biopsy, which is more diagnostic than pericardial fluid analysis. Histology findings in such cases may be nonspecific. This case further illustrates the necessity of considering tuberculosis in the differential diagnosis of pericarditis, even in non-endemic regions, especially when the pericarditis is non-self-limiting or associated with features of TB, such as pericardial constriction or haemorrhagic effusion.

References

1.Cegielski JP, Devlin BH, Morris AJ, et al. Comparison of PCR, culture, and histopathology for diagnosis of tuberculous pericarditis.Journal of Clinical Microbiology. 1997 Dec;35(12):3254-7.
2.Sagrista-Sauleda J, Permanyer-Miralda G, Soler-Soler J. Tuberculous pericarditis: ten year experience with a prospective protocol fordiagnosis and treatment. Journal of the American College of Cardiology. 1988 Apr 1;11(4):724-8.
3.Lazaros G, Vlachopoulos C, Lazarou E, Tsioufis K. New approaches to management of pericardial effusions. Current CardiologyReports. 2021 Aug;23:1-9.
4.Marcu DT, Adam CA, Mitu F, et al. Cardiovascular involvement in tuberculosis: from pathophysiology to diagnosis and complications—anarrative review. Diagnostics. 2023 Jan 25;13(3):432.

# Improving documentation of secondary prevention targets in patients seen in TIA Clinic

**Dr Eilish Donnelly - Acute Internal Medicine ST5**
**Dr Mustafa Kadam – Acute Internal Medicine Consultant**
**Guy's and St Thomas' NHS Foundation Trust**

Guy's and St Thomas' NHS Foundation Trust

## INTRODUCTION

- Secondary prevention in patients diagnosed with a TIA or stroke is imperative due to increased risk of further vascular events
- The National Clinical Guideline for Stroke provides recommendations for providing information to patients and health care professionals in the management of risk factors

## METHODS

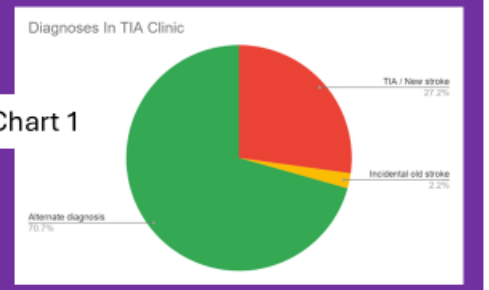
- Retrospective review of patient notes over a two month period from 1st May – 30th June 2023 (in total 184 patients)
- For patients diagnosed with stroke/TIA, letters from all encounters were reviewed to determine if advice was provided on:
  - Fasting LDL Cholesterol target
  - Blood pressure target
  - Lifestyle advice
  - Nutrition / dietitcs referral advised or made
  - Driving status and appropriate restrictions
  - Patient leaflet / further information provided

## AIMS

- To assess if patients seen in TIA clinic who were diagnosed with a stroke or TIA, had documented targets for secondary prevention and appropriate lifestyle advice

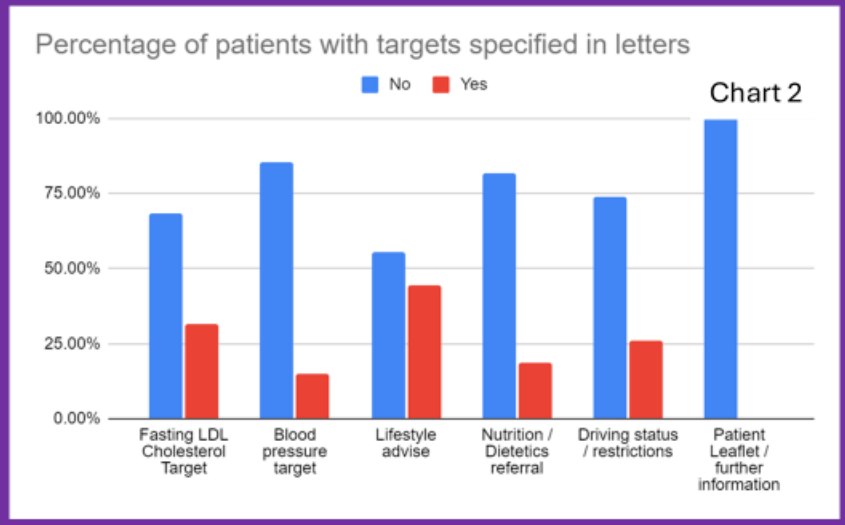
## RESULTS

Chart 1




Of the 184 patients seen in TIA clinic, 50 patients were diagnosed with a TIA / new stroke, and 5 patients had an incidental finding of an old stroke. These were included in further analysis.

Chart 2




## DISCUSSION

- We have produced an accessible summary sheet for all patients diagnosed with a TIA / stroke in clinic. This can be added to patient letters using a smartphrase on Epic.
- This provides a summary of stroke prevention advice on medications, driving advice, blood pressure and cholesterol targets as well as lifestyle modification
- A QR code and link to the plain language summary of the stroke guideline is also included.
- A further cycle will be performed to see if we are providing written information of targets to patients seen in TIA clinic
- We will formally collect feedback from patients and GPs, although ad hoc feedback in clinic and in meetings from GPs has been positive
- A retrospective study looking at the long term impact on further incidence of stroke within a year would be an interesting future step to assess the affect on patient outcomes

## REFERENCES

Mohan et al. Risk and Cumulative Risk of Stroke Recurrence: A Systematic Review and Meta-Analysis
Johnston KC, Connors AF Jr, Wagner DP, Knaus WA, Wang X, Haley EC Jr. A predictive risk model for outcomes of ischemic stroke
National-Clinical-Guideline-for-Stroke-2023

# NT-pro BNP as a Prognostic Indicator for Chronic Heart Failure in Elderly Population – A Pilot Study

Eranda Ranasinghe Arachchi[1] , Kouamivi Agboibor[1], Gunavardhan Yalamchilli[2], Naseema-Maria Begum[2], Rizwan Khan[3]
Northern Ireland Medical and Dental Training Agency , University of Buckingham UK

## Introduction:

- Heart failure accounts for 2% of bed occupancy in entire NHS as well as accounts for 5% of all NHS emergency admissions
- Hospitalizations for decompensated heart failure in geriatric population carries poor prognosis. Frequent admissions
- NT pro BNP is used in the diagnostic criteria for heart failure on NICE guidelines but never been recommended in the follow up guidelines specially in elderly population
- This pilot study is to evaluate NT-pro BNP as a PROGNOSTIC INDICATOR for elderly population with chronic heart failure.

***1.7.5 Measuring NT-pro BNP***
*Consider measuring NT-pro BNP (N- terminal pro-B-type natriuretic peptide) as apart of a treatment optimization protocol* ***ONLY IN SPECIALIZED*** *care setting for people* ***AGED UNDER 75*** *who have* ***Heart Failure with reduced Ejection Fraction*** *and eGFR above 60ml/min/1.73 m2 [NICE:2018]*

## Methods:

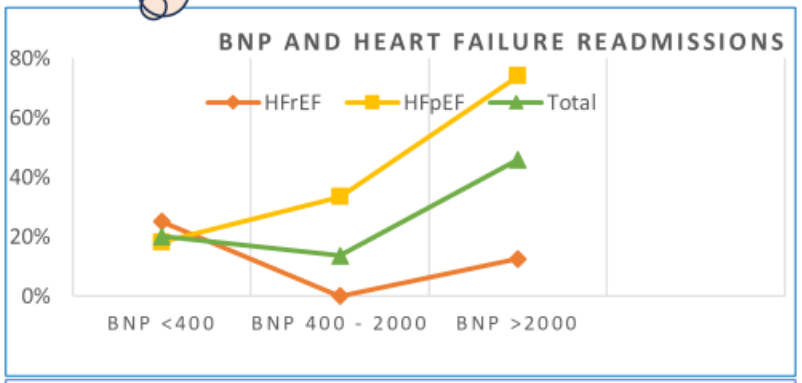
Initial NT-pro BNP evaluation on Heart failure admission + ECHO findings ( n = 88)

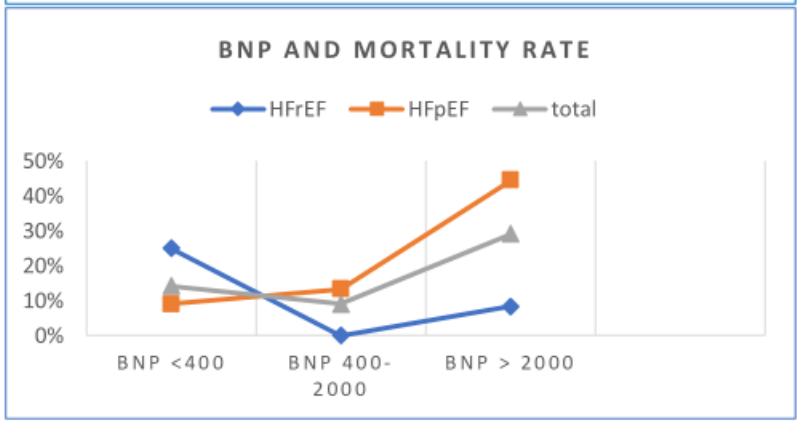
Assessing the follow up for more than 6 months for end points ( HF related deaths or readmissions )

Correlate the end points with the BNP trend that was done during the follow up

## Results:

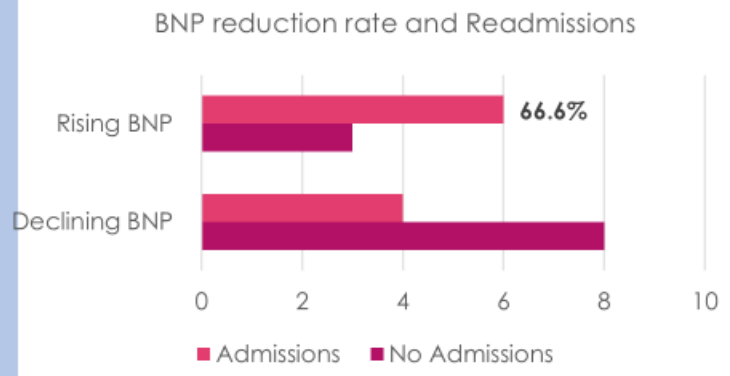
- Mortality rate (inpatient or outpatient) is 29.1% higher when admission NT Pro BNP is more than 2000 ng/dL
- Heart Failure readmission rate is 45.6% higher when NT-pro BNP rate is more than 2000 ng/L
- 66.6% re-admission rate with exacerbations with rising BNP in the follow up
- Re-admission rate was much lower with declining NT-pro BNP during follow up




## Conclusion: *(Time for a guideline update?)*

- Statistically powerful pilot study (P value for HFpEF =0.29 and P value HFrEF= 0.018 /with significance level=1) proving NT- pro BNP can be used as a prognostic biomarker in chronic heart failure in elderly population as it predicts the future mortality and heart failure exacerbations accurately
- Furthermore, this study emphasize the importance of **regular monitoring** of NT-pro BNP during the follow up as this aids preventing future morbidity and mortality by acting before the re-admission with HF exacerbation




**References** -1.NICE. Recommendations | Chronic heart failure in adults: diagnosis and management | Guidance | NICE [Internet]. www.nice.org.uk. 2018. Available from: https://www.nice.org.uk/guidance/ng106/chapter/Recommendations#monitoring-treatment-for-all-types-of-heart-failure

# Acute Hemorrhagic Encephalomyelitis Following Legionella Pneumonia: A Case Report

Eslam Abdelaziz[1] , Tom Button[1]
1. York and Scarborough teaching hospitals NHS foundation trust, UK.

NHS
York and Scarborough Teaching Hospitals
NHS Foundation Trust

## Introduction

Acute demyelinating encephalomyelitis (ADEM) is an immune mediated inflammatory disorder of the CNS involving widespread demyelination of the white matter of brain and spinal cord that occurs after a preceding infection or immunisation.

Acute hemorrhagic encephalomyelitis (AHEM) is a severe form of ADEM featuring severe inflammation, hemorrhage, and necrosis within the white matter of the brain.

## Clinical presentation

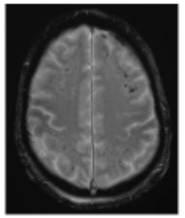
A 66-year-old male with no past medical history presented with fever, lethargy and coryzal symptoms 5 days following return from Croatia and Montenegro. He had type 1 respiratory failure requiring ICU admission, intubation and ventilation.

After being weaned off sedation, he had reduced consciousness and responsiveness (GCS 3) followed by generalised weakness (MRC grade 0 in all 4 limbs)

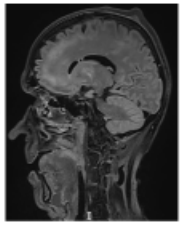
## Investigations

- Legionella urinary antigen positive.
- CT head suspicious for septic emboli.
- TTE, TOE were negative for infective endocarditis.
- CSF analysis and viral PCR were negative.
- MRI head findings consistent with AHEM as seen in figures 1-3.

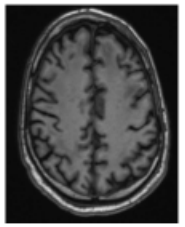
Microhaemorrhages on susceptibility weighted imaging → Figure 1



Diffuse white matter changes on T2 flair images as might be seen in ADEM → Figure 2



Hypo intensity on T1 images → Figure 3



## Treatments and outcomes

- 3 days of IV methylprednisolone resulting in improvement in GCS from 3 to 11.
- Followed by 5 days of plasma exchange resulting in improvement in power to MRC grade 3.
- Oral steroids.

The patient gradually improved to GCS 15 and being independently mobile and was discharged for ongoing physiotherapy.

## Discussion

- AHEM is more common in children/ young adults.
- There are reports of ADEM following legionella pneumonia but not of AHEM.
- We are presenting a rare case of AHEM following legionella pneumonia in a 66-year-old gentleman who was managed with high dose steroids and plasma exchange with good outcomes.

The Dudley Group
NHS Foundation Trust

# A rare variant of Broken heart syndrome, Reversed Takotsubo cardiomyopathy associated with intraoperative stress

**Presenter:** ***Fahad Lakhdhir*** **, Dudley Group NHS Foundation Trust, United Kingdom**
**Co author :** ***Zakirullah Khan***

**Presented at RCP Med+ 2024**

## Introduction

Stress cardiomyopathy or takotsubo cardiomyopathy is defined by a tractable systolic dysfunction of the left ventricle in the absence of
underline CAD. It presentation is linked with high level of emotional anxiety and is also known the Broken Heart Syndrome.
The usual presentation is apical ballooning, which is demonstrated on echocardiogram. It is very astonishing to see that this syndrome can present
with different patterns of LV systolic involvement. These diverging patterns of takotsubo can be associated with different clinical scenarios
and with different triggers of stress.

## Case Presentation

Here we present a case of reverse takotsubo cardiomyopathy. An 41 year old female electively admitted for melanoma removal surgery she was not given any pre induction medication and as soon she was induced she dropped her blood pressure and heart rate and went into cardiac arrest. CPR was started ROSC achieved, ecg was showing normal sinus rhytm with no signs of ischemia, echo showed signs of unusual distribution of RWMAs basal to mid inferior and basal septal segments were hypokinetic. Interestingly, all apical segments were well- preserved, with EF of 35 %. Three days after she also underwent MRI heart with gadolinium enhancement, which showed near normalization of LV systolic function of around 54%, with high uptake in T1 and T2 image which was sparing the apical segments with no signs of myocardial LGE. This study, which was then co-related with echo images, confirmed the diagnosis of this very rare presentation of reverse takotsubo cardiomyopathy.

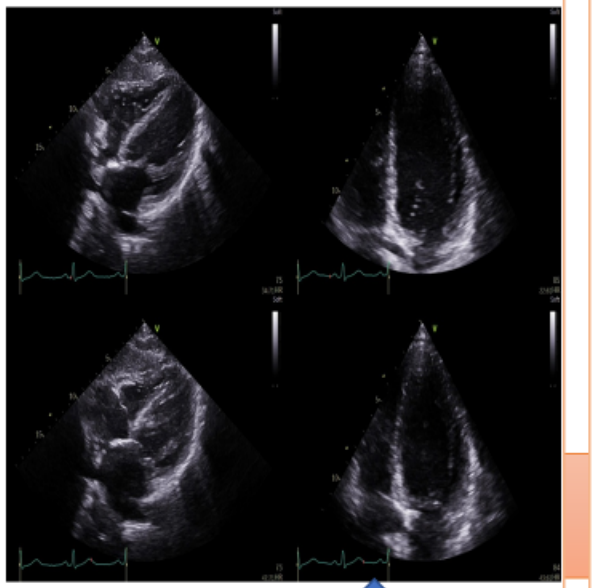


**Figure 1**: *(echo subcoastal and apical diastolic and systolic phase)*

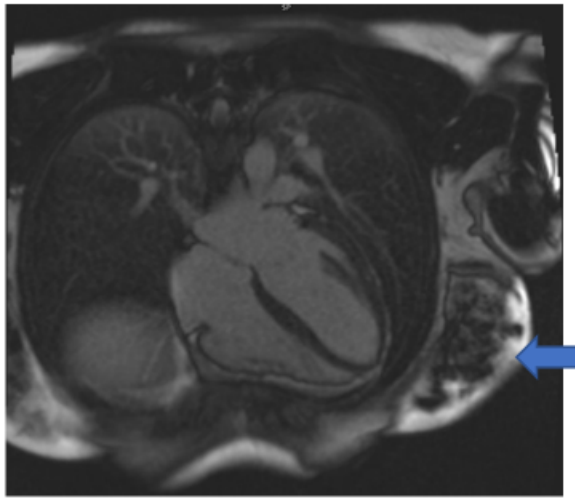


**Figure 2**: (MRI heart showing no Late gadolinium enhancement)

## Discussion

This a rare case of stress-related cardiomyopathy also defined as reversed or inverted takotsubo. This is due to the detection of basal hypokinesia as compare to the usual variant with apical hypokinesia. This variant of takotsubo is said to occur in less then 2% of patients [1]Stress-induced cardiomyopathy, or takotsubo syndrome, is thought to be triggered by elevated catecholamine levels, causing vascular spasm in response to severe emotional or physical stress. [1]The variability in the location of hypokinesis may be attributed to the uneven distribution of adrenergic receptors within the heart muscle. Data from the International Takotsubo Registry (ITR) suggests that physical stress is a more common precipitating factor (36%)than emotional stress (27.7%). Emotional stress triggers are more frequent in females, while males are more likely to experience takotsubo after physical stress.[1]. Reverse takotsubo tends to occur in younger individuals, with an average age of 36 years compared to 62 years for other types, as noted in a study of 60 patients.[2] [3]. Similarly, in our case the reason of cardiomyopathy was patient preoperative anxiety and intraoperative stress, which was also evident when she was undergoing the MRI heart as well.

## References

1.Templin C, Ghadri JR, Diekmann J, Napp LC, Bataiosu DR, Jaguszewski M, et al. Clinical Features and Outcomes of Takotsubo (Stress)
Cardiomyopathy. New England Journal of Medicine. 2015 Sep 3;373(10):929–38.
2.Ramaraj R, Movahed MR. Reverse or Inverted Takotsubo Cardiomyopathy (Reverse Left Ventricular Apical Ballooning Syndrome)
3.Robles P. Reverse or inverted apical ballooning in a case of refeeding syndrome. World Journal of Cardiology. 2015;7(6):361..

The Dudley Group
NHS Foundation Trust

# Monckerberg's arteriosclerosis: a rare cause of unilateral leg swelling

**Presenter: *Fahad Lakhdhir*, Dudley Group NHS Foundation Trust, United Kingdom**

**Presented at RCP Med+ 2024**

## Introduction

Monckeberg's atherosclerosis is a rare, progressive disease, first identified by Johann Georg Mönckeberg's in 1903.

The pathophysiology of the disease is not well-established.

However, progressive stiffing of the internal elastic layers of arterioles leads to left ventricular hypertrophy and systolic hypertension, enhancing cardiovascular disease risk.

## Case Presentation

An 18-year-old male with the complaint of progressive Right foot swelling for one week, with no history of pain, presented to the ER Blood pressure was noted to be high 160/90, and Pedal edema was appreciated, extending up to the shins and pitting.

In addition, there were multiple, hard, non-tender swellings of varying size in the bilateral submandibular, neck, left supraclavicular region, in the upper and medial aspect of bilateral elbow joints, and the popliteal area bilaterally.

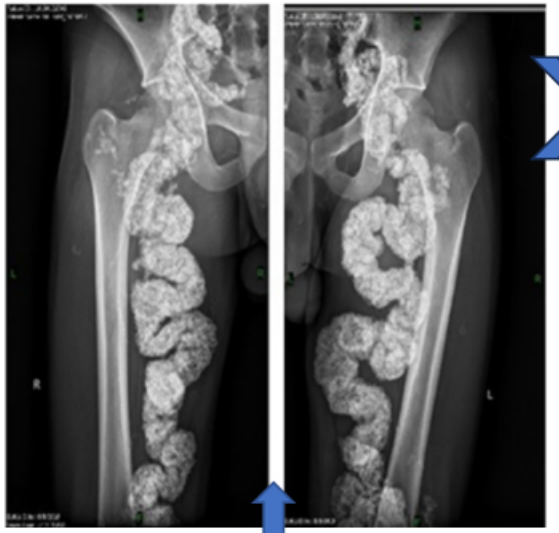


**Figure 1**:*X- ray of the lower limb revealed severe calcification in major vessels and dilated calcified arteries.*

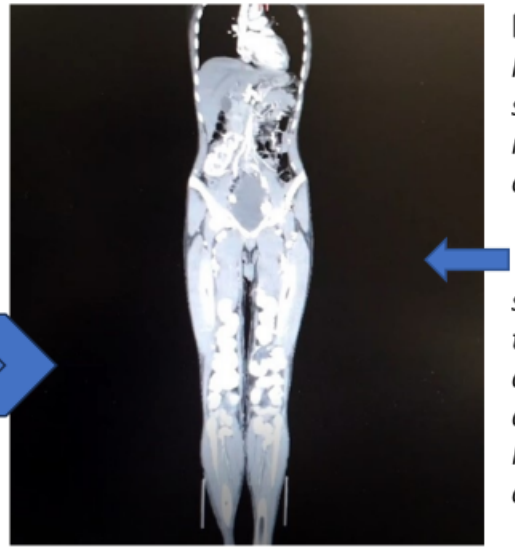


**Figure 2**:*CT Angiogram showed Multiple dilated tortuous and heavily calcified mid-caliber arteries diagnostic of Mönckeberg's calcification*

## Discussion

Monckeberg's arteriosclerosis is a rare disease with a prevalence of <1% [1], resulting in progressive stiffness, loss of elasticity of the vessels and increase risk of cardiovascular disease [2] proposed pathogenesis osteogenic differentiation of resident or circulating calcifying vascular cells causing active calcification and bone formation [3] diseases like diabetes, CKD and VKA shown to accelerate vascular calcification [4].
Few cases of Monckerberg's disease presented with critical lower limb ischemia [5] and severe obstructive sleep apnea.

## References


1. Castling B, Bhatia S, Ahsan F. Mönckeberg's arteriosclerosis: vascular calcification complicating microvascular surgery. (1399-0020 (Electronic)).
2. Top C, Çankir Z, Şilit E, Yildirim Ş, Danaci M. Mönckeberg's sclerosis: An unusual presentation: A case report. Angiology. 2002;53(4):483-6.
3. Leopold JA. Vascular calcification: Mechanisms of vascular smooth muscle cell calcification. (1873-2615 (Electronic)).
4. Zazzeroni L, Faggioli G, Pasquinelli G. Mechanisms of Arterial Calcification: The Role of Matrix Vesicles. (1532-2165 (Electronic)).
5. San Norberto EA-O, Revilla Á, Vaquero C. Mönckeberg's Disease of the Lower Limb. (1938-9116 (Electronic)).

**Lemierre's Syndrome** is a rare (3.6 per 1,000,000) but potentially fatal (5%) condition.[1] Often caused by bacterium Fusobacterium necrophorum and characterised by septic thrombophlebitis of the internal jugular vein after oropharyngitis, with septic embolisation to organs.[2]

# Case Report: Lemierre's Syndrome

**Authors: F. Narrainen, R. Baral and V. Salema**
Queen Elizabeth Hospital, Woolwich. Lewisham and Greenwich NHS Trust

Part 1

**Case:** View detailed case with QR codes

Part 2

**Pathophysiology** - Commensal oral bacteria spread to the parapharyngeal space through mucosal breaks, invading peritonsillar vessels connected to the internal jugular vein. A thrombus with bacteria can form and release septic microemboli, causing abscesses and septic infarctions.[3]

**Key investigations** - Include CT neck with contrast (Peritonsillar abscess and/or internal jugular vein thrombus).[3]

**Key Management** - ASAP 4-6 weeks of antibiotics with anaerobic cover (e.g. Clindamycin and Metronidazole).[3]

**Key Differentials** - Viral pharyngitis. Infectious mononucleosis. Leptospirosis. Pneumonia. Intra-abdominal sepsis.[3]

**Key Learning Points:**

- Uncommon complication of a commonly encountered infectious presentation like sore throat.
- A high degree of suspicion is necessary particularly in patients with multi-systemic symptoms.
- Septic shock is the leading cause of death.

Key References

1. Hagelskjaer Kristensen L and Prag J. Lemierre's syndrome and other disseminated Fusobacterium necrophorium infections in Denmark. Eur J Clin Microbiol Infect Dis 2008;6(9):779–789.
2. Li HY, Grubb M, Panda M, et al . A sore throat: potentially life-threatening? J Gen Intern Med 2009;24:872–5.
3. Riordan T and Wilson M. Lemierre's syndrome: more than a historical curiosa. Postgrad Med J 2004;80:328–34.

BACTERIUM FUSOBACTERIUM NECROPHORUM

RAISED INFECTION MARKERS

HYPERBILIRUBINAEMIA
DERANGED LIVER ENZYMES
THROMBOCYTOPAENIA WITHOUT BLEEDING

## Radiograph

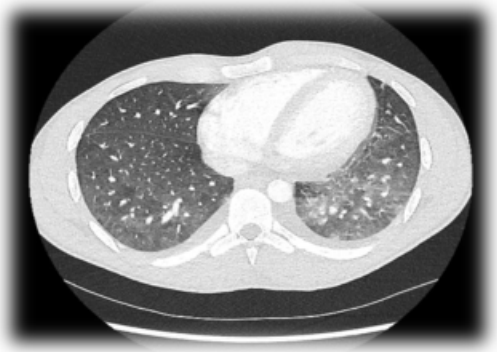
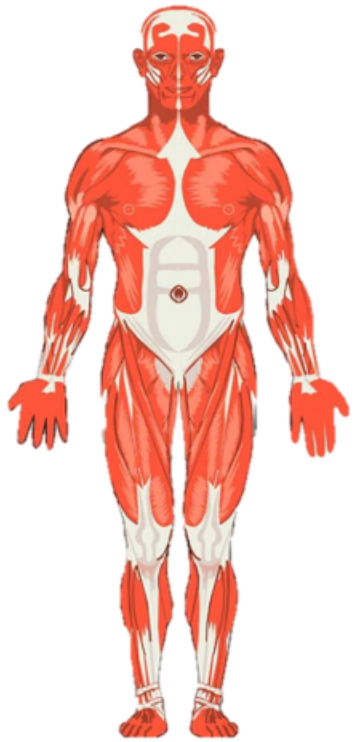


FIGURE 1: LUNG INVOLVEMENT: inflammatory opacities predominantly in the lower than upper lobes.

2nd DECADE OF LIFE



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SEVERE TONSILITIS / PHARYNGITIS

SWOLLEN and TENDER NECK

HEADACHE and NECK STIFFNESS

DRY COUGH and pleuritic chest pain

THROMBOPHLEBITIS OF INTERNAL JUGULAR VEIN and/or PERITONSILLAR ABSCESS

90 60 mmHg

HYPOXIA

FEVER AND RIGORS

## Additional Possible Findings[3]

- NAUSEA AND VOMITING
- SEPTIC SHOCK
- Septic arthritis
- Infective endocarditis
- Pleural effusions or empyema
- Skin/Soft tissue abscesses
- Tender cervical lymphadenopathy
- Other Gram ve- Bacterium

Prevalence >70% | Prevalence 40-70% | Prevalence <40%

Symptoms in our case will be **CAPITALISED AND UNDERLINED**[3]

Royal College of Physicians

NHS Lewisham and Greenwich NHS Trust

# Improving Doctors' Efficiency and Accuracy in Ordering a Liver Screen at Homerton University Hospital; A Quality Improvement Project.

**Dr Francesca Morelli, Dr Hannah Hornby, Dr Nora Thoua - Homerton University Hospital, Homerton Healthcare NHS Foundation Trust**

Homerton Healthcare NHS Foundation Trust

## Aims

1. To create a liver screen order set on the Electronic Patient Record (EPR) to improve doctors' efficiency and accuracy.
2. To reduce the number of unnecessary tests ordered.

## Background:

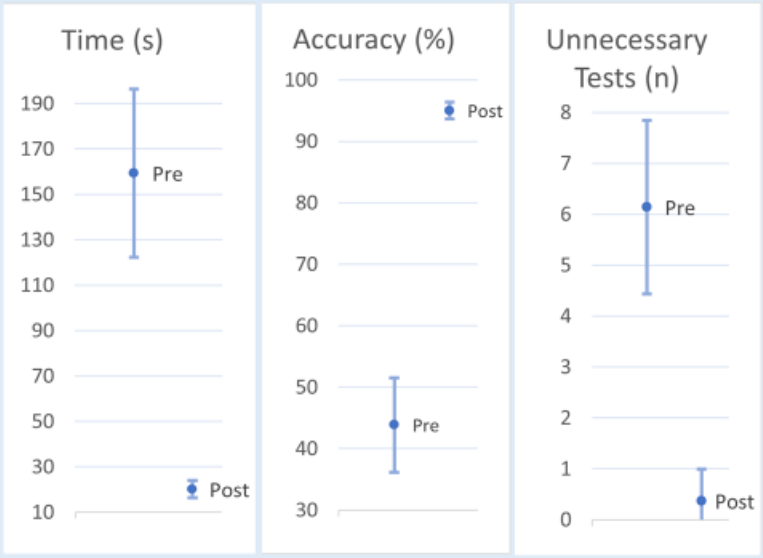
Abnormal liver function tests (LFTs) are often non-specific and can produce a wide differential. The British Society of Gastroenterology (BSG) has developed a guideline to systematically investigate abnormal LFTs.[1] This was not previously being followed at Homerton University Hospital, likely due to lack of awareness of this guideline and difficulty in identifying the correct tests on EPR.

## Methods

Pre-intervention data was collected by asking doctors to order a liver screen on EPR in a simulated scenario. Progress was timed and a record kept of tests ordered, calculating accuracy compared to BSG guidelines. The tests requested which were not clinically indicated were also recorded.
A liver screen order set was then introduced to EPR and the simulation repeated, measuring the same outcomes. Statistical analysis was carried out utilising unpaired T-tests.

| | Pre | Post |
|---|---|---|
| Sample size | 21 | 19 |
| FY1s | 13 (62%) | 14 (74%) |
| SHOs | 8 (38%) | 5 (26%) |

| | *NOTE* - Please use for Acute Hepatitis |
|---|---|
| ☑ | Acute Hepatitis Screen |
| ☑ | Liver Function Test LFT |
| ☑ | Aspartate Transaminase Serum |
| ☑ | Autoantibody Screen |
| ☑ | Ferritin Level |
| ☑ | Transferrin |
| ☑ | Alpha Feto Protein Tumour AFP Serum |
| ☑ | Immunoglobulins IgG A and M |
| ☑ | Coeliac screen |
| ☑ | Coagulation Screen Clotting |
| ☑ | Gamma Glutamyl Transaminase |
| ☑ | CMV IgG Antibody |
| ☑ | EBV VCA IgG |
| ☐ | US Liver |
| | *NOTE* - Please use for second line investigations |
| ☐ | Past Hepatitis Screen |
| ☐ | ANCA ELISA |
| ☐ | Alpha 1 Antitrypsin |
| ☐ | Caeruloplasmin Level |
| ☐ | Thyroid Function Test TFT |
| ☐ | Urine Copper |




## Results

The mean time to order a liver screen reduced from 159 (n=21, standard deviation (SD) 87) seconds pre-intervention to 20 (n=19, SD 8) seconds post-intervention. The mean accuracy improved from 44% (SD 18) pre-intervention to 94% (SD 3) post-intervention. The average number of unnecessary tests ordered reduced from 6 (SD 4) to 0.4 (SD 1). Overall, there was a statistically significant change in all 3 parameters ($p<0.0001$; 95% CI).

## Conclusion

Our intervention increased the efficiency and accuracy of doctors requesting a liver screen. It is therefore likely to reduce delay to appropriate investigations. It also saw a reduction in unnecessary tests ordered indicating potential for cost-savings. This highlights the importance of using electronic systems to their full potential to improve patient care and management. In the future, this same intervention could be implemented for screening tests for other conditions.

**References:** 1. Newsome PN, Cramb R, Davison SM, Dillon JF, Foulerton M, Godfrey EM, et al. Guidelines on the management of abnormal liver blood tests. Gut [Internet]. 2017 Nov 9;67(1):6–19. Available from: https://gut.bmj.com/content/67/1/6

# One for Me, None for You: Barriers to the Use of Local Anaesthetic for Arterial Blood Gas Sampling by Doctors

Dr. Gareth Campbell (IMT3 Doctor) & Dr. Banu Rudran (Respiratory Consultant) – Respiratory Department, Luton and Dunstable University Hospital

## Introduction and Objectives

Evidence from over 25 years ago supports British Thoracic Society recommendations for local anaesthetic (LA) use when obtaining arterial blood gas (ABG) samples in non-emergency scenarios.[1]

However, it seems that LA is rarely used in practice. Barriers to LA use have previously been described.[2] This study sought to determine whether these barriers remain over a decade later. We also explored attitudes to LA if doctors were patients, and patient experiences of LA.

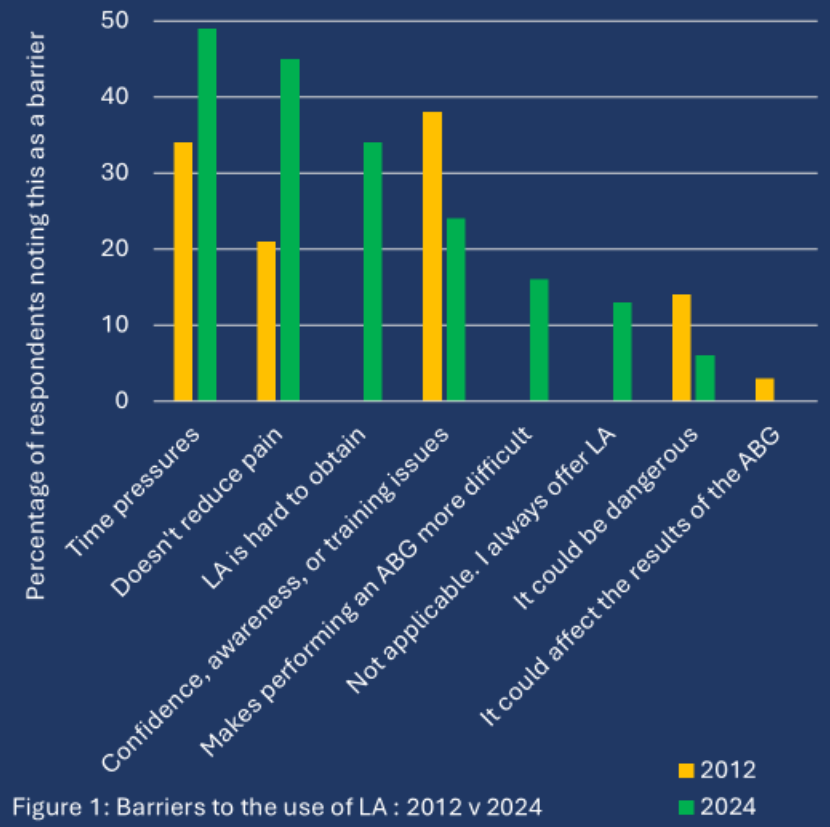



Figure 1: Barriers to the use of LA : 2012 v 2024

## Methods

Doctors at a university hospital were surveyed using an online nine-question form, allowing selection of potential "barriers" to their use of LA. Doctors were able to select multiple options from a pre-populated list of barriers, as well as adding their own. Information on grade, specialty, and frequency of ABG sampling was collected.

Patients were also surveyed on their feelings regarding use of LA and their experiences of ABGs, including pain perception on a numeric rating scale.

## Results

The doctor survey responses totalled 80, of which 61% were SHOs; 71% were medical trainees; and 85% performed ABGs regularly. Only 10% always offered LA and 71% admitted to having never offered LA. However, 41% stated they would specifically request LA should they ever need an ABG themselves.

Common barriers to LA included time pressures (49%) and the perception that LA/using two needles caused more or equal pain (45%). Figure 1 shows how these barriers have changed over time.

Our patient survey confirmed low use of LA. Nobody was offered it at every opportunity and only 12.5% had ever been offered it (Figure 2). 75% said they would at least consider LA if offered (Figure 3).

## Conclusion

Despite the evidence and guidelines, LA is still rarely offered. Barriers to using LA remain, although they have changed in frequency over the last decade. Tackling these barriers with enhanced training and consideration of alternative methods of blood gas sampling is needed. We must offer patients a better experience – as many doctors would want for themselves!

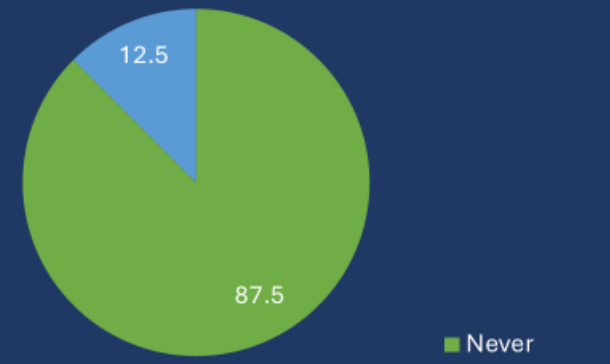



Figure 2: Responses from patients when asked how often they had been offered LA prior to an ABG (%)

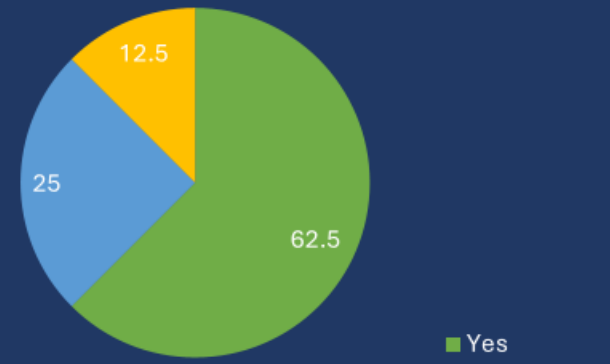



Figure 3: Responses from patients when asked if they would like to be offered LA prior to ABGs (%)

## References

1. O'Driscoll BR, Howard LS, Earis J, Mak V. BTS Guideline for Oxygen Use in Adults in Healthcare and Emergency Settings. Thorax. 2017 May 15;72(1).

2. Khan F, D'Silva A, Ahmed S, Patel E, Hassan S, Patel A. P236 The Use of Local Anaesthesia For Arterial Blood Gas Sampling - A Multicentre Survey. Thorax. 2012 Nov 19;67(Suppl 2):A167.3-A168.

# Bronchiolitis Obliterans in an adult male after admission with PVL- Staphylococcal pneumonia

Authors: S Nadeem, G Sargent, G Wood, N Ahmad

## Introduction

- **Bronchiolitis Obliterans (BO)** is a chronic, irreversible, small airways obstructive lung disease.[1]
- Here we discuss a rare case of an adult male who developed BO following admission with PVL-Staphylococcal pneumonia.

## Patient Details

- 51 years old
- Male
- Never smoked
- No respiratory history
- No occupational exposure to respiratory pathogens
- Normally fit and well

## Case

- Initially he presented to hospital **with spontaneous face and neck swelling.**
- He was admitted to ITU after acute and rapid deterioration for intubation and ventilation.
- Initial tests showed he was Influenza B +ve. However, subsequent sputum culture showed **PVL-Staphylococcus Aureus.**
- **CT Thorax** showed extensive bilateral consolidation scattered throughout the lungs, along with bilateral pneumothorax, pneumomediastinum and surgical emphysema (**Figure 1**).
- He was discharged 3 weeks later following bilateral chest drain insertion and treatment with Linezolid. A repeat chest x-ray showed almost complete resolution.
- Follow ups showed ongoing exertional breathlessness and episodic cough. CT scans initially were unremarkable for respiratory disease; however, 3 years later, BO was identified on CT (see **Figure 2**).
- Autoimmune, allergy and TB testing were **all negative**.

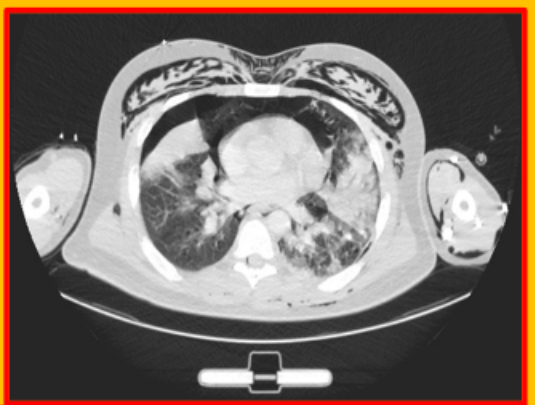


**Figure 1:** CT scan showing significant subcutaneous emphysema, right-sided pneumothorax and bilateral consolidation.

## Discussion

- Bronchiolitis Obliterans is a subtype of Bronchiolitis commonly diagnosed in children[3].
- In adults, this can be secondary to **infection**, post-haematopoietic stem cell transplantation, or post-lung transplantation[1].
- There have been non-infectious causes reported in adults including autoimmune diseases.[2]
- Common infectious causes are **viral**, including adenovirus and measles virus, or bacteria such as **Mycoplasma**[4].
- Literature searches have not revealed any previous cases of BO associated with PVL-Staphylococcus Aureus. **This case is therefore unique in aetiology.**
- Typical presentations are chronic exertional breathlessness and cough, atypical for asthma episodes[2,3].
- Chest x-rays are typically unremarkable, but HRCT shows **mosaic perfusion pattern with air trapping.**
- Spirometry frequently shows an **obstructive** airflow pattern[2,3].
- Most BO patients **respond poorly** to current treatment options, which include inhaler therapy, corticosteroids, macrolide therapy and cytotoxic agents.[3]

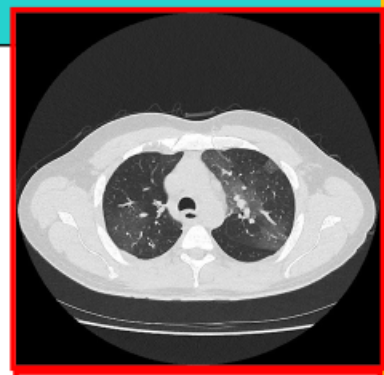


**Figure 2:** Diagnosis of Bronchiolitis Obliterans

## Conclusion & Take Home Points

- BO is a significant condition that can severely impact a patient's **quality of life**.
- It should be considered in patients with ongoing symptoms following **any** significant chest infection.
- HRCT is essential for diagnosis.
- Early recognition is important to aid diagnosis and specialist referral.

## Outcome and Follow Up

- The patient still remains breathless on exertion, limiting mobility and ability to work.
- Inhaler therapy was ineffective.
- Currently his condition is stable, so he is undergoing annual surveillance with spirometry.
- If deterioration is shown, he will be considered for **lung transplantation**.

## References

1. Kavaliunaite E, Aurora P. Diagnosing and managing bronchiolitis obliterans in children. Expert Rev Respir Med. 2019 May;13(5):481-488. doi: 10.1080/17476348.2019.1586537. Epub 2019 Mar 8. PMID: 30798629.

2. King TE Jr. Bronchiolitis obliterans. Lung. 1989;167(2):69-93. doi: 10.1007/BF02714935. PMID: 2494394; PMCID: PMC7102245.

3. Barker AF, Bergeron A, Rom WN, Hertz MI. Obliterative bronchiolitis. N Engl J Med. 2014 May 8;370(19):1820-8. doi: 10.1056/NEJMra1204664. PMID: 24806161.

4. Myers JL, Colby TV. Pathologic manifestations of bronchiolitis, constrictive bronchiolitis, cryptogenic organizing pneumonia, and diffuse panbronchiolitis. Clin Chest Med. 1993 Dec;14(4):611-22. PMID: 8313666.

# AN UNUSUAL CASE OF EOSINOPHILIA

(Dr. Geraldine C. Nsofor, Dr. Khin Lei Yee Win, Dr. Ayodeji Abdul)
Buckinghamshire Healthcare NHS Trust
Oxford University hospitals NHS Foundation Trust

## INTRODUCTION

Eosinophilia is defined as an eosinophil count above 0.5 x109/L [1].

Traditionally thought of as the body's defence against parasitic infestations and immune response to allergic reactions [2].

Found in abundance in organs such as the spleen, lymph nodes, thymus and digestive tract [3].

Migration of eosinophils into other tissues is seen in chronic eosinophil activation, resulting in organ damage via thrombus formation and fibrosis [4]

## CASE PRESENTATION

19-year-old male, normally fit and well with no significant past medical and travel history.

Presented with a week's history of fever, non-drenching night sweats and sudden onset of left sided abdominal pain unrelated to trauma.

He took no regular medications and had no known allergies.

Examination findings revealed enlarged inflamed tonsils, reduced air entry on the right side of chest and significant splenomegaly.

Blood results showed raised white blood counts of 123.4cells/mm3, eosinophils of 42.1cells/mm3 and raised CRP 275., initially given Meropenem.

Marked eosinophilia with some forms with single nucleus and triple nuclei with eosinophilic granules were seen on blood film.

Bone marrow aspirate showed an excess of eosinophils with a 5% blast population on immunophenotyping positive for CD10, WK CD19, CD34 and HLADR but negative for CD117. CD15, CD13 and CD33, no B-cells identified and a CD4:CD8 ratio of 1:1.

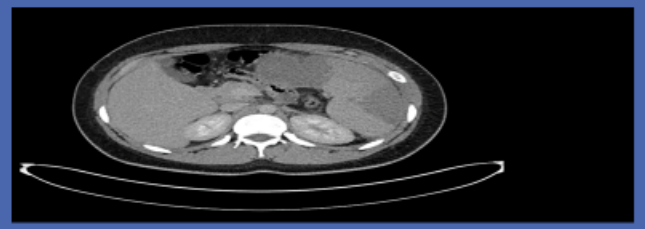
Bone marrow biopsy confirmed a diagnosis of acute lymphoblastic leukaemia.

ECG changes and an attendant troponin rise from 279 to 4828.5ng/mL.

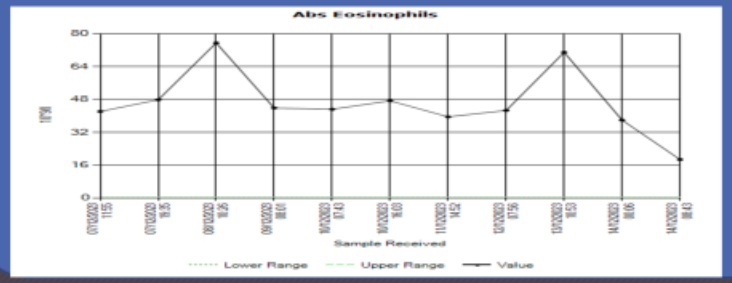
Intravenous Methylprednisolone 1mg/kg was introduced on day 5 for possible sequelae of eosinophilia, with Allopurinol and intravenous fluids.

He was initially started on Hydroxycarbamide, then started on chemotherapy for ALL.

Figure 1: CT image depicting marked splenomegaly with extensive hypo-attenuating subcapsular fluid.



Graph 1: Graph illustrating trend of eosinophilia on admission with a sharp drop after initiation of Methylprednisolone.




## CONCLUSION

ALL presenting with eosinophilia may be due to reactive eosinophilia or a leukaemia originating in a pluripotent lymphoid-myeloid stem cell with clonal eosinophils [5].

Eosinophilia can also be seen in parasitic infections, drug reactions, and Hodgkin's lymphoma.

Eosinophilia related organ damage like myocarditis in this case, is a life-threatening complication that requires prompt management and identification of the underlying condition.

## REFERENCES

1. Nauman M. Butt,1Jonathan Lambert,2Sahra Ali,3Philip A. Beer,4Nicholas C. P. Cross,5Andrew Duncombe,6Joanne Ewing,7Claire N. Harrison,8Steven Knapper,9Donal McLornan,10Adam J. Mead,11Deepti Radia,8andBarbara J. Bain12on behalf of the British Committee for Standards in Haematology. Guideline for the investigation and management of eosinophilia. British Journal of Haematology, 2017,176,553–572. https://doi.org/10.1111/bjh.14488.
2. Wen T, Rothenberg ME. The Regulatory Function of Eosinophils. Microbiol Spectr. 2016 Oct;4(5):10.1128/microbiolspec.MCHD-0020-2015. doi: 10.1128/microbiolspec.MCHD-0020-2015. PMID: 27780017; PMCID: PMC5088784
3. Kato M, Kephart GM, Talley NJ, Wagner JM, Sarr MG, Bonno M, McGovern TW, Gleich GJ. Eosinophil infiltration and degranulation in normal human tissue. Anat Rec. 1998 Nov;252(3):418-25. doi: 10.1002/(SICI)1097-0185(199811)252:3<418::AID-AR10>3.0.CO;2-1. PMID: 9811220.
4. Gleich, G.J. (2000) Mechanisms of eosinophil-associated inflammation. The Journal of Allergy and Clinical Immunology, 105, 651–663.
5. Chmielecki, J., Peifer, M., Viale, A., Hutchinson, K., Giltnane, J., Socci, N.D., Hollis, C.J., Dean, R.S., Yenamandra, A., Jagasia, M., Kim, A.S., Dave, U.P., Thomas, R.K. & Pao, W. (2012) Systematic screen for tyrosine kinase rearrangements identifies a novel C6orf204-PDGFRB fusion in a patient with recurrent T-ALL and an associated myeloproliferative neoplasm. Genes Chromosomes Cancer, 51, 54–65.
6. Trempat, P., Villalva, C., Laurent, G., Armstrong, F., Delsol, G., Dastugue, N. & Brousset, P. (2003) Chronic myeloproliferative disorders with rearrangement of the platelet-derived growth factor alpha receptor: a new clinical target for STI571/Glivec. Oncogene, 22, 5702– 5706.

# COST-UTILITY ANALYSIS OF DUPILUMAB VERSUS UPADACITINIB FOR ATOPIC DERMATITIS IN AUSTRALIA

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***Abbreviations**: AU$,* Australian Dollar*; ICER,* incremental cost-effectiveness ratio; *MMF,* mycophenolate mofetil; *QALY,* quality-adjusted life year*; WTP,* willingness-to-pay

## INTRODUCTION

Atopic dermatitis (AD) is a chronic inflammatory skin disease with substantial economic and clinical burden. Treatment has been revolutionised by therapies such as dupilumab and upadacitinib, though these drugs are markedly more costly than standard systemic immunosuppressants.[1,2]

## AIM

To evaluate the cost-effectiveness of dupilumab versus upadacitinib as first-line therapy for adults with AD.

## METHODS

A cost-utility analysis was conducted from an Australian healthcare sector perspective. A Markov model was constructed with 16-week treatment cycles over a five-year period. Patients were initiated on either first-line dupilumab (600mg stat then 300mg every 2 weeks) or upadacitinib 30mg daily. The cohort transitioned between controlled disease, uncontrolled disease, and background mortality.

Efficacy and utility values were derived from literature and real-world data at an Australian tertiary centre. Costs were obtained from public reimbursement schedules. One-way and probabilistic sensitivity analyses were conducted to assess the effects of uncertainty on parameter inputs. All modelling and analyses were performed using TreeAge Pro Healthcare, version 2024 R1.0.

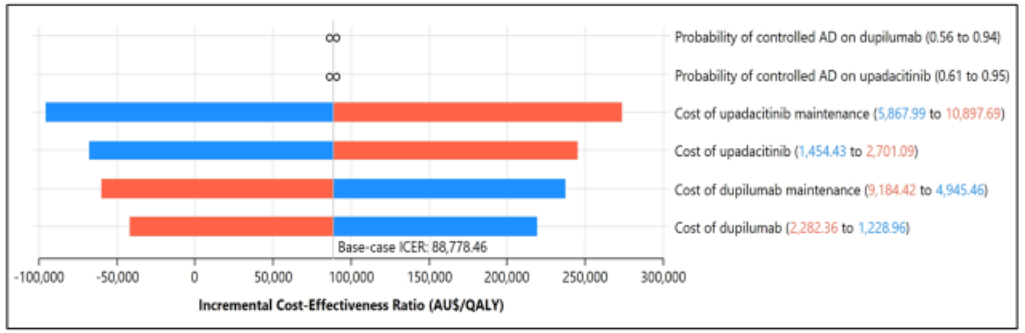


**Figure 1. Tornado diagram of the one-way sensitivity analysis**. The diagram is arranged by the parameters with the greatest to least impact on the ICER.

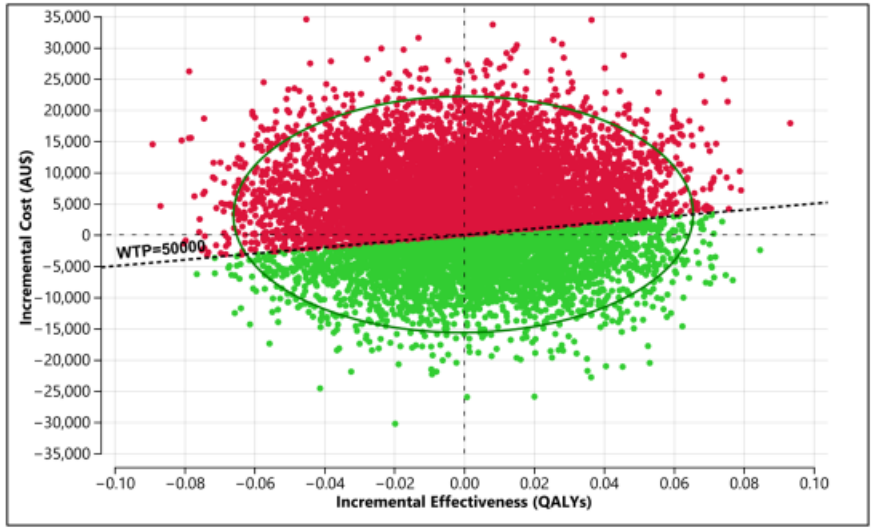


**Figure 2. Cost-effectiveness scatterplot**. The diagram depicts the proportion of iterations in which upadacitinib is considered more (green) or less (red) cost-effective than dupilumab with respect to the AU$50,000/QALY WTP threshold.

## RESULTS AND DISCUSSION

Compared to dupilumab, first-line upadacitinib gained 0.04 QALYs at an increased cost of AU$3,213 over the five-year horizon, resulting in an ICER of AU$88,778/QALY. The one-way sensitivity analysis found that these results were highly sensitive to variations in the probabilities of treatment success and cost inputs (Figure 1). In the probabilistic sensitivity analysis, upadacitinib was considered more cost-effective than dupilumab in 34.18% of the 10,000 iterations of the Monte Carlo simulation (Figure 2).

While the literature indicates that upadacitinib may offer superior efficacy to dupilumab[3-4], this comes with increased medication and monitoring expenses. Conversely, dupilumab may be a more cost-effective option, despite a potentially lower associated quality of life.

## CONCLUSION

While the ICER was greater than the standard AU$50,000/QALY threshold, the minimal differences in cost and effectiveness outcomes suggest that both treatments may be comparable options for first-line therapy.

## REFERENCES

1. Laughter MR, Maymone MBC, Mashayekhi S, et al. doi:10.1111/bjd.19580
2. Myers EM, Perche PO, Jorizzo JL, Feldman SR. doi:10.1111/dth.15849
3. Blauvelt A, Teixeira HD, Simpson EL, et al. doi:10.1001/jamadermatol.2021.3023
4. Silverberg JI, Hong HC-h, Calimlim BM, et al. doi:10.1007/s13555-023-01000-3

# Audit on quality standards for the management of alcohol-related liver disease

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1. Nottingham University Hospitals Trust, 2. Oxford University Hospitals Trust

## INTRODUCTION

Alcohol-related liver disease (ArLD) is the most common cause of liver related mortality in the UK. Hospital admissions have increased by 67% in the past 20 years.

In 2023, the British Association for the Study of the Liver (BASL) and British Society of Gastroenterology (BSG) published quality standards to support delivery of high-quality care for patients with ArLD.

## OBJECTIVE

This study aims to assess its compliance at Nottingham University Hospitals (NUH) NHS Trust.

## MATERIALS AND METHODS

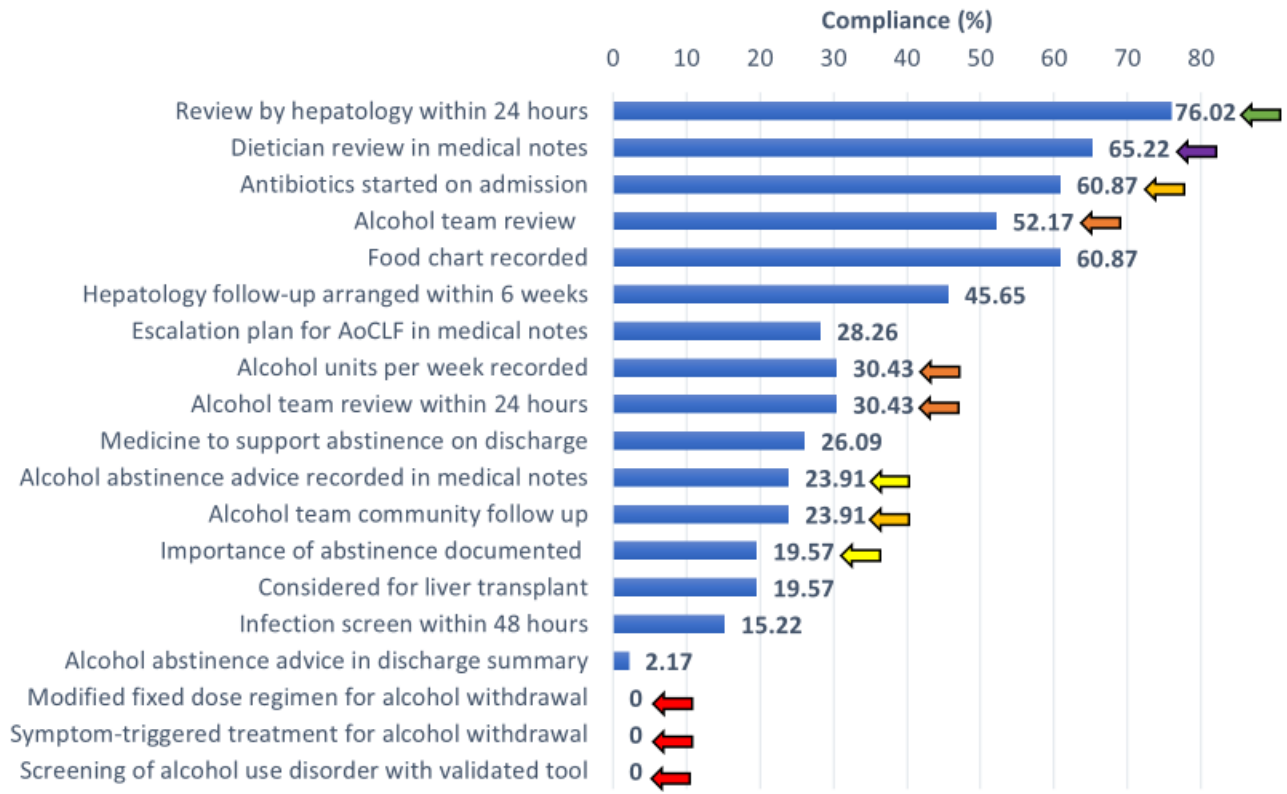
This audit's standards are the consensus recommendations from the BASL and BSG guidelines 2023.

This is a retrospective study of 46 patients admitted to NUH between June and November 2023 with a primary diagnosis of decompensated ArLD.

Criteria assessed include all those specified for assessment and management of patients with acutely decompensated ArLD

Average age of the patients was 53.5 years, 72% were male, and 68% were admitted through A+E.

## RESULTS - FIGURE 1: Standards compliance




There is no documented standard use of a validated tool for screening alcohol use disorder (AUD), or symptom-triggered treatment of alcohol withdrawal.

61% of the patients were reviewed by the alcohol team; only half of them (53%) within the first 24 hours of admission. Only 24% had an alcohol team community follow up arranged on discharge.

Seventy six percent were reviewed by hepatology team within 24 hours of admission. An infection screen was completed in 15% however 65% were started on antibiotics. Sixty five percent were reviewed by a dietician during admission. 59% of the patients had a hepatology follow up arranged before discharge, but only 45% were specified to be within 6 weeks.

## RECOMMENDATIONS

1. Use of an ArLD admission bundle
2. Promotion of a validated screening tool for AUD in the admission clerking proforma
3. Promotion of discharge summary proforma including abstinence advise and follow up appointments

## CONCLUSIONS

Management of patients with ArLD is outside the national standards. None of the patients were managed fulfilling all the quality standards.

Notably, 100% of patients with ArLD should be reviewed by a hepatologist within 24 hours of admission. In addition, the inclusion of standardised tools to ensure AUD is identified and managed accordingly early during admission and after discharge.

## ACKNOWLEDGEMENTS AND CONTACT

Thanks to the Hepatology department of Queen Medical Centre, NUH.

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# Changes in Physical Activity Before and After Acute Coronary Syndromes: A Literature Review Using Wearable Activity Trackers.

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Barts and The London School of Medicine and Dentistry

**Dr Nikhil Ahluwalia**
Barts Health NHS Trust

## Introduction

Acute coronary syndromes (ACS), including myocardial infarction (MI), remain a major cause of death globally.[1] Despite advances like PCI, survivors still face risks of ischemic cardiomyopathy, heart failure, and sudden cardiac death.[2]

Physical activity (PA) post-ACS improves outcomes, yet traditional tracking is limited. Wearable trackers, like smartwatches, objectively monitor PA, providing valuable recovery insights.

## Objectives

***This literature review aims to examine PA patterns before and after ACS interventions using wearable activity trackers.***

## Methods

A systematic search in Medline, Cochrane, Embase, and SCOPUS included studies using wearable devices to quantify PA (e.g., step count) in ACS patients (STEMI, NSTEMI, or unstable angina).

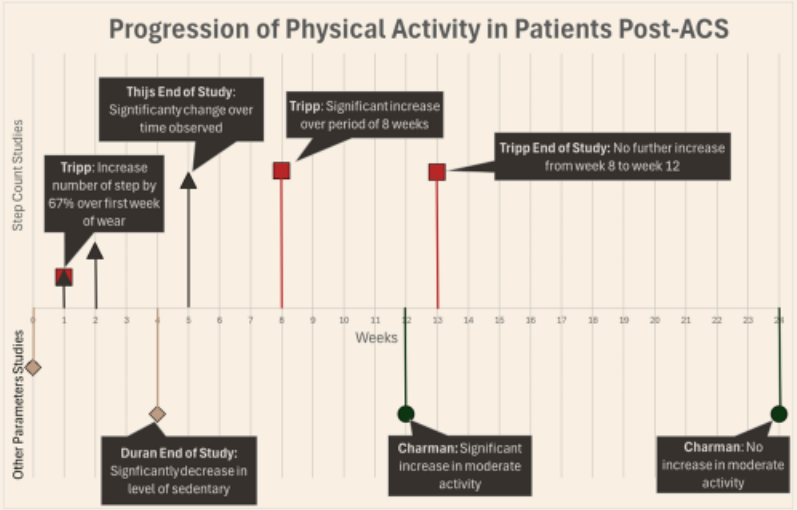
## Results

Out of 2042 studies initially identified, 7 met the inclusion criteria. Two studies examined PA patterns before ACS, while five focused on PA following interventions.

Post-intervention studies show a significant increase in PA over time, while pre-intervention studies indicate a general decline in PA leading up to ACS events.

**Table 1:** Summary of five studies investigating physical activity post-events.

| Author, Date | Patient Group | Physical Activity Parameters | Length of Measurement | Results |
|---|---|---|---|---|
| Tripp et al. 2020 | 1952 | Step count | 13 weeks after discharge | Median: 3730 steps at 1 week, 6230 steps at 13 weeks. Significant 67% increase in the first week, continued to rise over eight weeks. |
| Shajrawi et al. 2020 | 100 | Step count | 6 weeks after discharge | Mean: 6819 steps at 2 weeks, 7066 steps at 6 weeks. No significant difference between 2 and 6 weeks. |
| Thijs et al. 2019 | 22 | Step count | Five weeks after discharge | Median: 3715 steps at 1 week, 6012 steps at 5 weeks. Significant increase over five weeks. |
| Charman et al. 2023 | 58 | Average magnitude of wrist acceleration | 12 months after discharge | Light physical activity significantly increased from 123.1 to 152.2 min/day. Moderate activity significantly increased from 29.3 to 38.4 min/day at 3 months, then stabilized. No change in vigorous activity. |
| Duran et al. 2019 | 149 | Epoch count per minute level | Four weeks after discharge | Sedentary time significantly declined over the first month, with decreases each consecutive week. |




**Timeline of Physical Activity Progression Post-ACS**: This figure shows changes in physical activity levels post-ACS across multiple studies, with significant increases in the first 2 to 13 weeks and stabilisation after 3 months. Shapes represent studies: Square (Tripp et al.), Triangle (Thijs), Diamond (Duran), Circle (Charman)."

| Author, Date | Patient Group | Physical Activity Parameters | Initial and Pre-Event Physical Activity Measurement | Initial and Final Post-ACS Activity | Results |
|---|---|---|---|---|---|
| Burch et al. 2022 | 120 | Step count | Median: 2366 steps at 30 days prior to event, 4626 steps at 16 days prior to event, 2000 steps 1 day prior to event | Median: 1900 steps at 1 day, 3900 steps at 28 days | Median step count per day during the 30-day period post-MI was 3913. Greatest increases in activity occurred from week 1 to week 2 (26%), followed by significant increases over the month. Physical activity started to decline 16 days before arrhythmia |
| Sommer et al. 2023 | 5* (out of 74) | Hours/day of activity | Mean activity: 2.19 at 6 months prior to event, 2.09 at 1 month prior to event, 1.96 during the month of the event | Mean activity (hours/day): 1.88 at 1 month, 2.05 at 3 months | Significant decrease in activity one month prior to the event (over 10%), continued decline. No significant difference in mean activity three months after the event. |

**Table 2:** Summary of two studies investigating physical activity pre- and post-events

## Discussion and Conclusion

Wearable trackers effectively monitor physical activity (PA) during ACS recovery, with marked improvements seen in the first two weeks. Further research may clarify links between PA decline and ACS onset, potentially enabling early warnings. Integrating wearables into rehabilitation could improve outcomes and support long-term recovery insights.

1. World Health Organization. Cardiovascular diseases (cvds) [Internet]. Geneva: World Health Organization; 2021 [cited 2024 Sept 06]. Available from: https://www.who.int/news-room/fact-sheets/detail/cardiovascular-diseases-(cvds).
2. Berton G, Cordiano R, Palmieri R, Cavuto F, Pellegrinet M. Prospective history of long-term mortality and modes of death in patients discharged after acute coronary syndrome: the ABC-2 study on acute coronary syndrome. Clin Implic Int J Cardiovasc Res. 2014;3(2):8602. doi:10.4172/2324-8602.104172.

# Do We Need to Think the Same Way? A Quality Improvement Project to Improve Emotional Health in Doctors

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[1]University Hospitals of Derby and Burton NHS Foundation Trust ; [2]United Lincolnshire Hospitals NHS Trust ; [3]Nottingham University Hospitals NHS Trust

## Introduction

Self-reported cases of burnout are high among resident doctors, with **21%** at high risk of burnout and **51%** describing their work as emotionally exhausting.[1] This quality improvement project aimed to improve emotional wellbeing in Stage 1 Internal Medicine Trainees (IMTs) through coaching techniques, and to understand the barriers preventing their access to wellbeing initiatives.

## Methods

1. •A half day standalone wellbeing session was offered to regional IMTs (approximately 240)
   •2 sessions were run over 6 months
2. •Consultants acted as facilitators
   •Topics included; growth vs. fixed mindset, perfectionism, imposter syndrome and improving work life balance
3. •Pre-workshop questionnaire
   •Unique identifiers allocated to each participant
   •*n = 15*
4. •2-week questionnaire
   •*n = 8* (after removal of 4 responses due to incorrect unique identifiers)
5. •4-week questionnaire
   •*n = 4* (after removal of 1 response due to incorrect unique identifier)
6. •8-week questionnaire
   •*n = 4*

## Results

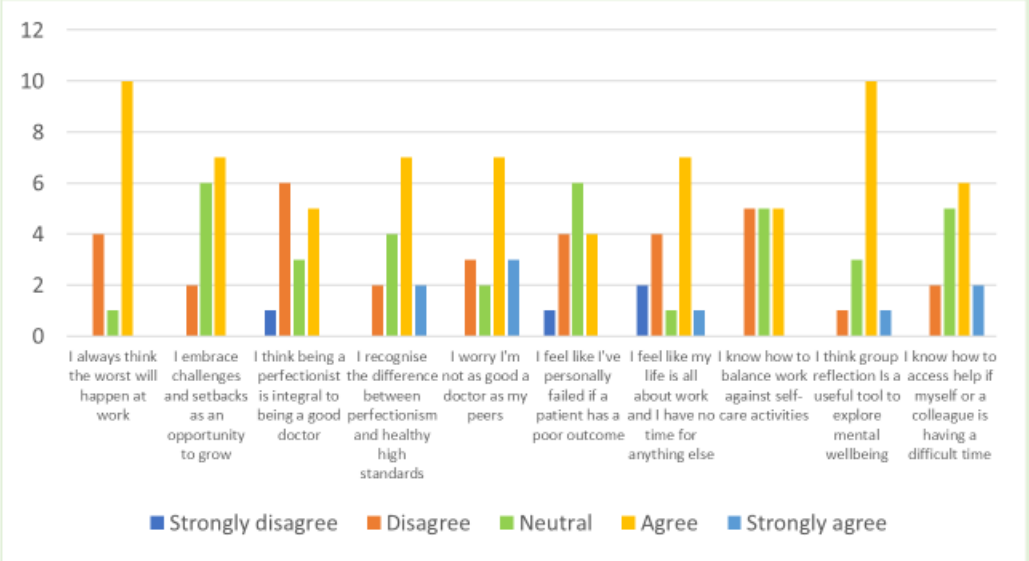


Fig. 1. Pre-workshop beliefs pertaining to wellbeing-related topics

- **80%** of participants agreed that group reflection is a useful tool to explore wellbeing, despite our concerns regarding anonymity
- Pre-workshop mean GAD-7 score was **8.4**, and **62.5%** of participants showed improvement in their GAD-7 score
- Positive feedback included having the opportunity to hear from peers and senior colleagues
- **82%** of participants requested more time and more frequent workshops to enable greater discussion and continued reflection

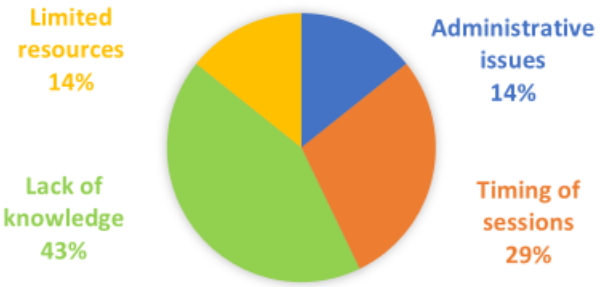


Fig. 2. Barriers faced by trainees attempting to access wellbeing resources

## Conclusion

This pilot project demonstrates the utility of a coaching approach to empower resident doctors to improve and maintain their wellbeing. Although the clinical workplace would benefit from changes to promote learning and wellbeing, this may also be a modest contribution to mitigate the risk of burnout amongst residents. These sessions demonstrate that the East Midlands region takes a proactive approach to IMTs' wellbeing and in achieving these aims, we hope to build a case to provide further wellbeing sessions for resident doctors.

## References

1. National Training Survey: 2024 results. https://www.gmc-uk.org/-/media/documents/national-training-survey-summary-report-2024_pdf-107834344.pdf [Accessed 1 September 2024]
2. Zhou, AY., Panagioti, M., Esmail, A., et al. Factors Associated With Burnout and Stress in Trainee Physicians: A Systematic Review and Meta-analysis. JAMA Netw Open. 2020 Aug 3; 3(8): e2013761.

NHS England Midlands

NHS University Hospitals of Derby and Burton NHS Foundation Trust

# Outcomes in Palliative Head and Neck Cancer: A Single Site Analysis

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## Introduction:

Approximately 12,200 new diagnoses of head and neck cancers (HNC) are made yearly in the UK [1]. Palliative management of head and neck cancers may incorporate immune checkpoint inhibitors, chemotherapy, surgery, and radiotherapy [2].

**Aim:** Review the outcomes of management for patients treated with palliative intent, in Torbay DGH, since the introduction of Pembrolizumab as a first line treatment option in 2020.

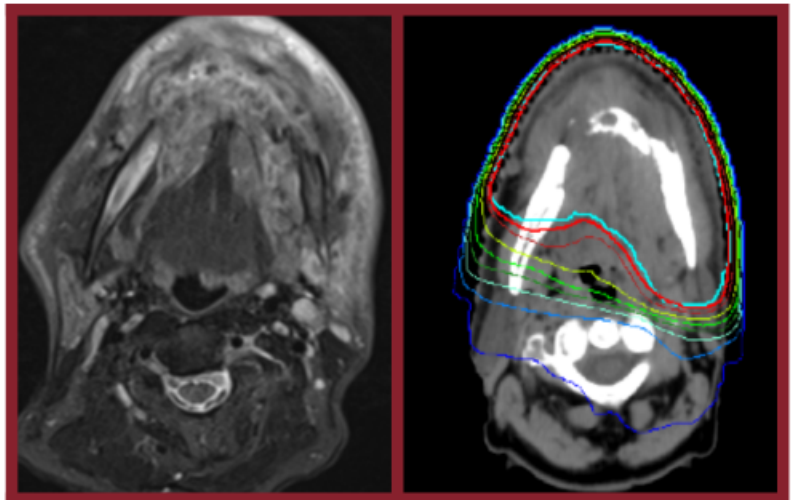

**Figure 1:** MRI scan (Left) of a patient treated with palliative RT, and their planning CT scan (Right).

## Materials and Methods:

1. **Patients Identified:** Palliative HNC patients between Jan 2020- Dec 2023 were identified (N=85, 66= Male/ 19 = Female)
2. **Retrospective Data Collection**: Key information recorded for each patient using electronic patient records: treatment modalities, date of decision to treat (DTT), date of death or last seen alive, as applicable.
3. **Data Analysed:** Median survival calculated

## Results:

- **Overall Median Survival = 5.4 months** (IQR 2.6-12.5)
- **Chemotherapy** had **highest median survival** of 11.4 months (N=11) (**Fig.2**)
- **27.6%** of patients receiving **1st line Pembrolizumab** were **alive** at time of analysis, the highest across all regimens
- 5 patients received **RT then Pembrolizumab** on progression; Median survival **10.8 months**
- 6 patients received **RT + Pembrolizumab as combined 1st line treatment**
  - RT Schedule varied (QuadShot/ 50Gy in 20#/ 20Gy in 10#)
  - **4 patients alive** at time of analysis (Range **11.5 – 28.1 months** since DTT)

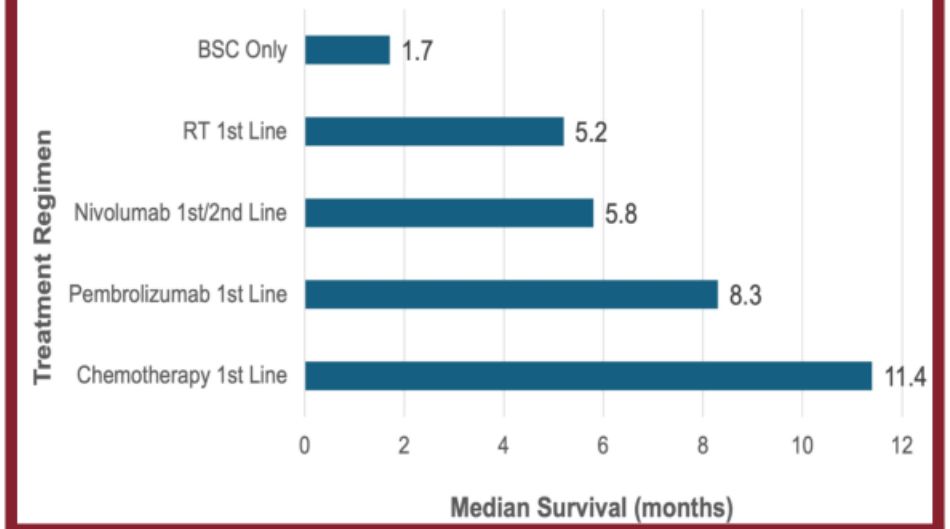


**Figure 2:** Median survival of the different treatment regimens identified. RT = Radiotherapy; BSC = Best Supportive Care.

## Conclusion:

- Patients with rapidly progressing/large burden of disease to consider **chemotherapy or RT/Pembrolizumab as first line treatment.**
- Pembrolizumab combined with palliative RT could improve outcomes over sequential treatments – **more data is needed** to support this.

**References:**
1. Creaney G, McMahon AD, Ross AJ, Bhatti LA, Paterson C, and Conway DI. Head and neck cancer in the UK: what was the stage before COVID-19? UK cancer registries analysis (2011-2018). *British Dental Journal*. 2022 Nov 11; 233(9): 787-793.
2. Harrington KJ, Burtness B, Greil R, Soulieres D, Tahara M, Castro Jr GC, et al. Pembrolizumab with or without chemotherapy in recurrent or metastatic head and neck squamous cell carcinoma: Updated results of the phase III Keynote-048 study. *Journal of Clinical Oncology*. 2022 July 6; 41(4): 790-802.

# Cavernous Sinus Thrombosis as First Presentation of Sjogren Syndrome in an asymptomatic patient: A Unique case.

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## Introduction

Cerebral venous thrombosis (CST) is known to be associated with autoimmune diseases such as SLE, Behcet, and Sjogren. Though this association is uncommon, it remains clinically significant due to the high mortality and morbidity rates. If left untreated or undiagnosed, thrombosis can lead to lifelong disabilities. While the transverse sinus and dural venous sinus are commonly affected, cavernous venous thrombosis (CvST) is particularly critical due to its anatomical relationship with cranial nerves III, IV, and V. Thrombosis in this area can impair these nerves, leading to facial and eye issues, with eye symptoms being more frequently reported. Aetiology is either septic with infection spreading from adjacent structures such as facial sinuses or skin or non-peptic such as trauma, inflammatory or prothrombotic conditions. The condition is particularly dangerous due to potential of spread of thrombus or infection to brain (due to valveless nature of these sinuses) causing embolic stroke or meningitis/encephalitis respectively.

Sjogren syndrome has also been known to be associated with thromboembolism including deep veins of the legs, pulmonary embolism as well as ischemic stroke (Mofors 2019 Bragoni 1994) . The association with cerebral venous thrombosis is rare but has been described in the literature (Zhang 2021). It usually presents in the beginning of the disease and can also present as a first symptom. Disease is often identified on examination and history. However, in a notable percentage of population, the classic sicca symptoms are absent (Baldini 2012). This often poses a diagnostic dilemma resulting in a wide array of tests for exclusion of other causes before reaching the diagnosis.

We present a case of Cavernous Sinus Thrombosis in an undiagnosed asymptomatic Sjogren patient. Since the CvST was the first manifestation of her Sjogren disease, the case posed a significant clinical challenge in terms of diagnosis. Additionally, the patient had a recurrent bout of cavernous venous sinus syndrome.

## Case Report

A 60-year old woman presented to the eye casualty with a two days history of headache, dizziness, left orbital pain, and lid swelling. Examination revealed conjunctival hyperemia, reduced left eye elevation, and a visual acuity of 5/6. Despite normal CT head results, a CT angiography indicated a filling defect on the left, suggestive of cerebral venous sinus thrombosis (CVST).

An MRI orbit later confirmed left cavernous sinus thrombosis. She was initially treated with anticoagulation using enoxaparin, which was subsequently switched to Apixaban on haematology advice.

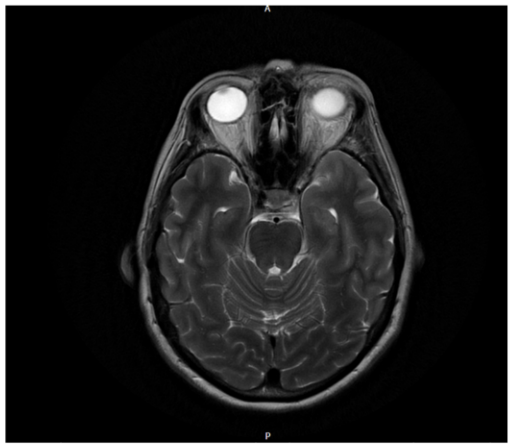
Following her discharge, the patient, who had no previously diagnosed medical conditions or apparent risk factors for CVT, underwent extensive serological testing. Given her ENT symptoms, a provisional diagnosis of Cogan syndrome was considered. Antibody testing, however, revealed positive ENA as well as Anti-SSA and Anti SSB antibodies. The antibody profile for antiphospholipid syndrome (anticardiolipin, beta-2 glycoprotein, and lupus anticoagulant) was negative, and the antibody profile was initially thought to be coincidental as the patient showed no symptoms of Sjogren syndrome at that point.

Her symptoms gradually normalized, and she was discharged on Apixaban, antiemetics, and painkillers. Two weeks later, she was readmitted with right eye swelling, chemosis, conjunctival erythema, right-sided diplopia, and right-sided deafness. Right-sided extension of the thrombus or orbital cellulitis was suspected; however, another CT venogram failed to show any clot.
Audiometry confirmed right-sided sensorineural deafness.
An MRI indicated inflammation in the right orbit.
The patient was treated empirically with antibiotics and IV methylprednisolone. Additional imaging, including a PET scan and a CTCAP, identified a small left internal jugular vein clot and esophageal thickening, respectively. An endoscopy revealed esophageal candidiasis,
which Was treated with fluconazole. The patient was discharged on Enoxaparin and oral prednisolone, along with other medications. Her right eye symptoms and deafness resolved slowly, and she was placed back on apixaban 5 mg BD by haematology.
Three months later, she was seen in the rheumatology clinic. Since she exhibited no signs of Sicca symptoms, Sjogren's syndrome was not considered the top etiology of her bilateral thrombosis. However, she did report joint pain a few weeks prior to the first presentation of CVST.

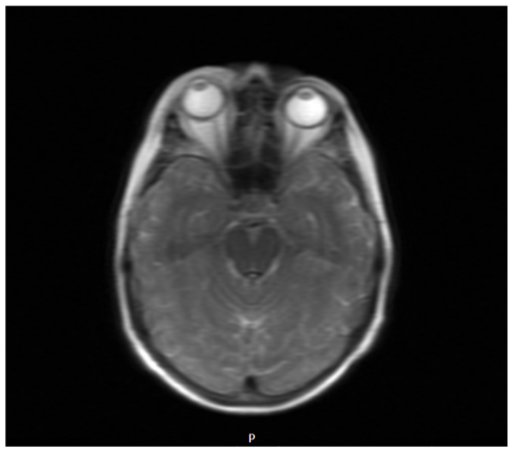
There were no mouth or genital ulcers, and she did not have retinal or corneal involvement, ruling out Cogan syndrome.
Further tests, including a Schirmer test, showed a positive result for the left eye. A right eye examination was abandoned due to discomfort.
After discussion in the vasculitis MDT, she was started on hydroxychloroquine 200 mg BD as prophylaxis for her thrombosi, in addition to steroids.
Although VEXAS was considered, it was eventually ruled out after haematology testing.
An ultrasound of the salivary glands showed reduced volume and heterogenous texture without increased vascularity, consistent with Sjogren's disease.
A formal bilateral Schirmer test at six months confirmed Sjogren's syndrome. She was started on Carmellose eye drops an d referred to the Sjogren's Specialist Center. Her anticoagulation was switched from Apixaban to warfarin, with an INR target of 2.5. The patient also began MMF 1 gram BD.
At a 10-month follow-up, an ENT clinic confirmed moderate to severe right-sided sensorineural hearing loss and mild-moderate left-sided hearing loss, attributed to autoimmune cause.
Her symptoms remain under control on MMF, prednisolone, and hydroxychloroquine.

## Sjogren Disease and Venous Thrombosis.

| Authors | Age | Thrombus Location | Sjogren's Symptoms | Clinical Presentation |
|---|---|---|---|---|
| Mercurio et all | 43 F | Left transverse sinus. | Dry mouth, dry eyes, recurrent tooth cavities. | Headache, nausea, focal symptoms, seizures. |
| Mercurio | 44 F | Left transverse sinus. | Mucosal dryness, arthralgia. | Recurrent otitis, headache, nausea, focal symptoms, seizures, |
| Ho et all | 50 F | Left transverse sinus. | No sicca symptoms, but positive anti-Ro/SSA, and biopsy with antiphospholipid syndrome. | headache, nausea. |
| Lang et all | 51 F | straight sinus, vein of Galen, Left middle cerebral vein, and inferior sagittal sinus. | Dry mouth. | Fever, headache, nausea, focal symptoms, altered awareness, |
| Urban | 41 F | Transverse sinus. | Myeloradiculopathy, no other sicca symptoms. | Focal symptoms, headache. |
| Our case | 60 F | Cavernous Sinus Thrombosis. | Negative initially, six months later, developed dry mouth. | Headache, dizziness, left Orbital pain, and lid swelling, with hearing loss. |



Oedema of left orbital fat and left eyelid



Right-sided periorbital fat stranding

## Recommendations

Always consider Sjogren's syndrome as a differential diagnosis in patients presenting with cavernous sinus thrombosis, especially when accompanied by other autoimmune features.

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# A Blur on the Hindsight: Anti-MOG associated Optic Neuritis

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## Introduction

Sudden onset visual blurring is a commonly presented symptom in acute medicine, depicting possible emergency. The differential list is quite vast ranging from common causes like Migraine, Stroke, Inflammation and Infections of the ophthalmological structures, Central Retinal Artery (or Vein) Occlusion (CRAO or CRVO), Arteritic ischemic optic neuropathies (AION) due to vasculitic processes, non-arteritic anterior and posterior optic neuropathies due to small vessel diseases, Optic Neuritis from Multiple Sclerosis (MS), to less common causes like Neuromyelitis Optica Spectrum Disorder (NMOSD) and Myeline Oligodendrocyte Glycoprotein- associated Antibody Disorder (MOGAD). When presented in combination with relative afferent pupillary defect (RAPD) and optic neuritis, the differential list becomes narrower with vasculitic processes and inflammatory causes being the top culprits . Scalp tenderness is another feature that carry diagnostic value and points in the same direction.

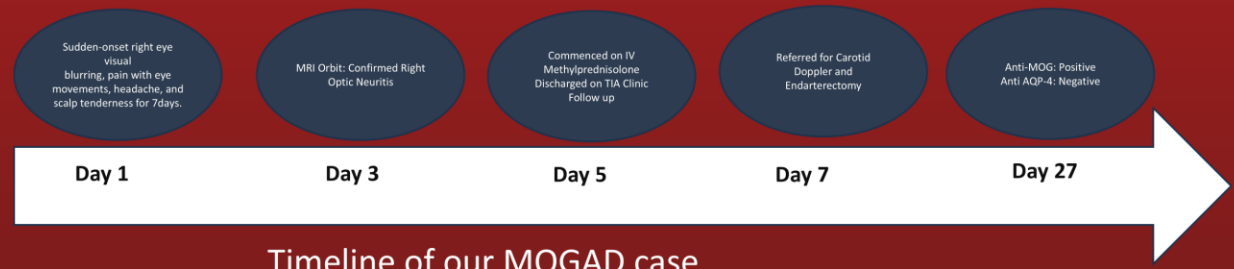
MOGAD is a newly established demyelinating disease, which shares some clinical features with NMOSD and MS. Myelin Oligodendrocyte Glycoprotein (MOG) antibody, the hallmark of this condition targets a glycoprotein (MOG) on the outer layer of myelin sheath. MOG-Ig which was earlier considered to be a subset of MS and later NMOSD has now been recognized as a separate condition termed MOGAD with distinct clinical phenotypes. The distinct histopathological, and radiological pictures as well as an absence of aquaporin-4 antibodies help distinguish this condition from MS and NMOSD. The commonest phenotype among MOGAD is Optic neuritis which can occur with or without myelitis, encephalitis and/or brain stem involvement. We report a case of MOGAD, mimicking Giant Cell Arteritis (GCA), which is diagnosed on antibody profile. Our case emphasises on considering this rare aetiology when treating patients with headache and visual loss.

## Case Report

A 69-year-old female presented to our medical ambulatory unit with one day's history of sudden onset right eye visual blurring on waking up from sleep along with 7 days right sided eye pain and headache. Her past medical history included hypertension, dextrocardia, normal tension glaucoma and previous transient ischaemic attack (TIA). She was on long term clopidogrel, along with anti-hypertensives. On examination, she had right eye reduced visual acuity of 6/36, RAPD and right sided scalp tenderness. However, there was no jaw claudication, fever, fatigue, joint pain/stiffness, or any focal neurological deficit. Urgent blood tests revealed normal full blood counts, normal liver and kidney functions, and normal plasma viscosity with C Reactive Protein of <5 mg/L. Lumbar Puncture revealed normal CSF cytology and no oligoclonal bands. Based on initial suspicion of GCA, the case was also discussed with rheumatology on-call team who deemed it to be unlikely with negative inflammatory markers and normal plasma viscosity. Further ophthalmology review confirmed RAPD in the right eye, indicating damage to the optic nerve and cherry red spots on retina suggesting retinal artery occlusion.

With ongoing diagnostic dilemma, patient was admitted for five days course of intravenous methylprednisolone after neurology consultation. Extended serological markers were sent for blood borne viruses, autoimmune markers and vasculitis screening. An urgent MRI head ruled out any central lesion and demonstrated small vessel ischaemic changes justifiable with patient's background of hypertension. Subsequent MRI orbit confirmed optic neuritis.

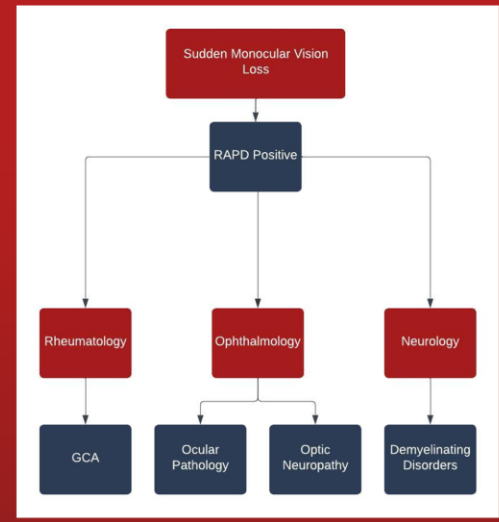
However, with previous history of TIA and a carotid bruit on examination, the possibility of ischemic optic neuritis could not be ruled out. On day five, after completion of steroid therapy with mild subjective improvement in vision, patient was discharged home with outpatient TIA clinic follow up. In TIA clinic, she was started on dual anti-platelet therapy with Aspirin, Clopidogrel and referred for carotid endarterectomy due to presence of 50% right internal carotid stenosis as evident on doppler ultrasound. By week four, the results of autoantibodies were available revealing positive Anti Myelin Oligodendrocyte Glycoprotein (MOG) with negative Aquaporin-4 antibodies. Patient had a complete resolution of symptoms at this point with subsequent negative MOG antibodies.




Timeline of our MOGAD case

## Conclusion

Visual disturbances are a common presentation in acute medicine with wide array of differentials and this case emphasises the value of taking anti-MOG antibody tests into account. A comprehensive diagnostic strategy with early specialty- based recommendations can aid in better treatment outcome for optic neuritis.




## Key Learning Points

- MOGAD is a relatively new concept among the other demyelinating
- Neurological Diseases causing optic neuritis.
- Optic Neuritis can mimic GCA and stroke
- Early specialty referral and incorporating their advice in diagnostic process
- Testing for Vasculitis and antibody screen is important in such cases

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# Improving Management of Upper Gastrointestinal Bleeding at a District General Hospital

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## BACKGROUND:

- Acute Upper Gastrointestinal Bleeding (AUGIB) is a common medical emergency - estimated mortality rates 2 to 15 %.
- Can manifest as hemetemesis, melena or coffee ground vomiting.
- Patients should promptly be assessed, risk stratified, resuscitated and managed appropriately in lines with British society of Gastroenterology (BSG) guidelines.

## OBJECTIVES:

The aim of this project is to assess:

- If patients admitted with UGIB signs and symptoms are being managed in accordance with the BSG guidelines.
- If the AUGIB bundle from BSG is being used.

## METHODS:

- Retrospective study of all admissions through ED (Emergency Department) and AMAU ( Acute Medical Assessment Unit) with probable AUGIB in May.
- Data were collected on Digital Rectal Examination (DRE), Glasgow Blatchford score (GBS) calculation, initial treatment given, management of anticoagulation, endoscopy and use of the UGIB bundle.
- Staff survey conducted to assess current practice in management and knowledge regarding Bundle existence.

## RESULTS:

- Sample size 43 – Male 62%, Female 38%. Average age - 52.5 years.
- Fig 1, 2 and 3 shows percentage of patients having DRE done vs GBS calculated; IV fluids vs RBC transfusion given; Endoscopy requested vs done in the first 24 hours.
- Coagulation profile checked in 40% while anticoagulation stopped appropriately in 47%. BSG AUGIB bundle not used.
- Staff survey showed gap in knowledge regarding BSG AUGIB Bundle existence and appropriate management.

**Fig.1**

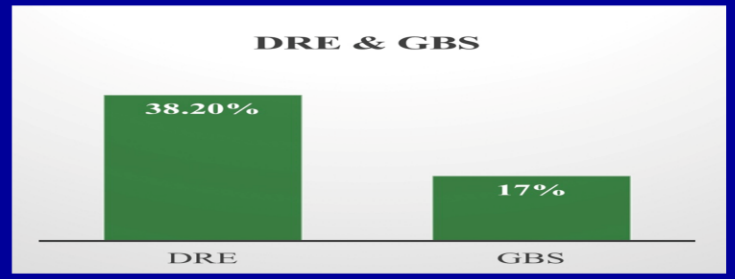



**Fig.2**

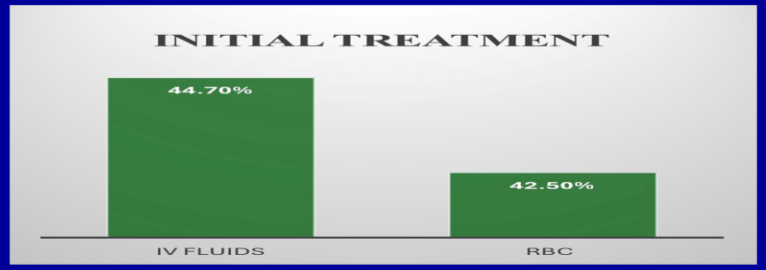
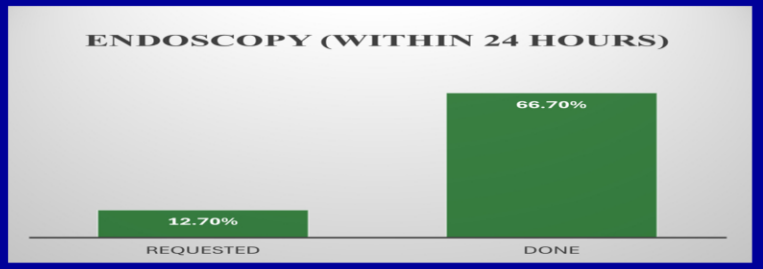



**Fig.3**




## DISCUSSION:

Reflections – Majority of the patients were not risk stratified and there was a significant delay in requesting followed by performing endoscopy within 24 hours, particularly over the weekend.
Limitations – Missing data on patients transferred to other specialties. Exclusion of ward inpatients developing AUGIB.
Strengths – Benchmark of a validated set of guidelines.

## CONCLUSION:

- AUGIB in acute settings is currently being managed sub-optimally.
- National guidelines are not adhered to appropriately and doctors are less comfortable in managing AUGIB than expected.
- Implementation of the AUGIB bundle from BSG at the time of admission will improve patient management and outcomes.

## RECOMMENDATIONS:

- DRE needs to be done, and GBS needs to be calculated for all patients on admission.
- AUGIB bundle needs to be completed on admission.

Next Steps:
1. Email audit findings & recommendations to all. 2. Upload AUGIB Bundle to hospital intranet. 3. Re Audit in 12 weeks.

## REFERENCES:

1. Acute upper gastrointestinal bleeding in the UK: patient characteristics, diagnoses and outcomes in the 2007 UK audit. Gut.
2. British Society of Gastroenterology (BSG)-led multisociety consensus care bundle for the early clinical management of acute upper gastrointestinal bleeding. Frontline Gastroenterol.

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# Management of Hyperglycaemia in patients undergoing chemotherapy in Gwynedd Hospital, North Wales

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## BACKGROUND:

People with cancer are at an increased risk of developing new onset diabetes or hyperglycaemia, independent of an underlying diagnosis of diabetes, as well as worsening control of their pre-existing diabetes.

They often receive chemotherapy with glucocorticoids(mostly Dexamethasone/ prednisolone) pre and post treatment for hypersensitivity reaction prophylaxis and as an antiemetic.

Patient education in hyperglycaemia symptoms and monitoring blood sugar is vital and for persistently raised blood sugar, appropriate interventions are needed.

## OBJECTIVES:

The aim of this project is to evaluate whether, in patients receiving glucocorticoids as a part of the chemotherapy regimen, glucose levels are monitored regularly, and relevant measures are taken when necessary.

## METHODS:

This was a retrospective study involving 192 patients who received chemotherapy with dexamethasone from 1st to 31st August, 2023 at the Oncology department and local chemotherapy unit of Gwynedd Hospital, North Wales.

The following data was collected: Background of Diabetes, Venous blood glucose and/or capillary blood glucose before steroid treatment, Baseline and follow up HbA1c, Interventions and GP notification.

AUDIT STANDARDS:
The 'Joint British diabetes society for inpatient care' guidelines were referred to.

## RESULTS:

Out of 192 patients – 75% didn't have a past medical history of Diabetes or impaired glucose tolerance.

Venous plasma and capillary blood glucose were checked in 61% and 7% patients respectively.

Baseline HbA1c in 43% and follow up in 19% were checked.

Interventions and GP notifications were found in minimal number of patients.

Fig.1 – PMH of Diabetes

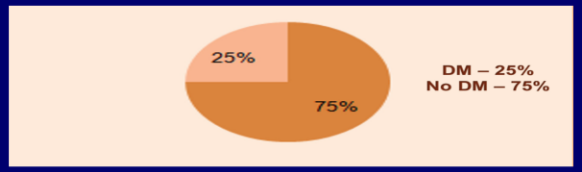
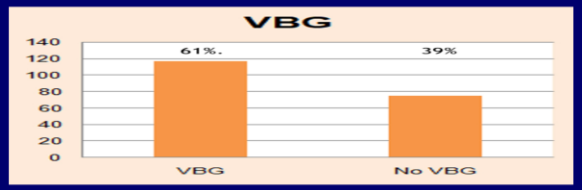



Fig.2 – VBG & CBG



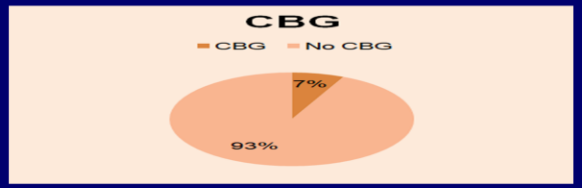
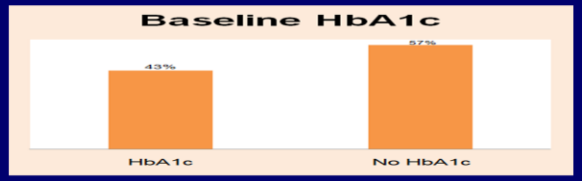
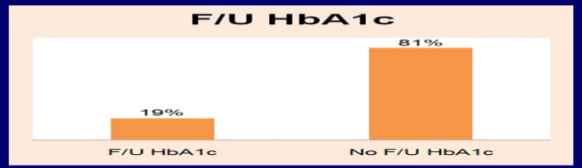




Fig.3 – Baseline & F/U HbA1c




## DISCUSSION:

Reflections - Glucose monitoring in cancer patients on repeated relatively high doses of corticosteroids in a DGH is suboptimal.

Limitations - Relatively small timeframe and less number of consultant oncologists, preventing broad generalisability to North Wales or the UK at large.
Technical difficulties in accessing capillary glucose (because of the EMR solution used locally).
Whenever available, limited information on whether venous plasma glucose was obtained with a sufficient fasting interval.

Strengths – Thorough analysis of all consecutive adult patients treated.
Benchmark of a validated set of guidelines.
Real practice analysis.

## CONCLUSION:

This study showed that suboptimal number of the patients had their venous plasma glucose and/or baseline HbA1c checked prior to treatment.

Monitoring for hyperglycaemia needs to be improved in order to meet the standard set by the guidelines.

## RECOMMENDATIONS:

1. Before starting GC therapy, check - A. Venous plasma glucose; B. Baseline HbA1c.
2. Venous plasma glucose to be checked before each steroid-containing Chemotherapy session.
3. Educating patients in symptoms of hyperglycaemia.
4. Getting Diabetes specialist nurse /Endocrinologist involved when necessary.
5. To notify the GP.

Next Steps:
1. Creating new blood set in electronic portal.
2. Re-Audit.

## ACKNOWLEDGMENT:

1. Doctors team involved in Data collection: Homagni Sikha Roy, Elen Sanpher, Saad Farooki, Marjan Ahmad, Nurul Aimi Binti Ismail, Lam Qi En, Sian Brown, Maher Nisa.
2. Supervising Consultant: Dr Pasquale Innominato.
3. Endocrinology Consultant: Dr Gideon Mlawa – Queens Hospital, Romford, London.
4. The Alaw (Oncology) day unit team, Gwynedd Hospital.

## REFERENCES:

1. The high incidence of steroid-induced hyperglycaemia in hospital. Diabetes Research and Clinical Practice.
2. Management of hyperglycaemia and steroid (glucocorticoid) therapy : a guideline from the Joint British Diabetes Societies (JBDS) for inpatient Care group. Diabetes Medicine.

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# Can Methylmalonic acid be used as a surrogate marker of Nitrous Oxide Abuse in order to facilitate focused Public Health campaigns in Birmingham?

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1. University Hospitals Birmingham NHS Foundation Trust; 2. Sandwell and West Birmingham NHS Trust

University Hospitals Birmingham NHS Foundation Trust

## INTRODUCTION

The UK recreational use of nitrous oxide ($N_2O$) has rapidly increased[1] leading to severe neurological sequalae[2], making this a serious public health concern[3]. A wide range of clinical presentations makes it difficult to estimate the number of users. Methylmalonic acid (MMA) levels is part of Association of British Neurologists (ABN) guidelines for N2O use work up[4]. Hence, gathering data on MMA requests can be used in identifying $N_2O$ abuse cases retrospectively.

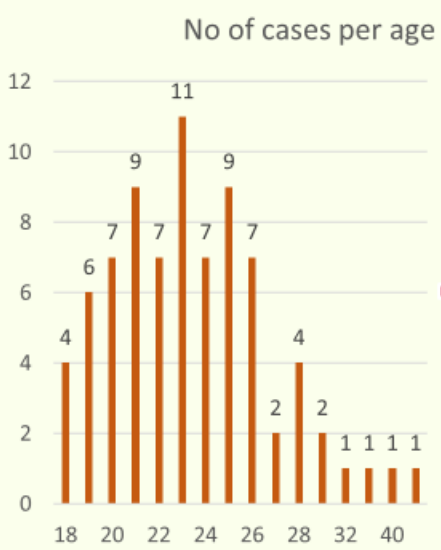
## AIMS

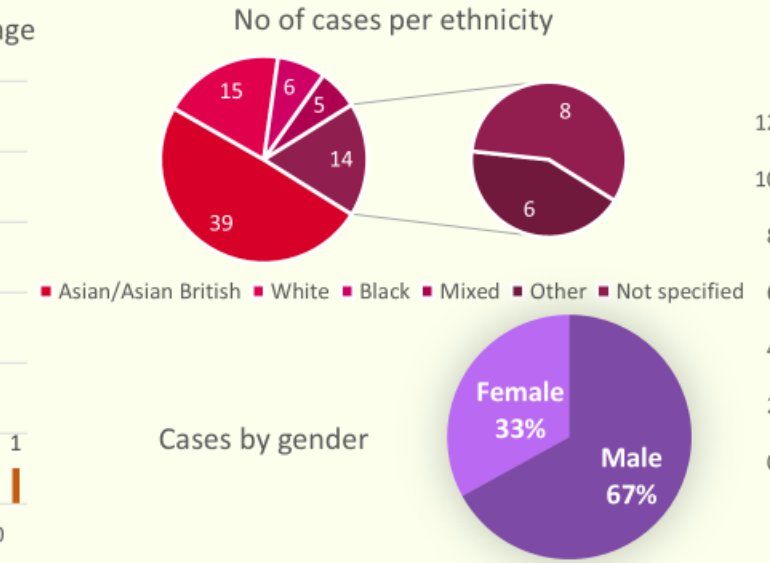
- To identify admissions due to $N_2O$ abuse
- To gather demographics of patients
- To map out the electoral wards in Birmingham from where these patients presented.

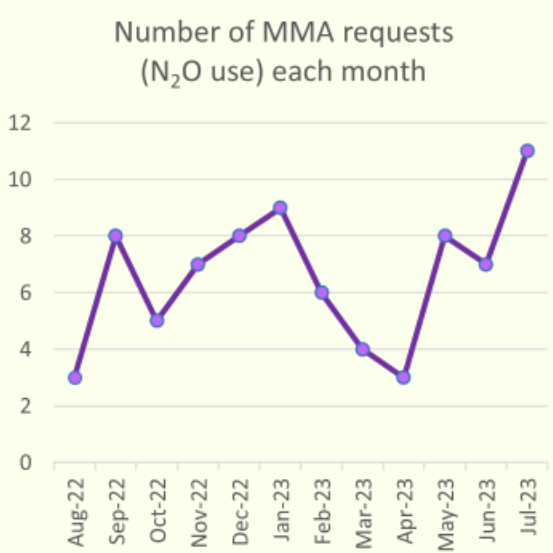
## METHODS

Retrospective chart analysis was used to identify MMA requests secondary to $N_2O$ use in University Hospitals Birmingham NHS Trust from July 2022 to August 2023. Age, gender, ethnicity and residence of users was collected.

## RESULTS




## CONCLUSION

- Only 79 of 215 (35.74%) MMA requests were for $N_2O$ users.
- There appears to be some seasonal variation in requests which may reflect seasonal variations in $N_2O$ abuse.
- As in previous studies, $N_2O$ users are predominantly young males of Asian ethnicity.
- Handed over data to Public Health Services and Social services – currently in use for targeted awareness programmes focusing key populations and specific areas of high $N_2O$ abuse.
- Needs further data to assess impact and effect due to legislation change.

## REFERENCES

1. Mair D, Paris A, Zaloum SA, White LM, Dodd KC, Englezou C, Patel F, Abualnaja S, Lilleker JB, Gosal D, Hayton T, Liang D, Allroggen H, Pucci M, Keddie S, Noyce AJ. Nitrous oxide-induced myeloneuropathy: a case series. J Neurol Neurosurg Psychiatry. 2023 Sep;94(9):681-688. doi: 10.1136/jnnp-2023-331131. Epub 2023 May 30. PMID: 37253616; PMCID: PMC10447413.
2. Brunt TM, van den Brink W, van Amsterdam J. Mechanisms Involved in the Neurotoxicity and Abuse Liability of Nitrous Oxide: A Narrative Review. Int J Mol Sci. 2022 Nov 25;23(23):14747. doi: 10.3390/ijms232314747. PMID: 36499072; PMCID: PMC9738214.
3. van Amsterdam JG, Nabben T, van den Brink W. Increasing recreational nitrous oxide use: Should we worry? A narrative review. J Psychopharmacol. 2022 Aug;36(8):943-950. doi: 10.1177/02698811221082442. Epub 2022 Jun 9. PMID: 35678512.
4. Paris A, Lake L, Joseph A, Workman A, Walton J, Englezou C, et al. Association of British Neurologists Clinical Practice Guide: Nitrous Oxide-Induced Subacute Combined Degeneration of the Cord [Internet]. [cited 2024 Jan 19]. Available from: https://shorturl.at/wMTW8.

# The challenges of anticoagulation in patients with cerebral amyloid angiopathy.

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## INTRODUCTION

**Cerebral amyloid angiopathy (CAA)** carries a significant risk of spontaneous intraparenchymal bleeding, with prevalence increasing in the elderly.[1] Patients with CAA and a history of intracerebral haemorrhage (ICH) face a tenfold increased risk of recurrent bleeding often in the same region.[2] Consequently, initiating anticoagulants in these cases is particularly challenging. [3-5] In life-threatening situations such as pulmonary embolism (PE) and deep vein thrombosis (DVT), where anticoagulation is essential, clinicians are confronted with a difficult dilemma.

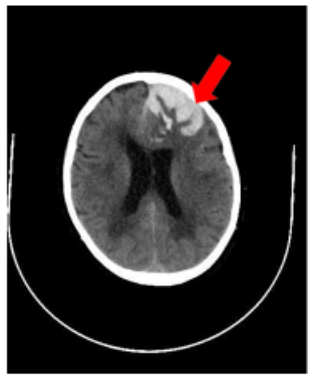


**Fig.1 CT head** showing large left frontal anterior ICH, perilesional oedema and right shift of falx cerebri.

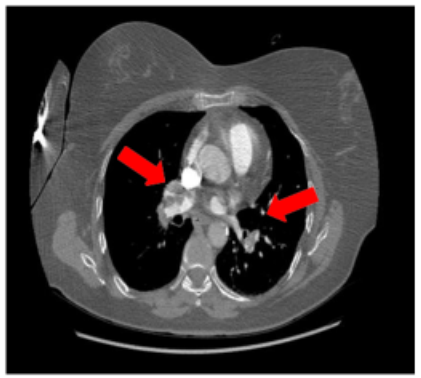


**Fig.2 Contrast CT chest** showing bilateral pulmonary embolism involving right and left branches of pulmonary artery and all lobar branches.

## CASE SUMMARY

A 74-year-old woman was recently discharged from another hospital with a diagnosis of large spontaneous ICH. During her hospital stay, she developed **bilateral PE secondary to DVT** in the left popliteal vein. Due to concurrent major bleeding, anticoagulation was withheld, and an **IVC filter** was placed. She was then discharged with a scheduled follow-up CT scan. Days later, she was admitted to our hospital for syncope. A head CT scan confirmed the bulky frontal ICH whilst a brain MRI demonstrated lobar microbleeds and superficial siderosis, prompting diagnosis of **amyloid angiopathy**. Additionally, total body CT scan showed reduction of PE but severe progression of DVT, involving the entire venous system of the left leg and the IVC up to the filter. Given the case's complexity, a MDT of neurologists, interventional radiologists, vascular surgeons and internists was convened. The team concluded that given the predominance of thrombotic complications and the stability of the haemorrhagic lesion, **low-dose anticoagulation** was reasonable. The patient subsequently started LMWH at 4000 units per day. Over the following weeks, the PE resolved, the DVT improved and no further cerebral bleeds occurred. After 6 months of heparin, DVT had completely resolved with drastic reduction of ICH. The IVC filter was later removed and heparin discontinued.

## DISCUSSION

Recent ICH is a recognized contraindication for anticoagulation due to high hematoma expansion risk. Experts recommend delaying anticoagulation for at least two weeks post-ICH to minimize potential rebleeding. In patients with ICH secondary to CAA and a strong need for anticoagulation, alternatives such as IVC filter and mechanical thrombectomy should be explored. After assessing risks and benefits through careful imaging, we opted for low-dose LMWH. This approach mitigated complications, resulting in PE resolution, DVT improvement, and no further cerebral bleeds.

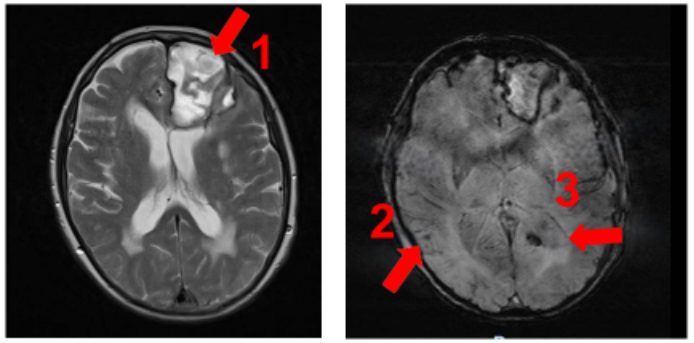



**Fig.3 MRI T2 and SWI images** showing: **1.** Left frontal intra-parenchimal bleeding; **2.** Lobar microbleeds; **3.** Signs of hemosiderosis.

## CONCLUSION

In the absence of clear guidelines for antithrombotic treatment in patients with CAA and ICH, individualised decisions must be made, carefully balancing the risks of recurrent haemorrhage and thromboembolic complications. This case highlights the importance of a multidisciplinary approach in managing complex clinical scenarios, ultimately leading to successful outcomes.

## REFERENCES

## IMAGING CHRONICLE

# Comparing the use of continuous intravenous proton-pump inhibitors and intermittent infusions following endoscopic therapy

*Dr. Inês Almeida e Sousa[1], Dr. Rahul Kalla[1] and Dr. Gail Masterton[1]*
[1]Royal Infirmary of Edinburgh, Gastroenterology department

NHS Lothian

## Background

- All patients should receive high dose IV proton pump inhibitors (PPI) following endoscopic treatment[1].
- A continuous PPI infusion (80mg stat dose followed by 8mg/hour over 72 hours) has traditionally been used as this was thought to promote maximum healing[2].
- However, intermittent bolus therapies have been shown to be non-inferior to continuous infusions in rebleeding rates and rates of hospital re-admission[3,4].

## Methods

- Retrospective clinical audit
- Included all patients who received IV PPI following endoscopic therapy between March and November 2023 in the Gastroenterology department of the Royal Infirmary of Edinburgh
- 2 study groups: continuous and intermittent infusion
- Nursing staff questionnaire

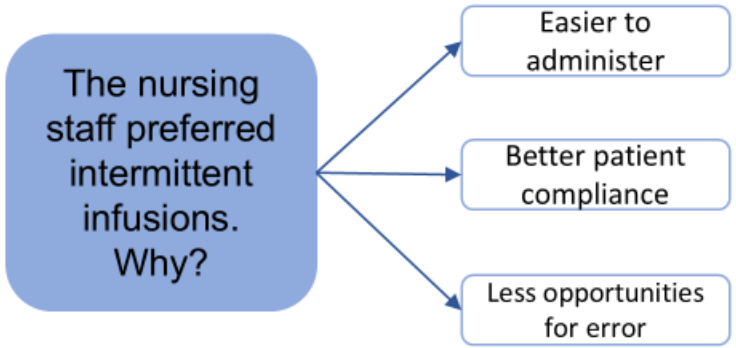
## Results

**Continuous (n=30)**

- Mean hospital stay = **10 days**
- **50%** treatment completion
- **£21.6** per patient per treatment

**Intermittent (n=23)**

- Mean hospital stay = **7 days**
- **78%** treatment completion
- **£7.2** per patient per treatment




## Conclusion

Intermittent PPI infusions were associated with:

- shorter admissions
- increased likelihood of treatment completion
- reduced costs

Switching from continuous to intermittent infusions could be beneficial for the NHS as a cost saving and sustainable measure.

## References

1. Siau et al., 2020. Frontline Gastroenterol. 2020 Mar 27;11(4):311-323. doi: 10.1136/flgastro-2019-101395
2. Laine and McQuaid, 2009. Clin Gastroenterol Hepatol. 2009 Jan;7(1):33-47; quiz 1-2. doi: 10.1016/j.cgh.2008.08.016.
3. Sachar et al., 2014. JAMA Intern Med. 2014 Nov;174(11):1755-62. doi: 10.1001/jamainternmed.2014.4056
4. Hernandez et al., 2023. Cureus. 2023 Oct 31;15(10):e48056. doi: 10.7759/cureus.48056

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# A case report: Good syndrome after thymectomy

Dr Ingyin May, Dr Srikanth Akunuri

## Background and Objective

Good syndrome is a rare primary immunodeficiency characterized by recurrent infection, hypogammaglobulinemia associated with thymus tumor and the symptoms of recurrent infection may still persist even after thymectomy.

## Case presentation

A 32-year old gentleman was recently referred to rapid diagnosis clinic due to recurrent chest infection for the past 2 years. He developed thymoma (Figure 1) , after hospitalized with Covid-19 infection in 2022. The thymoma was removed in late 2022. After thymectomy, he had recurrent chest infection with multiple visits to A&E, GP, respiratory clinic and medical ambulatory care. He complained of purulent sputum with cough and weight loss.

## Investigation

He was heavily investigated by respiratory team and TB was excluded. He also had multiple CT chest and PET scan which show inflammatory changes only ( Figure2). . On blood test, it shows low levels of immunoglobulins which are IgG- 2.84, IgM- <0.05, IgA 0.14. total and differential white cell counts were normal with raised CRP.

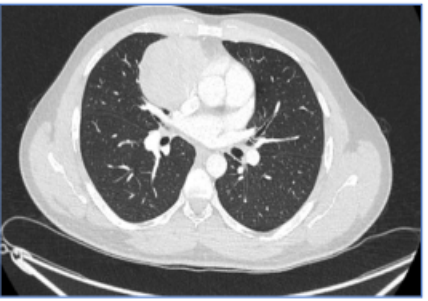

Figure1. CT chest with mass

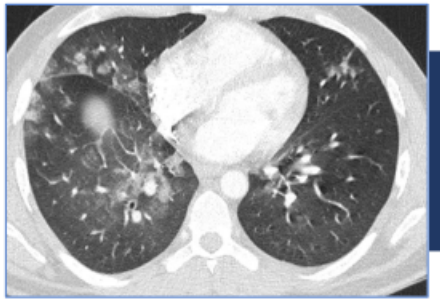

Figure2. CT chest with infection

## Conclusion

To conclude, this patient is referred to immunology clinic for further diagnosis, investigation and treatment. This case report highlights to be aware of Good syndrome in post thymectomy patients with recurrent infection. It would hopefully help the clinicians to get the accurate diagnosis and proper treatment.

## References

1. R. Furukawa, Good's syndrome with clinical manifestation after thymectomy: A case report. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6010670/#, PMID: 29977769

2. Sipos F, Műzes G. Good's syndrome: brief overview of an enigmatic immune deficiency. APMIS. 2023 Dec;131(12):698-704. doi: 10.1111/apm.13351. Epub 2023 Sep 20.PMID: 37729389

# Real-World Experience of Managing Checkpoint Inhibitor-Induced Colitis at a UK Tertiary Referral Centre

Irene J Oommen[1], Hajir Ibraheim[1,2], Nathan Dean[2], Paolo D'Arienzo[2], Nick Powell[1,2]

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## BACKGROUND

- **Immune checkpoint inhibitors (CPI)** can trigger **immune-related adverse-events** such as **CPI-induced colitis (CPI-c).**[1]
- **CPI-c** is the **leading cause** for **discontinuing** lifesaving **CPI therapy**.[2]
- There is a **critical need** for **real-world** data to inform **evidence-based management strategies** for **CPI-c**.[3,4]

## AIM

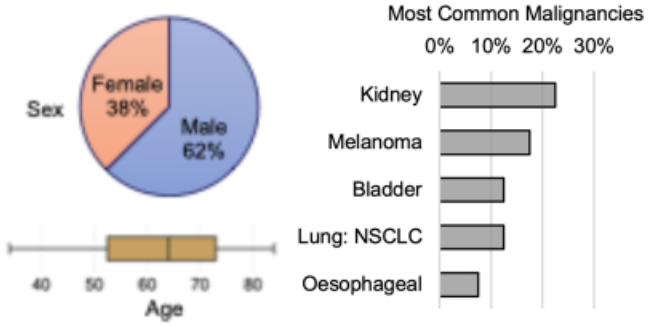
- To evaluate the **clinical characteristics, endoscopic features, histology,** and **treatment outcomes** of **CPI-c patients** in a real-world setting.

## METHODOLOGY

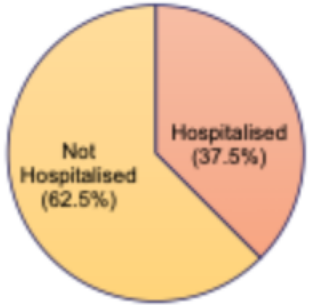
- This is a **retrospective observational study** which analysed **40 consecutive CPI-c patients** at **Imperial College Healthcare NHS Trust** from **2019-2023.**
- **Inclusion criteria** for CPI-c patients: Presence of **diarrhoeal symptoms** + **endoscopic** and/or **histological colonic inflammation** + a minimum follow-up time of 90 days.
- The **Mayo Endoscopic Score (MES)** was used to **grade severity** of **endoscopic inflammation**.

## KEY RESULTS

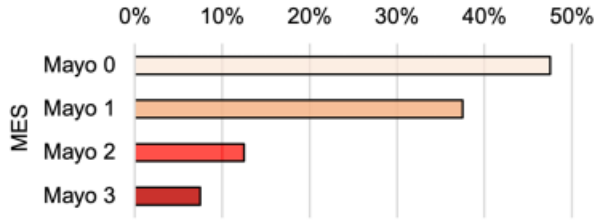
### 1. Baseline Characteristics of CPI-c Patients



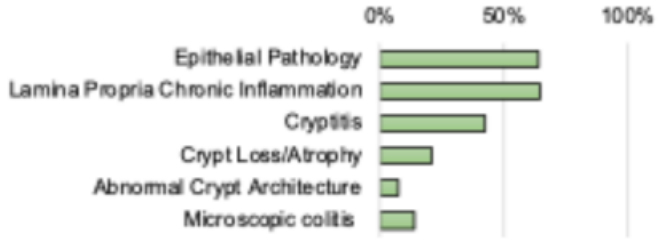

### 2. Significant Hospitalisation Rate in CPI-c



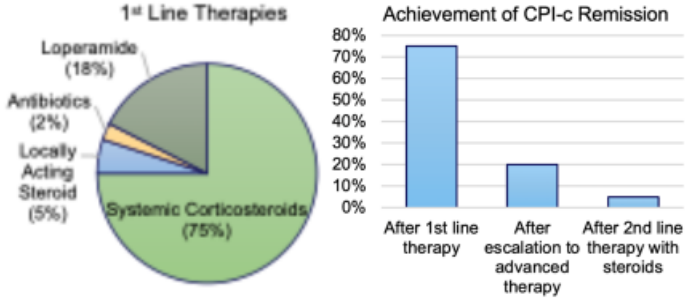

### 3. CPI-c patients may have normal endoscopic findings despite microscopic pathology



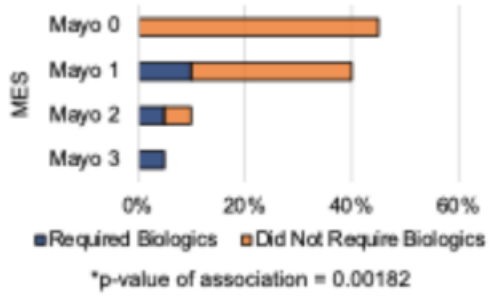

### 4. Most Frequent Histological Features in CPI-c




### 5. 1st Line Therapies & Treatment Outcomes in CPI-c




### 6. Need for Advanced Therapies is Associated* with Greater Endoscopic Disease Severity




## CONCLUSIONS

- This study represents one of the **largest single-centre real-world** experiences of **CPI-c** in the **UK**.[5]
- The **high hospitalisation rate** and **need** for **advanced therapies** underscore the **clinical** & **economic burden** of CPI-c.[1]
- The **presence** of **histological inflammation** despite **normal endoscopic findings** in CPI-c patients highlights the **importance** of taking **colonic biopsies** in suspected cases.
- **Endoscopic disease severity** is **significantly associated** with **escalation** to **advanced therapies**.
- A **substantial minority of patients (15%)** experienced **cancer progression** during **CPI-c treatment**, emphasising the delicate balance between managing CPI-c and tumour control.

## REFERENCES

1) Rober C, Nat Commun. 2020, Jul 30;11(1):3801
2) Hashash *et al.* Gastroenterol Hepatol. 2021, Aug;17(8):358–66
3) Tang *et al.* Front Immunol. 2021, Dec 21;12:800879
4) Powell *et al.* Lancet Gastroenterol Hepatol. 2020, Jul;5(7):679–97
5) Ibraheim *et al.* Aliment Pharmacol Ther. 2020, Nov;52(9):1432–52

# This Is Surely Sepsis! - An Interesting Clinical Case About HLH in Intensive care unit

Dr. Israh Manzoor- Wexham Park Hospital

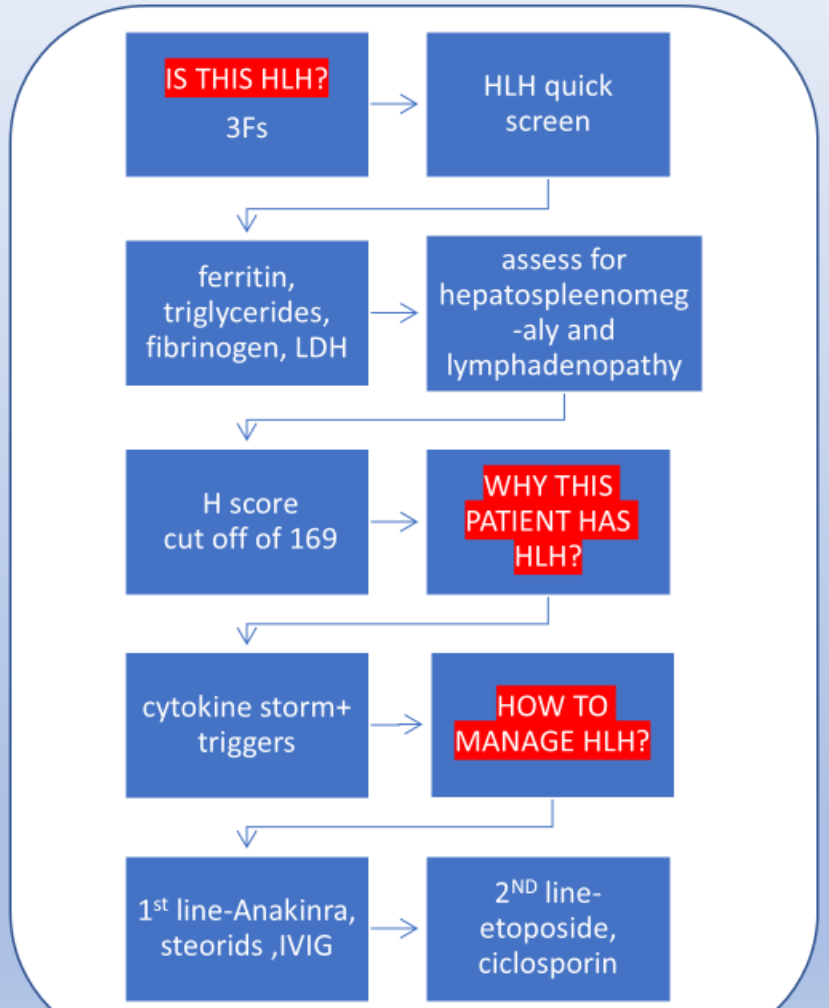
## Introduction

Hemophagocytic lymphohistiocytosis (HLH) is a potentially life threatening condition characterised by inflammation that can be related to genetic or sporadic forms, triggering factors may be involved in both. Early detection of the underlying cause is crucial for therapeutic decision, as early intervention is associated with better outcomes.

## Case report

A case of 53 year old lady with initial presentation of viral LRTI was reported which transformed into a full blown HLH picture requiring intensive care admission for respiratory support. This patient was initially treated for a presumed respiratory tract infection in the ED followed by positive viral culture results. She however deteriorated quite quickly in terms of increased oxygen requirement and had persistent fever with pancytopenic picture which eventually led the medical team to test for ferritin levels which came back elevated and thus led to the diagnosis of HLH.

## Figure




## Discussion

it is a life-threatening disease of severe hyperinflammation caused by uncontrolled proliferation of benign lymphocytes and macrophages that secrete high amounts of inflammatory cytokines . Consensus shows that approximately 70 percent of HKH cases occur before the age of one year. Current treatment regimes usually involve high dose steroids, Anakinra and IVIG. Etoposide & cyclosporin have also been used. Other medications include cytokine targeted therapy

## Conclusion

This case demonstrates that patients are often treated on the lines of sepsis protocol due to typical presentation of infective symptoms. Although this is the right course of action, One should always keep in mind the differential diagnosis of HLH in case of persistent temperature spikes, dropping count and raised ferritin levels.

References: 1. Books: Alan H, Gavin C., Inam H. et al. Oxford Handbook of Rheumatology, 2nd Edition. Oxford University Press
2. Website:E-learning resources, British Society of Rheumatology https://www.rheumatology.org.uk/e-learning

# A QIP TO SHOW THE USE OF CORTICOSTEROIDS AND CONCOMITANT PRESCRIPTIONS OF PPIs AT NMUH

J Chui, S Hassan, S Mumtaz, S Rizik North Middlesex University Hospital October 2024

NHS North Middlesex University Hospital NHS Trust

## Introduction

An 84-year-old male patient was admitted and found to be COVID positive on oxygen and thus was prescribed dexamethasone as per trust guidelines.

Unfortunately, he was not prescribed gastroprotection whilst on intravenous corticosteroids (CS) and subsequently developed gastrointestinal (GI) bleeding with severe ulceration on OGD.

Adverse gastrointestinal effects caused by CS, such as **GI bleeding and perforation**, are well documented, with a particularly **increased risk for hospitalised patients.**[1]

NICE clinical knowledge summaries (CKS) for CS **recommend that a proton pump inhibitor (PPI) should be considered** for patients who are at high risk of gastro-intestinal bleeding or dyspepsia, with risk factors including anti-coagulants, history of GI bleeding and excessive alcohol consumption.[2]

## Aims

1. Assess if sufficient gastroprotection is given alongside oral or intravenous (IV) corticosteroids.
2. Identify ways to improve the safety around corticosteroid prescribing
3. Evaluate the efficacy of patient safety interventions.

## References

[1] Narum S, Westergren T, Klemp M Corticosteroids and risk of gastrointestinal bleeding: a systematic review and meta-analysis *BMJ Open* 2014; 4:e 004587. doi: 10.1136/bmjopen-2013-004587

[2] Clinical Knowledge Summaries: 2024 Scenario: Corticosteroids, NICE. Scenario: Corticosteroids | Management | Corticosteroids - oral | CKS | NICE [Accessed: 07 September 2024]

## Methods

- Retrospective data was collected from the electronic prescribing system for patients who had been prescribed oral and IV corticosteroids.
- A locally developed risk scoring system for GI bleeding was created, based on the risk factors from the NICE CKS

| Risk: | Score |
|---|---|
| Aspirin/clopidogrel/Ticagrelor/NSAID | 1 point for each |
| DOAC/Warfarin/Tx Tinzaparin | 2 point |
| VTE prophylaxis | 1 point |
| Heavy smoker | 1 point |
| ETOH Excess | 1 point |
| History of GI bleed/ulcer | 2 points |
| Older age>65 year | 1 point |

| Score | Risk |
|---|---|
| ≥1 | Moderate risk |
| ≥2 | High risk |

*Figure 1 : A risk scoring system for GI bleeding*

- The overall risk score was applied to each patient to assess overall risk of patients having a GI bleed.
- Two interventions were implemented via PDSA cycles with data collection and analysis in between and after.
- **1st Cycle:** A drug note added to the electronic prescribing system to all intravenous and oral corticosteroid

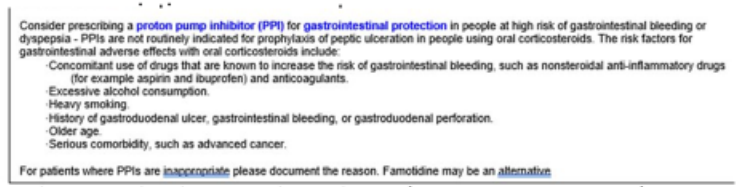


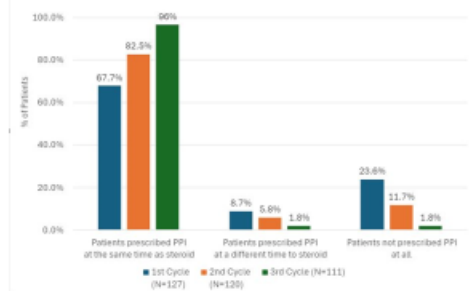

*Figure 2: First intervention using a drug note prompt on the prescribing platform*

- **2nd cycle:** Relevant healthcare professionals updated and prompted via an educational poster which was created and disseminated and through departmental meeting updates.

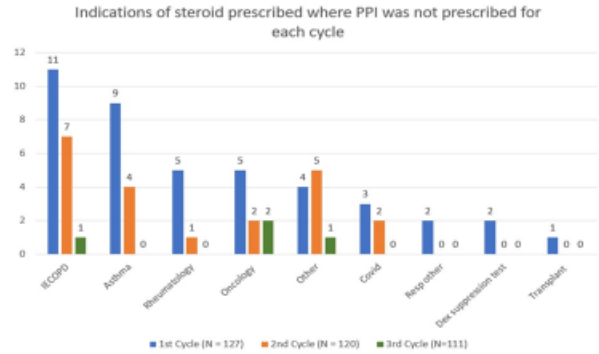

*Figure 3: Second intervention highlighting an educational poster about concomitant corticosteroid and PPI prescribing to healthcare professionals*

## Results

After 2 PDSA cycles the concomitant gastroprotection prescribing increased from **67.7% to 82.5% to 96%** between each cycle.
Patients with GI risk score of ≥1 who were not prescribed a PPI reduced from **31% to 4%.**




*Graph 1 : The percentage of patients who were prescribed either oral or intravenous CS and whether they were prescribed gastroprotection at the same time, at a different time or not at all. The three bars represent the data collection periods prior to intervention and after each intervention.*




*Graph 2 – Indications of steroids prescribed where a PPI was not prescribed per each cycle. Allowed for directed teaching.*

| Risk score | 1st cycle | 2nd cycle | 3rd cycle |
|---|---|---|---|
| 0 | 2 | 1 | 0 |
| 1 | 12 | 14 | 3 |
| 2 | 19 | 4 | 1 |
| 3 | 7 | 1 | 0 |
| 4 | 2 | 1 | 0 |

*Table 1 – Risk scores for patients who were not prescribed GI protection through each cycle*

## Conclusion, learning points and next steps

Both interventions have subsequently **increased the amount of gastroprotection** prescribed with CS. The risk scoring system we have created for this QIP identifies that **most hospitalised patients with a score ≥ 1 require PPI** when prescribed CS.

The majority of patients had their CS prescribed in the emergency department during the medical clerking.

To support prescribers, the next steps would be to develop prescribing protocols for CS and PPIs, in addition to further educational measures targeted to the relevant departments.

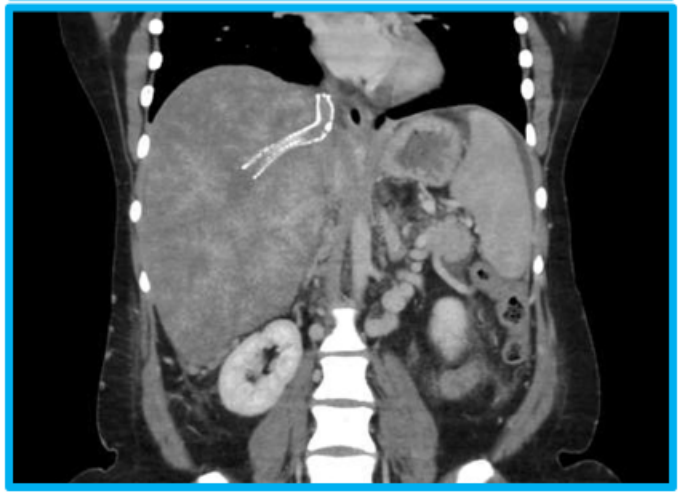
# Antiphospholipid Syndrome presenting as Budd Chiari Syndrome with Recurrent Hepatic Vein thrombosis: A rare case report

**Presenting Author: Dr. Jaisy James, Internal Medicine Trainee**

**Co Authors: Dr. Geetha Mary Philips, Dr. Joe Thomas, Aster Medcity, Kochi, India**

## INTRODUCTION

- Antiphospholipid syndrome (APS) can cause arterial or venous and is characterized by autoantibodies directed against phospholipids .
- Budd Chiari syndrome (BCS) is defined as obstruction of hepatic venous outflow located anywhere from the small hepatic venules up to the entrance of Inferior vena cava (IVC) into right atrium.
- Budd Chiari syndrome is a rare but serious complication of Antiphospholipid syndrome
- Literature is limited with such case reports which reveals that Budd Chiari syndrome is a rare initial clinical manifestation of Antiphospholipid syndrome .



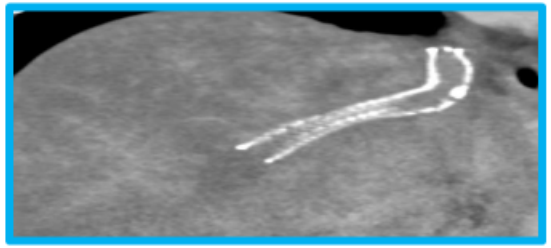
## CASE REPORT

A 21-year-old lady, with no known comorbidities

- Presented with complaints of low grade fever, myalgia and abdominal pain since 2 months, abdomen distension since 2 weeks.
- O/E-Conscious oriented
  Pallor present, no icterus, clubbing ,nodes
- GIT: Soft tender hepatomegaly(15cm) and spleen tip palpable.
- Vitals stable, other systems :Normal
- CBC showed anaemia, thrombocytopenia
  Stool occult blood positive
- After transfusion, Platelet count didn't improve.
- ANA profile: SSB ,SM Positive .
- Steroid was started
- CECT abdomen -Caudate lobe compressing hepatic IVC with hepatomegaly, moderate ascites.
- USG guided diagnostic tapping was done which showed lymphocyte predominance.
- Hepatic angiogram and Liver Biopsy deferred due to thrombocytopenia(6000).
- Later APLA antibodies became positive and hence was started on pulse steroids , IVIG, anticoagulants and rituximab infusion. Her symptoms resolved, counts improved and was discharged.
- 1 month later she presented with severe abdominal pain and distension.
- CECT abdomen done showed hepatomegaly and completely occluded 3 hepatic veins and moderate ascites.
- Hepatic venoplasty was done and stent was placed.
- She was discharged on Steroids, Clexane and HCQ.
- In last 4 years she was admitted four times with similar symptoms and CECT showed stent thrombosis / IVC thrombus which was cleared through venoplasty and stent insertion.

## INVESTIGATION

| | |
|---|---|
| Total WBC count | 5100/uL |
| Haemoglobin | 6.8 gm/dl |
| Platelet | 5k/uL |
| Ferritin | 498 ng/ml |
| LFT/ RFT | Normal |
| Serum C3 | 85 mg/dl |
| LDH | 603 U/L |
| Stool occult blood | Positive |
| DCT | Positive |
| ICT | Weakly positive |
| Dengue NS1/ IgM/ IgG | Negative |
| HIV/HBs Ag/ HCV | Negative |
| IgM Beta 2 Glycoprotein | Negative |
| IgG Beta 2 Glycoprotein | Positive |
| Anti ds DNA | Negative |
| IgM,IgG Lupus anticoagulant | Positive |
| IgM,IgG Cardiolipin antibody | Positive |



## DISCUSSION

- Budd-Chiari syndrome is a potentially life-threatening complication in Antiphospholipid Antibody Syndrome[1].
- In Conclusion, the coexistence of Antiphospholipid Antibody Syndrome (APS) and Budd-Chiari Syndrome poses a unique challenge for diagnosis and management.

## REFERENCES

[1] I. Uthman and M. Khamashta, "The abdominal manifestations of the antiphospholipid syndrome," Rheumatology, vol. 46, no.11, pp. 1641–1647, 2007.

# Same-day and early discharge in elective TAVI cases: changing practice in the UK

*Jake Dixon[1], Dr Nishant Gangil[2], Dr Luke Tapp[2], Dr Thirumaran Rajathurai[2]*
*1.Warwick Medical School, 2. University Hospitals Coventry and Warwickshire*

## Introduction

Transcatheter aortic valve implantation (TAVI) is a minimally invasive alternative to surgical aortic valve replacement in the treatment of severe aortic stenosis.[1] There are approximately 6,000 elective cases performed in the UK each year.[2] TAVI is usually performed under local anaesthetic, and the median length of stay (LOS) in the UK is 3 days.[2,3] Concerns regarding delayed complications cause some centres to avoid earlier discharge.[4] We aimed to demonstrate that same-day and early discharge in elective TAVI patients with no clear peri-procedural complications is safe and maintains good clinical outcomes.

## Materials and Methods

We conducted a retrospective analysis of all elective TAVI patients at a UK tertiary surgical centre between 2022 and 2023.
We reviewed the records of 143 patients to assess clinical outcomes and identify peri-procedural complications. Records were reviewed for up to one year post implant.

## Results

The median LOS at our centre was 1 day while the national median is 3 days.[2]
19 (13%) patients required permanent pacemaker implantation (PPI) and 19 developed peri-procedural high-degree atrioventricular block (HAVB). This was lower than the expected 24% incidence of PPI and 22% HAVB.

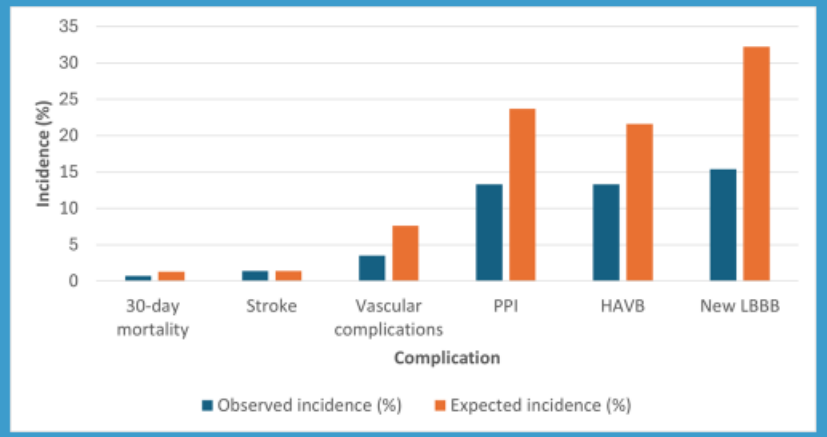



***Figure 1: Comparison of observed and expected incidence of TAVI-related complications.[2,4,5,6,7]***

26.3% of HAVB was transient and did not require PPI.

2 (1.4%) patients required PPI post-discharge for late TAVI-related conduction abnormalities - both developed sinus node disease.
The expected rates of incidence were based on national databases and relevant publications.

## Conclusions

Same-day or early discharge in elective TAVI patients with no clear peri-procedural complications appears safe.[8,9,10] Overall complication rates were as or less frequent than expected and our data showed little evidence of the development of TAVI-related procedural complications or conduction abnormalities post-discharge.

Potential benefits of reduced LOS include:

- **Improved patient flow**
- **Increased bed capacity**
- **Better clinical outcomes**

## References

Warwick Medical School

University Hospitals Coventry and Warwickshire NHS Trust

# Novel software solution to accelerate procedural skills training and improve staff wellbeing – *a quality improvement project.*

**Authors: Dias, J.** (Dartford and Gravesham NHS trust, UK)

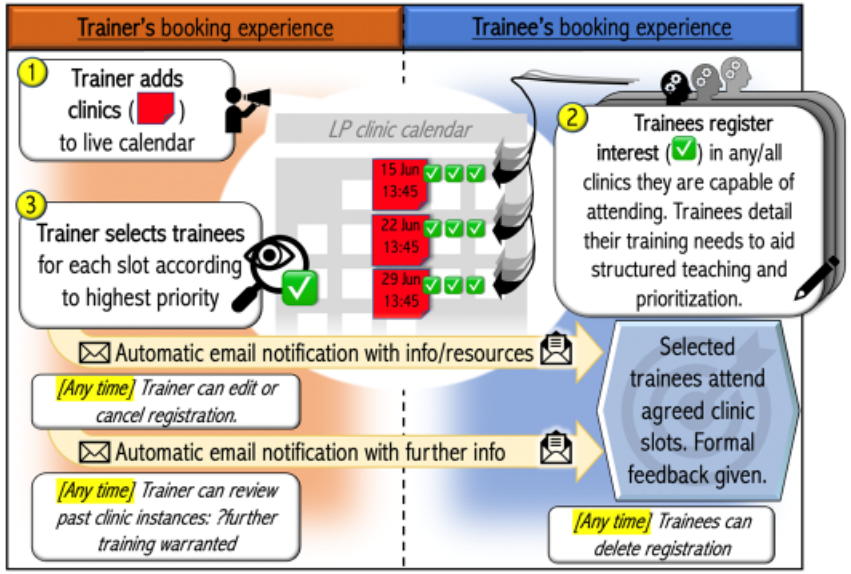
## INTRODUCTION

- Supervised procedural skills practice is essential for medical doctors' training and for quality healthcare provision.[1] Trainees must gain, maintain and teach procedural skills,[2] and the NHS pledges provisions to aid this.[3]
- Barriers to workplace-based skills training (for trainee/trainer) include: time constraints, competing commitments, and administrative/logistical difficulties.[4-6] Inflexible training structures compound these, worsening workplace dissatisfaction and the NHS's staff retention crisis.[5,6]
- Procedure clinics are semi-predictable opportunities for skills training, but traditional calendarization or "first come first served" scheduling of clinic-based training has similar barriers and is inefficient (due to mismatching of trainee demand to clinic activity). Software could improve this process.
- This quality improvement (QI) project assessed the impact of novel intermediary software on the training rate and booking experience of doctors seeking real-life supervised lumbar puncture (LP) practice in clinic.

## MATERIALS AND METHODS

The QI intervention was a novel "sign-up sheet"-style web application (process map shown in *Fig 1*) that was purpose-built and implemented to intermediate the slot announcement, trainee registration, scheduling and correspondence of junior doctors' clinic-based supervised LP practice.

***Fig 1***. Process map for the novel web app booking method trialed in this




Data was prospectively gathered from LP clinic logs (all data) and trainee/trainer surveys (ad hoc and cross-sectional sampling) over 18 months from 2022-2024 (12 months pre-QI; 6 months post-QI) at a large district general hospital. At QI rollout, the completed web application was announced using communication applications, email and word-of-mouth.
Primary outcome measures pre-/post-QI included: clinic slot usability for training; slot usage for training; trainee's preferred method for obtaining LP practice (with appraisal of the: ease, flexibility, reliability and estimated time burden of booking; and ease of attending booked slots); and the trainer's estimated time burden in co-ordinating LP training. The LP clinic's training rate was computed.

## RESULTS AND DISCUSSION

55 LP clinic slots pre-QI and 25 post-QI were evaluated, representing 25 LP potential training opportunities pre-QI and 14 post-QI. 23 trainees pre-QI and 21 post-QI were surveyed, returning 8 completed surveys pre-QI and 8 post-QI. One neurology registrar co-ordinated bookings.
**Rollout of the web-based booking app increased the LP clinic's training rate by 49% [n=12]. Post-QI: 87% trainees preferred the app to all other methods for obtaining LP practice [n=8], whereas no pre-QI method exceeded 29% approval [n=7]. It scored better than alternative methods [n=14] for ease, flexibility and reliability of booking, as well as ease of attending booked slots (see *Fig 2*).** The trainer's time burden was at least halved post-QI [n=1], however trainee time burden was unchanged [n=9].
Analysis is limited by small sample sizes and subjective scales. Biasing factors include the app's implementation outside of trust internet/wifi provisions (underrepresenting its onboarded potential), and the effect of rollout announcements on trainee behaviour/perceptions.

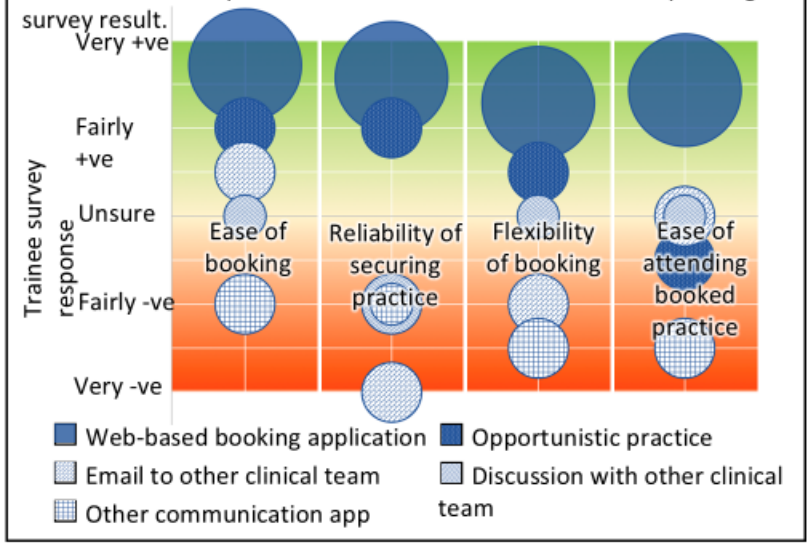
## CONCLUSION

This project trialled an original and bespoke software concept, yielding real-world improvements in LP training rate and relevant aspects of staff wellbeing. It promises high generalisability to healthcare settings nationwide, negligible running costs, and adaptability to support other clinic-based experiences/training. App implementation is therefore recommended, with expanded utility expected after further development.

## ACKNOWLEDGEMENTS

Thanks are owed to the developer of this software app – Olivia Dias – without whom none of this work would have been possible.

***Fig 2.*** Bubble plots, showing trainee rating for each booking method by item of user experience across aggregated data 2022-2024.
Bubble area corresponds to the n-number for for the corresponding survey result.




## REFERENCES

1. Joint Royal Colleges of Physicians Training Board. Curriculum for Internal Medicine Stage 1 Training. Implementation August 2019. https://www.thefederation.uk/training/specialties/internal-medicine [accessed 18/8/2024]
2. General Medical Council. Good Medical Practice. Published: August 2023. Implemented: January 2024. https://www.gmc-uk.org/professional-standards/professional-standards-for-doctors/good-medical-practice [accessed 18/8/2024]
3. Department of Health & Social Care. The NHS Constitution for England. Updated 17 August 2023. https://www.gov.uk/government/publications/the-nhs-constitution-for-england/the-nhs-constitution-for-england [accessed 18/8/2024]
4. Jedaar Z, Martin C and Pugsley L. How to... Overcome barriers to effective work-based learning. Education for Primary Care 2009; 20;477-9.
5. General Medical Council. National Training Survey 2024 results. 2024. https://www.gmc-uk.org/-/media/documents/national-training-survey-summary-report-2024_pdf-107834344.pdf [accessed 19/8/2024]
6. Lock F K and Carrieri D. Factors affecting the UK junior doctor workforce retention crisis: an integrative review. BMJ Open 2022; 12;e059397.

NHS Dartford and Gravesham NHS Trust

# Evaluating The Ultrasound Guided Percutaneous Lung And Pleural Biopsy Service At The Queen Elizabeth Hospital (QEH)

Jamie Kok, Alex Moate, Sivananthan Sasikumar | Queen Elizabeth Hospital, NHS Lewisham & Greenwich

NHS Lewisham and Greenwich NHS Trust

## INTRODUCTION

Thoracoscopic or image guided pleural biopsy is recommended by the British Thoracic Society for investigation of unilateral pleural effusion, whereas percutaneous lung biopsy may be offered in the investigation of pulmonary nodules or peripheral lung masses (1). National targets for cancer waiting times indicate that patients should have a diagnosis within 28 days of referral following an abnormal radiological result (2). Respiratory physicians at QEH Woolwich established a service to perform these procedures when previously it was performed on an ad-hoc basis by the interventional radiologists (IR).

## AIMS

To determine the number of days between referral date and procedure date, and referral date to diagnosis; then compare results with IR data.

To determine if the service has improved the trust's performance in achieving the national target of 28 days to cancer diagnosis.


**REFERENCES**

1. Roberts, M.E. et al. (2023) 'British Thoracic Society guideline for pleural disease', Thorax, 78(11), pp. 1143-1156. doi:10.1136/thorax-2023-220304.
2. Cancer waiting times (2024) Cancer Research UK. Available https://www.cancerresearch.uk.org/about-cancer/worried-about-cancer/cancer-waiting-times#:~:text=The%20target%20is%20that%20you,their%20GP%20for%20suspected%20cancer (Accessed: 05 May 2024).


## METHODS

Data was analysed for all patients who underwent an ultrasound guided percutaneous needle biopsy at QEH between November 2021 to December 2022. 53 records were collected over this 13 month period.

53 referrals for ultrasound g biopsy from Nov '21 to Dec '2

Total excluded (n=4)
- Consultant had Covid (n=1)
- Patient had Covid (n=1)
- Patient was on clopidogrel (n=2)

Included in this study (n=49)

## DEMOGRAPHICS

All patients included (n=49):
Mean Age: 72
Median Age: 73

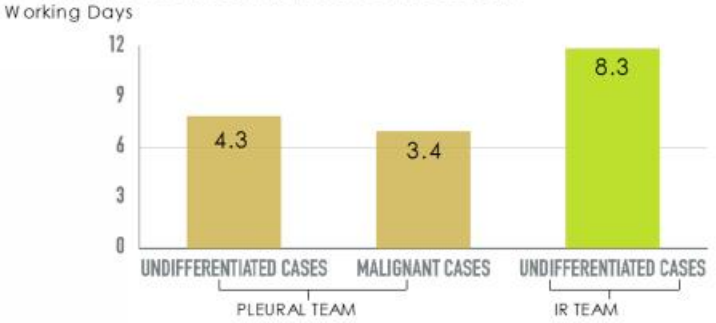

Figure 1. Gender split of all patients included in study

Subgroup: Patients diagnosed with cancer (n=36):
Mean Age: 72
Median Age: 74

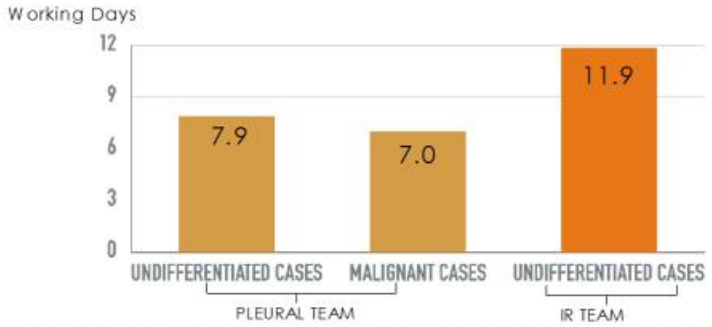

Figure 2. Gender split of all patients diagnosed with cancer after biopsy

## FINDINGS

1. Time Between Referral to Procedure




2. Time Between Referral to Diagnosis




## CONCLUSION

This audit demonstrated that the pleural biopsy service successfully shortened the time taken between referral to diagnosis of cancer, as well as time taken between referral to biopsy date. This achievement allows patients to be highlighted more promptly to the relevant oncology teams and reduces delay in urgent treatment.

# Quality Improvement Project on Taking Blood Culture for the Diagnosis of Infective Endocarditis


## Jesmin Hossain

**With thanks to**
**Wisam Khider, Marina Cusnir**
**Glan Clwyd Hospital, North Wales**


## INTRODUCTION

According to the Modified Duke Criteria, positive blood culture is one of the 2 major criteria in diagnosing Infective Endocarditis. Positive blood culture is not only the cornerstone of IE diagnosis but also helps to optimise the management by identifying the causative organism & its sensitivity to antimicrobial therapy.

## OBJECTIVE

To assess the compliance with the microbiological diagnosis of IE as per ESC guidelines, we conducted 2 cycles of audit at Glan Clwyd Hospital.

## METHODOLOGY

1st Cycle

- Retrospective
- Time period: 31/12/22- 31/12/23
- Sample size: 20 patients
- Confirmed cases of IE

2nd Cycle

- Prospective
- Time period: June-August 2024
- Sample size: 21 patients
- Both suspected & confirmed cases

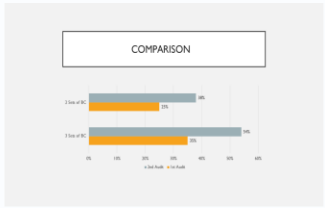
## ANALYSIS

**1st Audit**

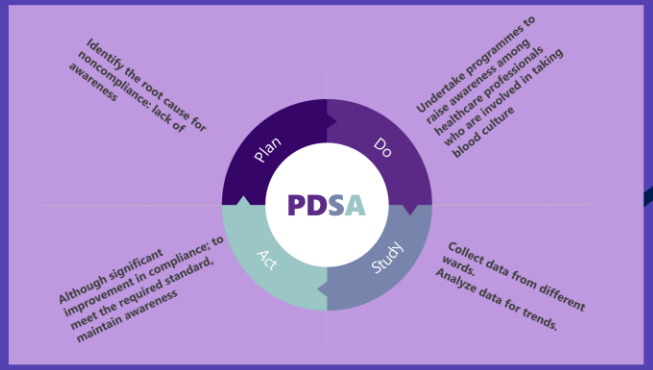
3 sets of BC: 35%
2 sets of BC within same day: 25%

**2nd Audit**

3 sets of BC: 54%
2 sets of BC within same day: 38%

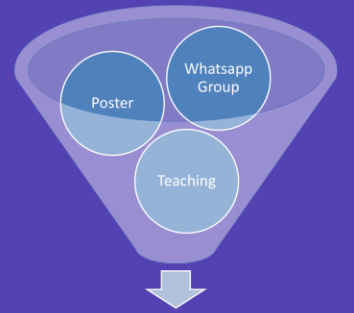







## CONCLUSION

- This QIP showed that the compliance improved significantly following strategic intervention.
- Awareness programme to be maintained to improve adherence to the guidelines.
- ECHO request form to include if 3 sets of blood culture have been sent.
- Re-audit in 6 months' time to see the trend.




**Intervention**


**REFERENCES**

Liesman RM, Pritt BS, Maleszewski JJ, Patel R. Laboratory Diagnosis of Infective Endocarditis. J Clin Microbiol. 2017 Sep;55(9):2599-2608. doi: 10.1128/JCM.00635-17. Epub 2017 Jun 28. PMID: 28659319; PMCID: PMC5648697.

Fihman V, Faury H, Moussafeur A, Huguet R, Galy A, Gallien S, Lim P, Lepeule R, Woerther PL. Blood Cultures for the Diagnosis of Infective Endocarditis: What Is the Benefit of Prolonged Incubation? J Clin Med. 2021 Dec 13;10(24):5824. doi: 10.3390/jcm10245824. PMID: 34945119; PMCID: PMC8705825


GIG CYMRU NHS WALES
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# *Mind the Gap*: improving the consistency and quality of weekend handovers using a standardised, digital and doctor-centred approach

*Dr Jessica Forsyth[+], Dr Ingie Zayed[+], Dr Juweyriya Abdiise[+], Dr Ashley Smaje and Dr Nicola Wilson* // *Queens Hospital, Barking Havering & Redbridge NHS Trust, London* // May – June 2024

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NHS Barking, Havering and Redbridge University Hospitals NHS Trust

## INTRODUCTION

- It is well evidenced that the quality of handovers can significantly affect patient outcomes, particularly during on call periods[1-4]
- Clear, rationalised and accessible handovers are paramount for patient safety and ability to prioritise workload out of hours
- In our busy urban district general hospital, weekend doctors covering Care of Elderly (CoE) wards can be responsible for over 60 patients, often in an unfamiliar ward; notes are paper-based with a patient summary on an electronic patient board, complicating handovers
- The issue of poor weekend handovers was consistently raised in our Junior Doctor forums. Recurrent themes included: poorly documented handovers, sparse details on patient background, poor task specificity, large volume of requested reviews without clinical context and inconsistent handover practices between wards

**AIM:** To improve both the consistency of weekend handovers and the qualitative on-call experience on the Care of Elderly wards by establishing a standardised electronic handover system

## METHODS

Baseline data collected by auditing electronic patient boards for handovers & digital questionnaires for on-call doctors

Creation of a standardised weekend handover protocol: every patient to have SBAR-style handover on electronic patient board, including at a minimum: a) weekend plan with specific tasks b) past medical history (PMHx) and c) updated issues list

3 rounds of intervention completed, 2 weeks apart, with re-audit of electronic patient boards & digital questionnaires

## RESULTS

### BASELINE DATA

**5** different weekend handover methods used

**67%** of on-call doctors graded quality of weekend handover as ' Poor' or 'Very Poor' (N=6)

AVERAGE QUALITY SCORE **2.2/5**

**% of weekend handovers meeting criteria** (N=124)

| | | | |
|---|---|---|---|
| **Weekend plan:** | **65%** | **PMHx list:** | **65%** |
| **Specific task:** | **45%** | **Issues list:** | **49%** |

### INTERVENTIONS

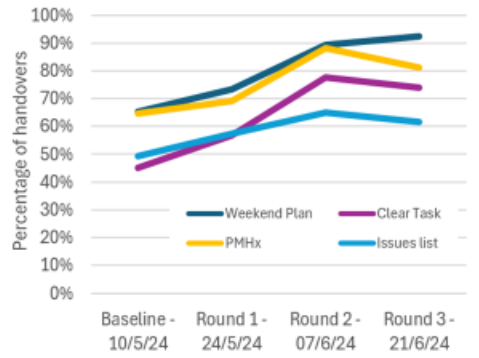
| | |
|---|---|
| **ROUND 1** | In-person training and reminders on a Friday afternoon |
| **ROUND 2** | Poster displaying handover protocol & weekly reminder email |
| **ROUND 3** | Handover 'champion' on each ward responsible for weekly check |

### POST INTERVENTION

#### DOCUMENTATION OF WEEKEND HANDOVER

**% of weekend handovers meeting audit criteria after each round of intervention**

| TIME | Weekend Plan | Clear Task | PMHx | Issues list |
|---|---|---|---|---|
| **Baseline** | 65% | 45% | 65% | 49% |
| **Round 1** | 73% | 57% | 69% | 58% |
| **Round 2** | 89% | 77% | 88% | 65% |
| **Round 3** | 92% | 74% | 81% | 62% |
| **CHANGE FROM BASELINE** | + 27% | + 29% | + 17% | + 12% |




Number of weekend handovers meeting audit criteria improved with intervention, particularly after round 2 (poster & email)

#### SUBJECTIVE QUALITY OF HANDOVERS & ON CALL EXPERIENCE

**100%** of on-call doctors felt the quality of weekend handover had improved (N=6)*

AVERAGE QUALITY SCORE **4.2/5**

| | Quality of weekend handover as scored by on call doctors | | | | |
|---|---|---|---|---|---|
| | *1 - Very poor* | *2 - Poor* | *3 - Okay* | *4 - Good* | *5 - Very good* |
| **Baseline (N=6)** | 17% | 50% | 33% | -- | -- |
| **Round 2&3 (N=6)** | -- | -- | -- | 83% | 17% |

**100%** of doctors graded handovers as 'Good' or 'Very Good' (N=6)*

*questionnaires from round 2 & 3 combined to make N = 6 to match baseline

## CONCLUSIONS: Our QIP improved consistency and quality of weekend handover, as well as the qualitative experience of on-call doctors

- Our data showed a single electronic handover was highly effective in terms of efficiency, uniformity and ease of access
- Attention to handover varied between doctors and wards – repetition of reminders is key, possibly more so than the format of the reminder
- The QIP is being expanded into the Geriatric Unit in A&E and the Orthogeriatric wards to promote consistency throughout the patient journey, as well as integrated into junior doctor induction to help sustain long-term changes to practice

REFERENCES:

1. Woolf SH, Kuzel AJ, Dovey SM, et al. A string of mistakes: the importance of cascade analysis in describing, counting, and preventing medical errors. Ann Fam Med 2004; 2(4): 317–326.
2. Perry S, Wears R, Patterson E. "High-hanging fruit: Improving transitions in health care". In: Henriksen K, et al. Advances in patient safety: new directions and alternative approaches (Performance and Tools), vol 3. Rockville: U.S. Agency for Healthcare Research and Quality; 2008. pp. 179–257.
1. Mehra A and Herein C. Improving hospital weekend handover: a user-centred, standardised approach. BMJ Quality Improvement Programme 2014;
2. National Institute for Health and Care Excellence. Chapter 32 Structured patient handovers guidelines. https://www.nice.org.uk/guidance/ng94/evidence/32-structured-patient-handovers-pdf-172597464671 [Accessed 15 August 2024]

# A Two Cycle Audit on End-of-Life Care: The Impact of Education on the Personalised Care Record on the Quality and Communication of Treatment Escalation Plans at End of Life

Site: Jersey General Hospital (JGH) Author: Dr Jessica Pearce

## Introduction

I designed this audit after finding treatment escalation plans (TEP) for end-of-life (EOL) patients were often not specific and hard to find in clinical notes.

The JGH Personalised Care Record (PCR) Policy for EOL[1] was developed to meet national guidelines[2-4]. In the last days to hours of life it replaces clinical notes to document communication and treatment decisions. I found this was not widely known and use could address the issues faced.

## Aims

100% of inpatients at the JGH whose death is expected should die with a PCR documenting the recognition of dying, DNACPR, TEP, and discussion with the patient and family.

**Standards**:

1) JGH PCR Policy[1]
2) LACDP One Chance To Get It Right, Priorities 1,2 & 5 [3].

## Methods

| | |
|---|---|
| 1st CYCLE | Retrospective audit of the last 30 deaths in the JGH from the 4th May 2022. |
| ACTION PLAN | Staff education on the use and access of the PCR. Completed April 2023. |
| 2nd CYCLE | Retrospective audit of 10 randomly selected deaths in JGH in Sep 2023. |

- Exclusion criteria for cases: unexpected deaths, deaths in ED or within 4hrs, children, suicides, and maternal deaths.
- An audit tool was developed guided by relevant questions in the National Audit of Care at the End of Life[5] tool.

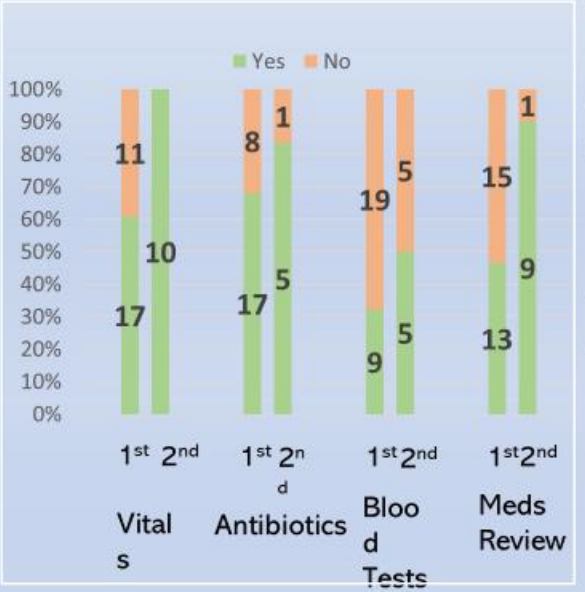
## Results

- In the 1st cycle, 2/30 cases were excluded from further study due to unexpected death, as care of the dying person cannot be evaluated if it was not recognised the patient was dying.
- The **use of the PCR improved significantly** after completion of the action plan, p= <0.001 using Fisher's exact test.
- Results show improvement in documentation of specific TEP parameters and highlight the importance of involving the patient in EOL discussions.
- The figure below presents the percentage compliance with the audit questions. Cases were excluded if not applicable, e.g. if patients did not have capacity for discussions or requested no NOK involvement.

**Figure 1**: Percentage compliance with audit questions in 1st & 2nd cycle

| 1st Cycle | | 2nd cycle |
|---|---|---|
| 4% | Use of the PCR | 60% |
| 93% | Recognition a patient may die | 100% |
| 100% | DNACPR | 100% |
| Recognition of dying & TEP discussed with: | | |
| 67% | Patient | 75% |
| 96% dying, 93% TEP | Family | 100% |
| 30% | Preferred place of care discussed | 60% |

**Figure 2**: Cases with documented evidence of specific parameters of treatment in TEPs




## Conclusion

- Improved staff education and access to the PCR significantly increased use.
- The impact of this included improving documentation on communication with the patient and family and the clarity of TEP decisions.
- Ongoing promotion of the PCR is required to ensure guidelines are being met, with an understanding that rapid deterioration will limit completion.
- As notes transition to online, translation of the document will be essential for continued success.

## Acknowledgements

Many thanks to Dr James Grose Project Supervisor & for the support of the JGH Clinical Audit Department.

## References

# Severe eczema is associated with prolonged reaction time and increased prevalence of depressive thoughts, but no changes in MRI measures of grey or white matter integrity

Betts JF[1,2,3], Croall ID[1], Hoggard N[1,2]

[1]Academic Unit of Radiology, University of Sheffield, U.K.; [2]Sheffield Teaching Hospitals NHSFT, U.K.; [3]Oxford University Hospitals NHSFT, U.K.

## BACKGROUND

Systemic inflammation in the pathogenesis of eczema may have implications beyond classical skin manifestations.

Associations of eczema with cardiovascular disease,[1] cancer[2,3] and dementia[4,5] have been identified.

A 27% increased risk of dementia has been reported among people with eczema compared with those without.[4]

## AIMS

To assess cognitive and neuroimaging features that may be relevant to developing dementia in people with severe eczema.

## METHODS

UK Biobank[6]

↓

People with severe eczema (n=76) matched with controls (n=142)

↓

Groupwise analyses of MRI brain data using FSL tools:
- *Voxel-based morphometry (VBM)*[7]
- *Tract-Based Spatial Statistics (TBSS)*[8]
- *BIANCA processing tool*[9]

↓

Measures of cognitive function and mental health compared

## RESULTS

### 1. Baseline characteristics

| Variable | Eczema (n = 76) | Controls (n = 142) | P value |
|---|---|---|---|
| Age | 61.53 (6.91) | 61.81 (7.18) | 0.778 (t test) |
| BMI | 25.33 (3.54) | 25.53 (3.46) | 0.679 (t test) |
| Sex (% female) | 53.9 | 52.1 | 0.796 ($\chi^2$) |
| HTN diagnosis (%) | 21.1 | 18.3 | 0.625 ($\chi^2$) |

*Table 1: Baseline characteristics of matched groups.*

### 2. White and grey matter integrity

There were no significant differences in:

a) VBM measures of grey matter volume;
b) TBSS measures of white matter integrity (Figure 1); or
c) Total white matter lesion burden (Figure 2) between groups.

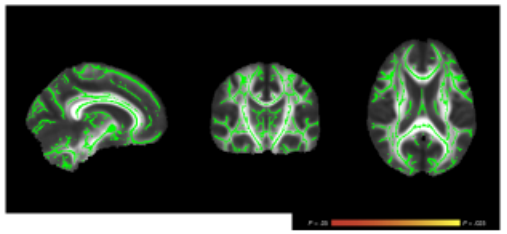
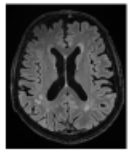


*Figure 1. No significant differences in axial/radial/mean diffusivity or fractional anisotropy between groups.*



*Example T2 FLAIR image*

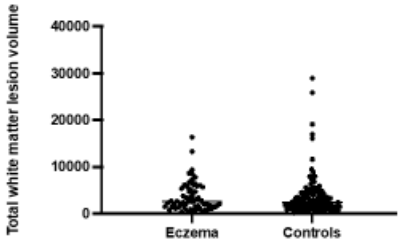



*Figure 2. No significant difference in total white matter lesion volume between groups (p=0.635).*

### 3. Cognitive function and mental health measures

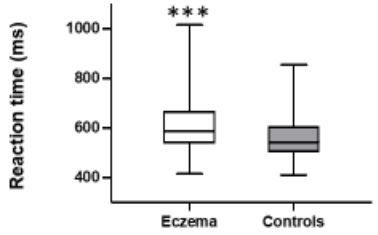



*Figure 3. Patients with eczema exhibited significantly slower reaction times when compared with controls (p<0.001).*

- Depressive thoughts were experienced by a significantly greater proportion of the eczema group (68.0%) compared with controls (47.4%; *p*=0.018).

## CONCLUSIONS

1. Subjects with severe eczema had slower reaction times and more depressive thoughts than controls, suggesting a significant functional impact in this group.
2. This was not accompanied by any differences in MRI measures of grey or white matter integrity in the brain.
3. Further work is warranted to assess potential secondary mediators and further refined study populations.

## REFERENCES

1. Silverwood RJ et al. BMJ 2018; 361: k1786.
2. Wang L et al. JAMA Dermatol 2020; 156: 158-171.
3. Mansfield KE et al. JAMA Dermatol 2020; 156: 1086-1097.
4. Magyari A et al. J Am Acad Dermatol. 2022; 87: 314-322.
5. Pan TL et al. Ann Allergy Asthma Immunol 2021; 127: 200-205.
6. Sudlow C et al. PLoS Med 2015; 12: e1001779.
7. M. Jenkinson et al. NeuroImage 2012; 62: 782-90.
8. Smith SM et al. Neuroimage 2006; 31: 1487-505.
9. Griffanti L et al. Neuroimage 2016; 141: 191-205.

# Initiation and continuation of heart failure treatments in an elderly population: a single-unit retrospective analysis

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Cardiology Department, Eastbourne District General Hospital, East Sussex Healthcare NHS Trust

NHS East Sussex Healthcare NHS Trust

## Introduction

Heart Failure with reduced ejection fraction (HFrEF) has four cornerstone medical therapies that are well supported by multiple randomized control trials (RCTs). Guidelines on up-titration have been scarce until STRONG-HF[1] demonstrated that intensive strategies over 2 weeks significantly reduced readmission rates, quality of life and all-cause mortality in a large population ranging from ages 18-85. Many clinical trials however do not study tolerability in the elderly as a primary population. Eastbourne has one of the highest median ages in England and we audited our local guideline directed therapy (GDMT)[2] initiation rates and assessed their continued tolerability over 12 months of follow-up.

## Methods

- **Patient group**: New primary admission diagnosis HFrEF, age >75
- **Patient Demographics**: 52 patients, mean age 83, mean LVEF 29%
- **Timescale**: May 2022 – May 2023
- **Data**: Digitalised inpatient hospital and GP records of medications
- **Primary Outcome**: Proportion of patients on GDMT at 1 year post discharge (mean 410 days)

## Results

**Patient Group at follow up**: 12 patients died, 2 no health records available – 38 remaining patients
**3 Pillar Treatment** – 2 pre-admission, 31 on discharge, 25 at follow up – demonstrating general tolerability
**4 Pillar Treatment** – 0 pre-admission, 12 on discharge, 14 at follow-up – demonstrating further community initiation
**Mean Medication dosing** – Ramipril 3.1mg OD, Candesartan 5.2mg OD, sacubitril/valsartan 30.3/32.3 BD, bisoprolol 3.9mg OD, spironolactone 17.9mg OD, dapagliflozin 10mg OD

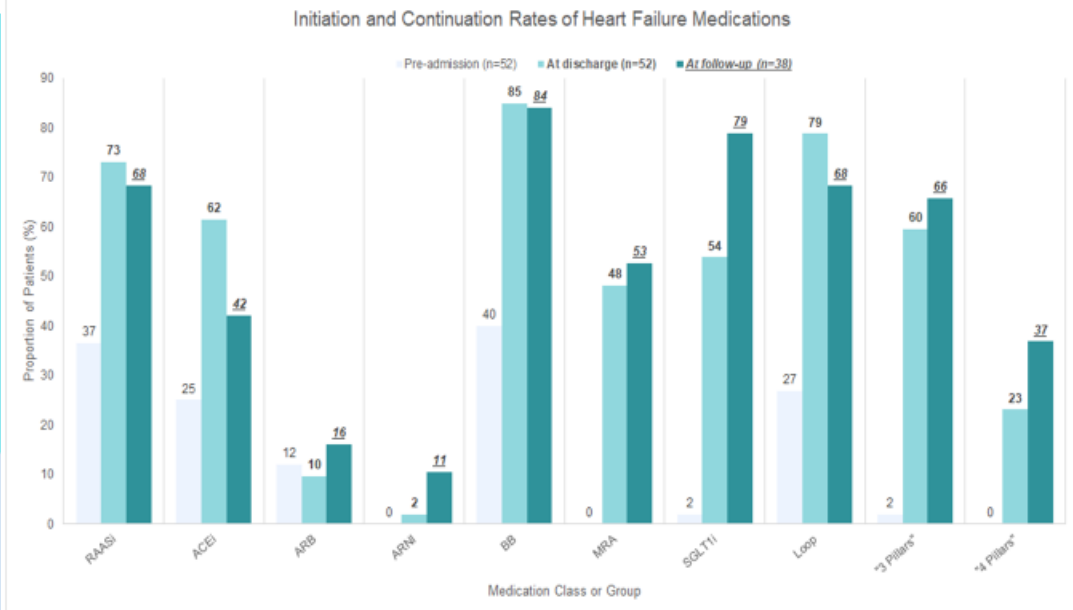



**Figure 1** - *Proportion of patients prescribed each medication or class pre-admission, on discharge and at follow-up.*

## Discussion

- Good initiation and continuation rates of the main pillars of HFrEF GDMT at 12 months follow up but below recommended doses in an elderly population
- Further data analysis needed to understand the reasons for limited community up titration such as electrolyte derangements, postural hypotension and kidney disease
- Whilst RCTs include our target population, they form part of the subgroup analysis and not the primary target

## References

1) Mebazaa, Alexandre et al. "Safety, tolerability and efficacy of up-titration of guideline-directed medical therapies for acute heart failure (STRONG-HF): a multinational, open-label, randomised, trial." *Lancet (London, England)* vol. 400,10367 (2022): 1938-1952. doi:10.1016/S0140-6736(22)02076-1
2) McDonagh, Theresa A et al. "2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure." *European heart journal* vol. 42,36 (2021): 3599-3726. doi:10.1093/eurheartj/ehab368

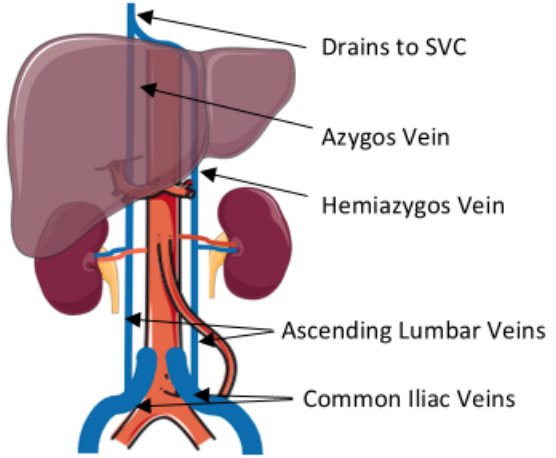
# Congenital absence of inferior vena cava contributing to treatment refractory deep venous thrombosis: a case report

Co-Authors: Dr. Joseph Foster, Dr. James Cave

## Introduction

This case presentation describes treatment refractory deep vein thrombosis (DVT) in a young male with congenital absence of the inferior vena cava, also known as **IVC atresia** (figure 1). IVC atresia is rare but is thought to be a contributing factor in **4-5% of young people diagnosed with DVT**.

## IVC atresia anatomy (Figure 1)




## Case Report

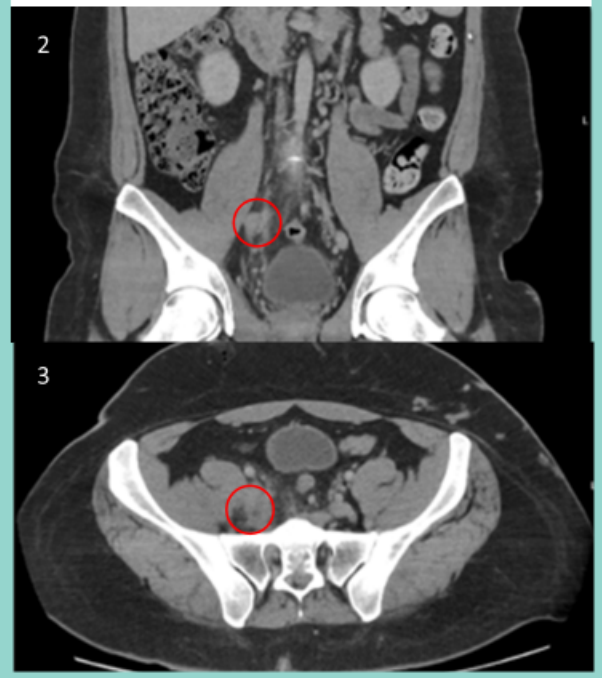
A male in his mid-twenties with a history of previous DVT and IVC atresia presented with loin pain and concerns of recurrent DVT. He was **compliant with his direct oral anticoagulant (DOAC) therapy** and was initially re-assured that this was unlikely. He re-presented the following day and initial workup with bilateral lower limb doppler was **negative for acute DVT**.

However, a subsequent CT venogram revealed an **acute thrombosis** of the right internal iliac vein (Figures 2&3). He was then offered a choice between warfarin and treatment dose subcutaneous dalteparin and opted for the latter. This was initiated and he was discharged.

He subsequently re-presented with leg swelling and repeat doppler showed **extension of the thrombus** distally. Following this he was started on **warfarin** with a target INR of 3-4 and had **improved clinically** at follow up with vascular surgeons who advised conservative management.

## CT Venogram (Figures 2&3)

CT Venogram (coronal and axial views) showing distension of the right internal iliac vein with associated surrounding fat stranding.




## Discussion

Our case study has learning points for clinicians, particularly those working in ambulatory care who are likely to frequently diagnose DVT.

Patients with strong risk factors for DVT such as IVC atresia should be considered for definitive investigation of **treatment refractory DVT**.

There are currently no best practice guidelines for pharmacological management of these patients. A retrospective cohort study found no recurrence of DVT in patients with IVC atresia taking a DOAC at variable follow up length (n=7). This **contrasting case study** suggest more research is needed in this area to determine if DOACs are appropriate for these patients

Patients with IVC atresia are **not at risk of a pulmonary embolism** as a result of DVT migration.

## Acknowledgements & References

Figure 1 created using images from Servier Medical Art with permission, references available on request.

## Timeline

1. Young male on a DOAC with IVC atresia presents to ambulatory
2. Bilateral lower limb Doppler ultrasonography is negative for acute DVT
3. CT Venogram reveals acute DVT of the right Internal Iliac Vein
4. Therapy changed from DOAC to Dalteparin
5. 3 weeks later is found to have distal extension of the thrombus on doppler
6. Patient started on warfarin and has clinical improvement at follow-up

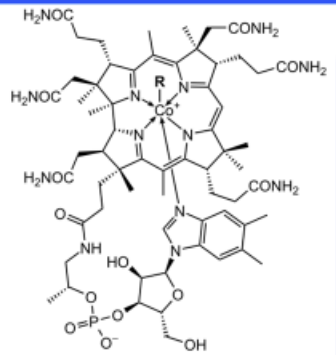
# An audit of B12 testing in light of the new NICE guidelines

Dr. Joshua Feyi-Waboso Royal Cornwall Hospital Trust
Dr. Alex Burns Threespires GP Practice

the three spires medical practice

## 1 Introduction

Vitamin B12 deficiency has the potential to cause neuropathies and increases the risk of infections as well as other pathology. Incidence of B12 deficiency is approximately 6% in younger adults and 20% in those over 60 in the US and UK [1]. According to new guidelines released by NICE in March 2024, individuals presenting with at least one symptom or sign and one risk factor should be tested for B12 deficiency [1,2]. Having noticed a trend of increased B12 testing at our primary care network, it was of interest to compare our current B12 testing behaviour with the new guideline [3].




R = 5'-deoxyadenosyl, $CH_3$, OH, CN

**The risk factor drugs for B12 deficiency are;**

- Colchicine
- H2-receptor antagonists (famotidine, cimetidine etc)
- Metformin
- Phenobarbital
- Pregabalin
- Primidone
- Proton pump inhibitors (omeprazole, lansoprazole etc)
- Topiramate

## 2 Methods

Data was gathered from a primary care network (PCN) made up of 39,000 patients. Two retrospective searches were conducted between February and May 2024, each involving 50 patients. Inclusion criteria for the first group was less than 40 years old and evidence of a B12 test. Their medical records were reviewed to find out if there was a sign +/or symptom of B12 deficiency and presence of a risk factor. Inclusion criteria for the second group were patients with a diagnosis of anaemia (sign of B12 deficiency) and if they were taking a medication associated with B12 deficiency (risk factor). Results focused on if there was a B12 test performed and the time taken to carry out a B12 test.

## 3 Results

**Figure 1.**
Proportion of B12 tests that met the full criteria

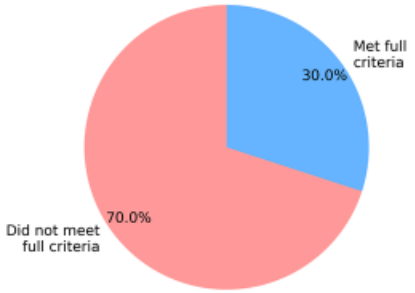



**Figure 2.**
Why was criteria not met

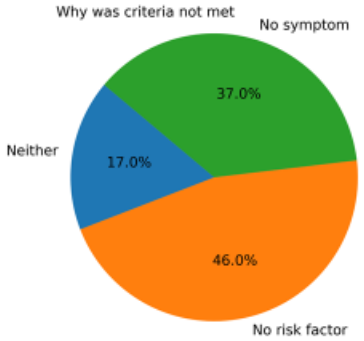
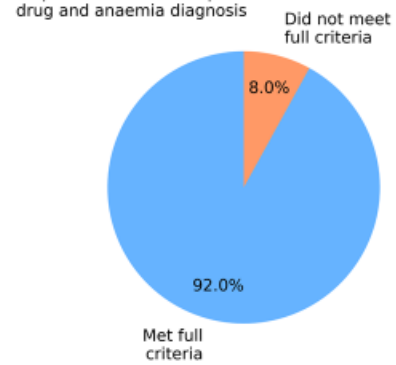



**Figure 3.**
Proportion of B12 tests post risk factor drug and anaemia diagnosis




Among the first group, 30% met the full criteria for having a B12 test and 70% did not, indicating a potential for over testing (Figure 1). Of those tested, 2 were B12 deficient. When reviewing why criteria wasn't met, 46% did not have a significant risk factor compared to 37% who did not have a specific sign or symptom. 17% had neither a sign, symptom nor risk factor (see Figure 2). In the second search, 92% had a B12 test done and 8% had not, indicating under-testing in this group (see Figure 3). The time it took to have a B12 test since having anaemia and being on a risk factor medication ranged from immediately to 250 months.

## 4 Discussion

The findings of our audit suggest there is a potential for over testing and under testing in both groups. As clinicians, we have the potential to be more focused on symptoms compared to risk factors, which can lead to over testing. The implications for over testing are a misuse of clinical time and resources, potential harms to the patient of over-testing, over-treating and over-medicalisation. Regarding the delays in B12 testing for the at-risk group, it could be because chronic anaemia can often go unnoticed and when a risk factor medication is commenced, the initial response is not necessarily to think to test for B12. The implications for under testing can lead to a lack of treatment where it is necessary.

## 5 Conclusion

Considering the new guidelines, there is potential for under and over testing of B12 deficiency. The results show that as clinicians we can be more focused on symptoms compared to risk factors which can lead to over testing. We recommend education on specific risk factors that contribute to B12 deficiency which would aid in the decision making when testing for B12.

## 6 References

1) S Sands T, Jawed A, Stevenson E, Smith M, Jawaid I. Vitamin B12 deficiency: NICE guideline summary BMJ 2024; 385 :q1019 doi:10.1136/bmj.q1019

2) Langan R C. The persistent challenge of diagnosing and treating vitamin B12 deficiency BMJ 2024; 385 :q1262 doi:10.1136/bmj.q1262

3) National Institute for Health and Care Excellence. Vitamin B12 deficiency in over 16s: diagnosis and management. NG239. 2024. https://www.nice.org.uk/guidance/ng239

Contact me by scanning the QR code

# Genetic associations between clonal haematopoiesis and polymyalgia rheumatica: a Mendelian randomization study

Joshua M Heihre, Benjamin P Zuckerman

## Introduction

Clonal haematopoiesis, somatic mutations and mosaic chromosomal alterations in blood cells are associated with ageing and pathological immune dysfunction, such as giant cell arteritis (1).

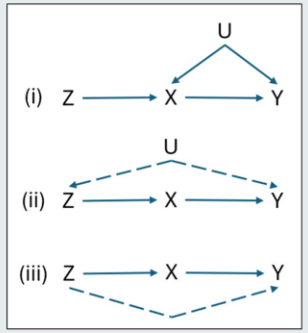
Polymyalgia rheumatica, like temporal arteritis, is an inflammatory process affecting an elderly population.

We sought to understand whether these blood stem cell aberrations are genetically associated with polymyalgia rheumatica using Mendelian randomization.

## Methods (1)

Mendelian randomization (MR) uses germline variants as instrumental variables to proxy an exposure and evaluate evidence for a causal effect of the exposure on an outcome. Weak instrument bias (Figure 1) was accounted for through statistical tests.

Genetic association data for clonal haematopoiesis were taken from 200,453 individuals from UK Biobank participants.




1. *The genetic instrument (Z) is strongly associated with the exposure (X)*
2. *No confounders of the instrument (Z) and the outcome (Y) exist*
3. *No causal pathway from the instrument (Z) to the outcome (Y) exists, other than through the exposure (X).*

*Figure 1. Instrumental variable assumptions required for causal inference in MR*

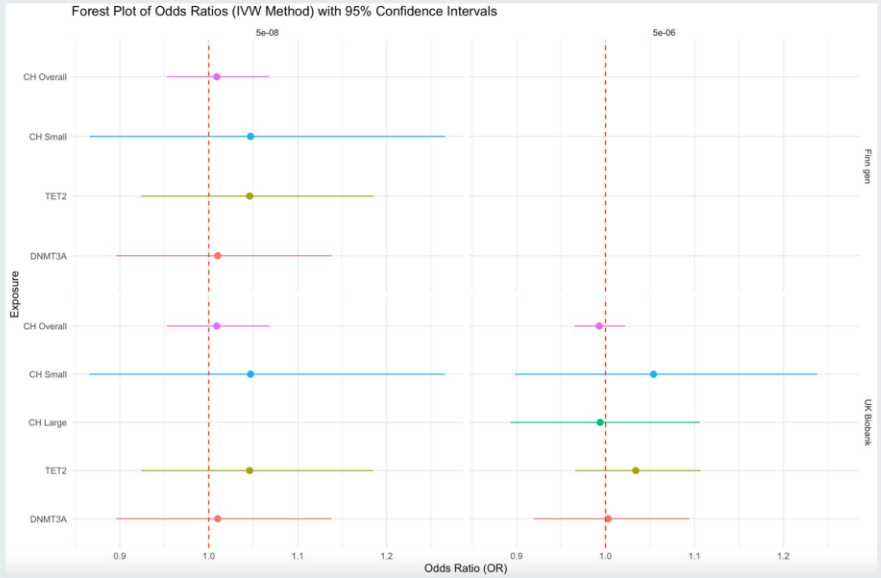



*Figure 2. Forest plot of OR using inverse weighted method (IVM) assessing the relationship between clonal haematopoeisis genes and PMR.*

## Methods (2)

1063 individuals with PMR were identified in the UK Biobank with replica dataset also obtained from the FinnGen database.

The Wald ratio or inverse variance weighted methods were used to estimate causal effects. We applied colocalization and pleiotropy-robust methods as sensitivity analyses for confounding.

## Results

We found no association between any genetic proxy for clonal haematopoiesis and polymyalgia rheumatica (Figure 2).

## Conclusion

This study provides robust genetic evidence suggesting that clonal haematopoiesis is unlikely to have a role in the pathogenesis of polymyalgia rheumatica.

Alternative mechanisms that contribute to its pathophysiology, such as non-clonal immune aging and inflammatory pathways may provide more promise in identifying PMR risk factors and therapeutic targets.

**Contact**
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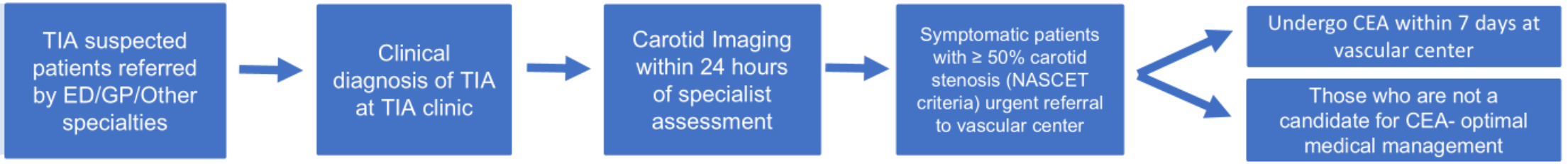
**References** 1. Robinette ML, Lachelle D, et al. Somatic TET2 Mutations are Associated with Giant Cell Arteritis. medRxiv 2023.07.26.23292945;doi:https://doi.org/10.1101/2023.07.26.23292945

# A quality improvement project to improve the quality of referrals to TIA clinic and assessment of suspected TIAs, carotid imaging and vascular intervention

Judith Oguguo, Astly George, Joel Thomas
*Wrexham Maelor Hospital*

GIG CYMRU NHS WALES

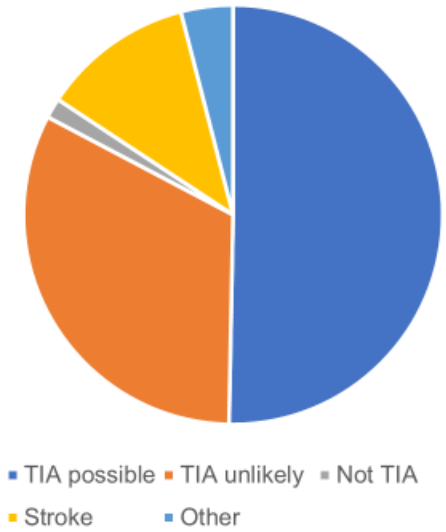
*Figure 1: Schematic representation of NICE guidelines for TIA*



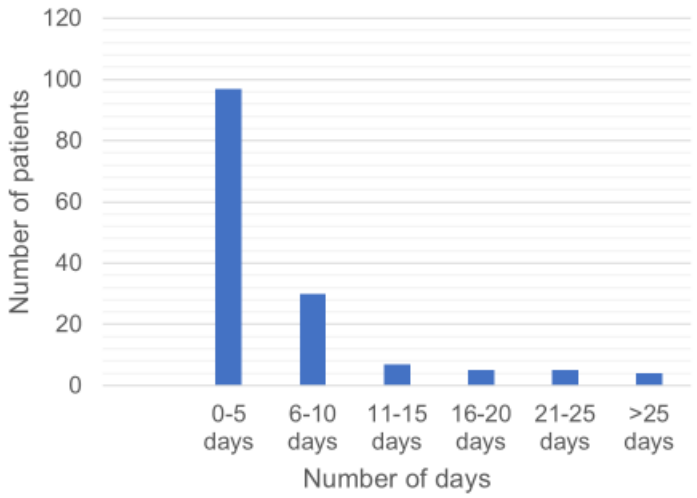

Our objective was to improve the quality of TIA referrals, reduce assessment times in the TIA clinic, and evaluate the timeframe for vascular specialist review for CEA in symptomatic patients.

198 patients had carotid imaging (US/MR/CT). 18 patients (9%) had significant stenosis of ≥50%. Of these, ECA stenoses, complete occlusions and stenosis of the asymptomatic side were excluded to meet CEA criteria, leaving 5%. 40% of patients meeting criteria underwent CEA and the remaining 60% were for best medical therapy.

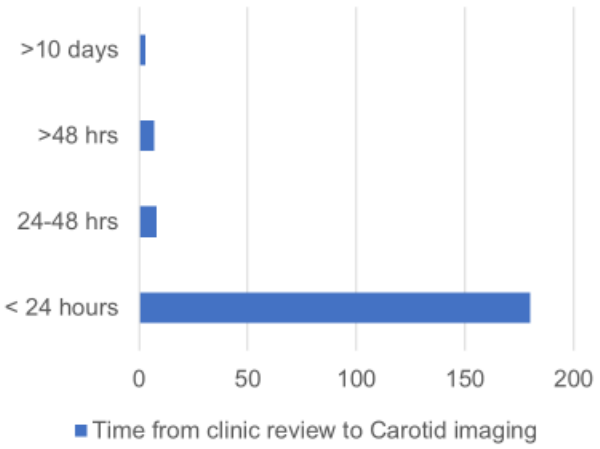
## Diagnosis at TIA clinic



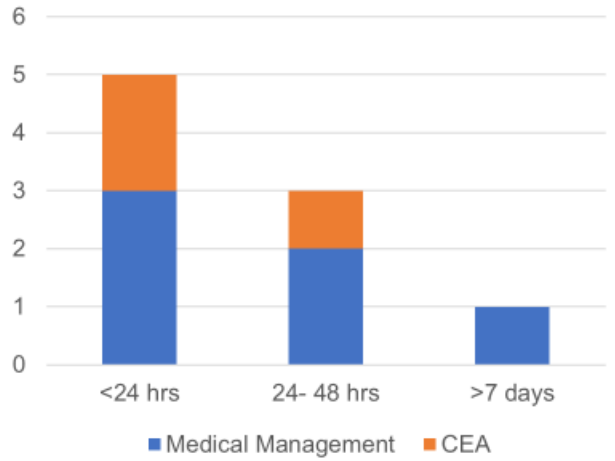

## Time from referral to clinic review date




## Time from clinic review to Carotid imaging




## Time from Carotid Imaging to Intervention




Of the 315 patients, 58.7% were referred by GPs, 33.9% by ED and the rest by other specialties. A total of 18.4% were seen by the following day, 59% within 1 week, 20% in 4 weeks and the rest >4 weeks. Of the referred patients, 45.7% were diagnosed possible/definite TIA and 32.3% TIA unlikely.

Most patients referred to the TIA clinic are seen promptly, though a significant proportion are found to have alternative diagnoses. Those with confirmed TIA receive timely carotid imaging, and referrals for vascular services are made in accordance with NASCET criteria. However, only a small number of patients proceed to CEA.

# Uncommon Stroke: Symptomatic Sub-occlusive Non-ischemic Thrombus in a Fenestrated Basilar Artery

*(Justin K Samuel, James Beckett, Kumar Balakrishnan)*

### Patient Presentation

A 28-year-old right-handed female

- Dizziness, nausea, vomiting
- Headache, photophobia
- Phonophobia, fever
- H/o migraines, recurrent first-trimester miscarriages and syncopal episodes

### CT Brain Results

- Unusual area of calcification in the basilar artery
- No Ischemic injury
- CT angiogram: initially reported as 'dissection of the basilar artery,' later identified to be a fenestration

### Neurological Finding

- Nuchal rigidity, partial facial paralysis, dysarthria
- NIHSS score of 14

### MRI/A Findings

- MRI/A: flow void in TOF, which was later identified as a free-floating thrombus (FFT)
- No ischemic insult

### Lumbar Puncture

- Mildly elevated white cell counts, leading to empirical treatment for encephalitis

**High dose Aspirin Initiation**

**Emergence of New Symptoms**

- Developed new neurological symptoms
- CT/A brain now revealed the free-floating thrombus

**Thrombolysis**

- Performed within the window period

**Thrombectomy**

- Deteriorated in 12hrs,developing **opthalmoplegia** and **quadriparesis**

**Post-procedure MRI**

- No ischemic insult, NIHSS score of 2

Fig.1

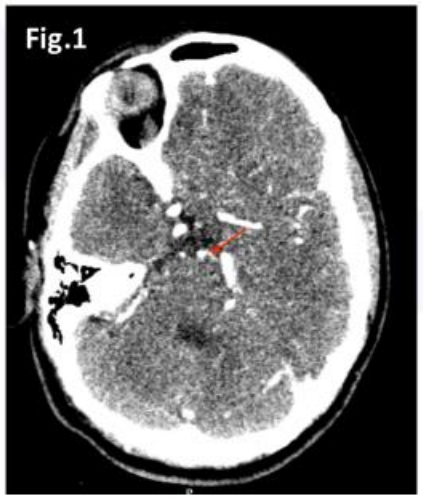


Fig.2

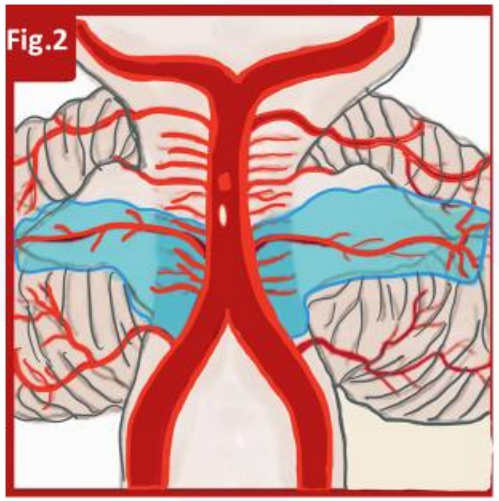
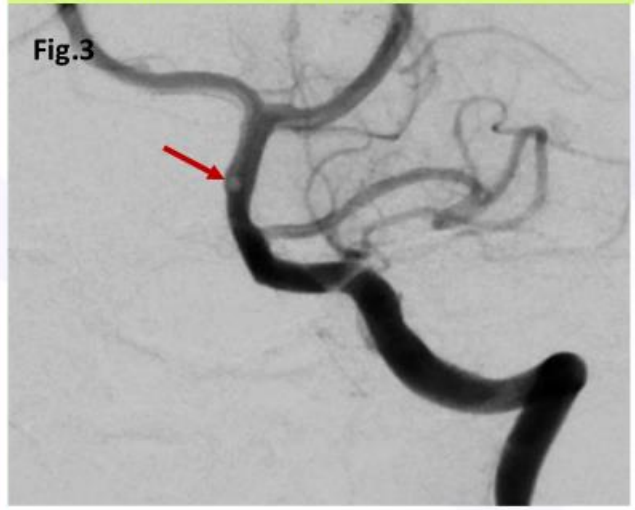


Fig.3



### Discussion

- **FFT** is rare vascular condition usually detected in the internal carotid artery.
- There exists a correlation between FFT in the posterior circulation and elevated mortality rates.[1]
- Acute and fluctuating neurological symptoms are typical in patients with basilar artery thrombosis.
- According to Dong J, Mei et al basilar artery fenestration may increase the likelihood of thrombus and ischemic events.
- Patient's interval development of *ophthalmoplegia* with *quadriparesis* shows a central organic pathology rather than functional neurological disorder, hence underwent thrombectomy.
- According to Bhatti AF et al, the majority of symptomatic FFT cases were managed surgically.
- There is a need for guidelines on the management of asymptomatic /incidental FFT.
- The optimal management approach for FFT is unclear due to limited high-quality research.

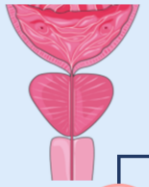
**References:**

1. Buchan A, etal. Intraluminal thrombus in the cerebral circulation.

# 5-Year biochemical control and long-term outcomes of node-positive prostate cancer patients treated with combined therapy – A Clinical Audit

Justin Varghese[1], Barber J[2], Staffurth J[2] , Tanguay J[2], Sweeney L[2], Harris L[2], Palaniappan N[2].
(1 Medical Student at Cardiff University, Cardiff; 2 Velindre Cancer Centre, Cardiff)

## BACKGROUND



### OVERVIEW

**Most common male Ca**
~55k new UK cases/year
~12,000 deaths annually

**Early detection** improves outcomes
**>94.9%** survival rate at 5 years when Dx **at 65-74**(1)

**Survival** influenced by **health**, **stage** at Dx, and treatment **response**

### TREATMENT OPTIONS

**Radical Prostatectomy**
**Not suitable to all** locally advanced disease
↑↑ Risk of post-op **urogenital complications**

**Radical Radiotherapy**
**Similar outcomes** to surgery
↑↑ Risk of **GI side-effects**

**Hormone therapy**
↑↑ **Cancer cell sensitivity** to radiation and reduces tumour size
Adjuvant; Neo-adjuvant; Androgen deprivation therapy

**Active Surveillance**
Not as effective comparatively
↑↑ **Risk of disease recurrence**

**Combined RT + Hormone therapy**
Wang et al. (2020) meta-analysis shows **improved survival** for high-risk locally advanced cases **(Gleason score 8+)**(2)

## METHODS

### PATIENT SELECTION

**Retrospective analysis** of prostate Ca patients treated at VCC - Jan 2017-2019 **(n=240)**

**Inclusion criteria:** Histology and radiology confirmed **node +ve Pts w/o metastasis** (n=48)

### DATA COLLECTION

**Extracted data** from VCC Clinical Workstation: **PSA levels, treatment timelines, Gleason grading, follow-up outcomes**

### STATISTICAL ANALYSIS

Calculated **biochemical relapse-free survival** (BRFS) and **overall survival** (OS) using SPSS and Excel

## CONCLUSION

**1) NG 131:**
**Combined therapy** for **intermediate to high-risk** prostate Ca + up to **3 years adjuvant therapy.**(6)

- **Prompt neoadjuvant therapy initiation in majority.** Most delays were unavoidable
- Neo-adjuvant therapy **<3 years had ↑↑ rates of relapse**

**2)** Monitor post-treatment **recurrence with PSA kinetics + physical exams;** prompt radiological assessment is advised.(7)

- Clinicians had **lower thresholds when referring** for **further assessment** pre and post Dx
- Hence patients received **prompt assessment** and **initiation of therapy**

**3)** Studies indicate:
**- ↑↑ OS + BRFS** with **biochemical control**
**- Combining** radiotherapy with hormone therapy is **effective**.(8-10)

- **Similar OS and BRFS rates** when compared to literature
- Variations can be attributed to **different BCR definitions and follow-up periods**

## RESULTS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Mean Age** | 69 years (range 45-87) | | **RT Doses** | **60Gy** | 33 patients | | |
| **Median Follow-Up** | 79.7 months | | | **55Gy** | 10 patients | | |
| | | | | **78Gy** | 4 patients | | |
| **Gleason Score** | **score 7** | 19 patients | **Patient Status** | 35 alive | 13 deceased | | |
| | **score 9** | 20 patients | | | 6 malignancy | 3 disease progression | 4 unrelated |
| **Histology Findings** | **T3bN1** | 25 patients | **Biochemically Relapsed** | 21 patients (43.8%) | | | |

**Figure 1: General Findings**

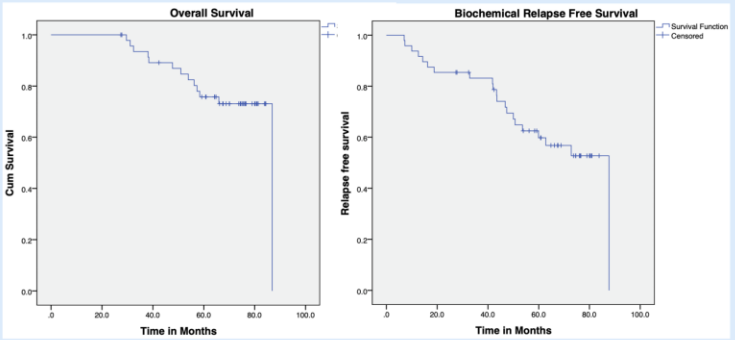



**Figure 2:**
OS = 72.9%
5-Year OS = 77.1%

**Figure 3:**
BRFS = 56.3%
5-Year BRFS = 62.5%

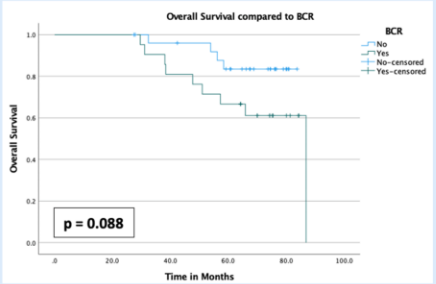



**Figure 4: Biochemical Control Survival Rate**
Controlled = 85.2%
Relapsed = 66.7%

**PREDICTORS OF SURVIVAL**
**Significant Predictors**:
- Age at diagnosis (p=0.022)
- Duration of hormone therapy (p=0.034)

**No other significant predictors identified**

## REFERENCES

1. Cancer Research UK. Prostate Cancer Statistics 2024 [20 Jun 2024]. Available from: https://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/prostate-cancer#heading-Five.
2. Wang Y, Gui H, Wang J, Tian J, Wang H, Liang C, et al. Comparative Efficacy of Combined Radiotherapy, Systemic Therapy, and Androgen Deprivation Therapy for Metastatic Hormone-Sensitive Prostate Cancer: A Network Meta-Analysis and Systematic Review. Front Oncol. 2020;10:567616.
3. National Institute for Health and Care Excellence. Prostate cancer: diagnosis and management. NICE; 2021 December 2021.
4. Van den Broeck T, van den Bergh RCN, Briers E, Cornford P, Cumberbatch M, Tilki D, et al. Biochemical Recurrence in Prostate Cancer: The European Association of Urology Prostate Cancer Guidelines Panel Recommendations. Eur Urol Focus. 2020;6(2):231-4.
5. Herbert C, Liu M, Tyldesley S, Morris WJ, Joffres M, Khaira M, et al. Biochemical control with radiotherapy improves overall survival in intermediate and high-risk prostate cancer patients who have an estimated 10-year overall survival of >90%. Int J Radiat Oncol Biol Phys. 2012;83(1):22-7.
6. Seisen T, Vetterlein MW, Karabon P, Jindal T, Sood A, Nocera L, et al. Efficacy of Local Treatment in Prostate Cancer Patients with Clinically Pelvic Lymph Node-positive Disease at Initial Diagnosis. Eur Urol. 2018;73(3):452-61.
7. Marvaso G, Montesano M, Corrao G, De Angelis SP, Gandini S, Mazzola GC, et al. Adjuvant radiotherapy in node positive prostate cancer patients: a debate still on, when, for whom? BJU Int. 2021;127(4):454-62.


**ACKNOWLEDGEMENTS**
**To my tutor and the VCC Audit office for their guidance and support**

# Getting Weaker and Breaking Up, Followed by Cure. An Interesting Case of Oncogenic Osteomalacia Inspiring a Patient Safety Audit on Hypophosphatemia at a District General Hospital

RCP
Med+
2024

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NHS
East Suffolk and North Essex
NHS Foundation Trust

## Background

Oncogenic Osteomalacia or Tumour Induced Osteomalacia (TIO) is a paraneoplastic syndrome characterised by bone pain, fractures and muscle weakness.

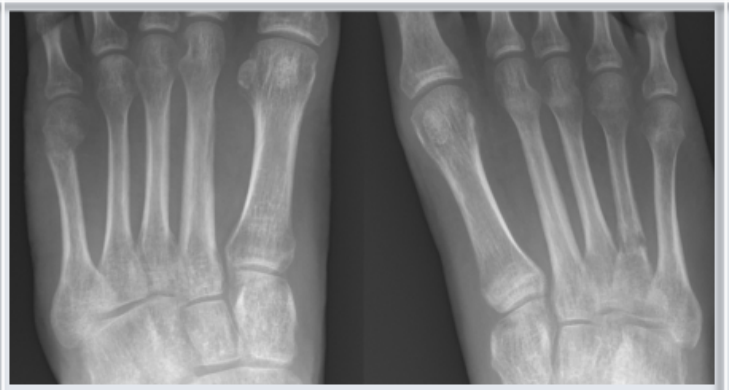
t is caused by tumoral overproduction of fibroblast growth factor 23 (FGF-23) producing hypophosphatemia and Osteomalacia. The tumour is usually benign and runs an indolent course.

## Objective

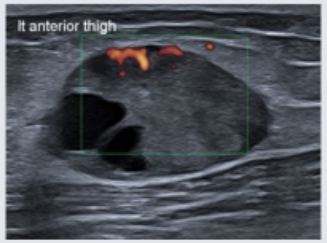
We present an interesting case of hypophosphatemia which led us to conduct an audit on management of hypophosphatemia in patients admitted at our hospital.

## Case Presentation

A 39 years previously fit male presented with heel pain and declining general strength for 2 years. There was no family history of metabolic bone disease, GI losses or alcohol intake. He sustained three fragility fractures of metatarsals and one of pubic ramus over two years. Bloods showed high ALP 209 (30-130), normal calcium, normal PTH and persistently low phosphate of 0.29mmol/L (0.8-1.5) despite phosphate replacements.



Fasting TMP/GFR (Tubular Maximum Phosphate Reabsorption per litre GFR) was low at 0.36mmol/L (0.9-1.35), and fractional excretion of phosphate (random urine) at 28.8%. This was suggestive of renal phosphate wasting. Patient had low 1,25 (OH)2 Vit D at 27pmol/L (43-144) and optimal 25-(OH)-Vitamin D levels consistent with reduced 1-alpha hydroxylase activity (renal cause). Fibroblast Growth Factor-23 (FGF-23) was high at 399RU/ml (<100). Fortunately, patient noticed a left thigh lump present for 4 years.




The lump was 3.5cmx3.2cmx2cm in subcutaneous plane on US and confirmed by MRI. Biopsy confirmed benign lesion and complete excision was done. A diagnosis of TIO was made.

Patient had dramatic improvement in muscle strength as phosphate levels normalised within few days post-op. 1,25(OH)2 Vit D and ALP normalised in few weeks. Oral phosphate and vit D treatment stopped. He continued to have normal phosphate and FGF-23 levels on follow-up signifying no recurrence.

Average time between symptom onset and diagnosis of TIO is 2.5 years and further 2.5 years for tumour localisation. The delay was minimal in our case as tumour was superficial. The main differential is X-linked hypophosphatemia. Main findings are low serum phosphate, low/normal 1,25-(OH)2-Vit D, reduced TMP/GFR, elevated FGF-23, normal serum calcium and 25-(OH)-Vit D and elevated ALP. Non-localised TIO can be treated with phosphate, vitamin D and Burosumab

## Methods

We carried out an audit on management of hypophosphatemia in Colchester General Hospital following the case which comprised of six-months data of in-patients with low phosphate.

**Table 1: Phosphate replacement and outcome in patients with Severe hypophosphatemia**

| Diagnosis | Phosphate Replacement given | Outcome |
|---|---|---|
| DKA | No | Home |
| DKA | No | Home |
| DKA | No | Home |
| SBO | No | Home |
| Sepsis COVID | No | Home |
| LBO Post op | No | Home |
| Paraparesis/Vertebral lesion | No | Home |
| Cholangitis | No | Home |
| DKA | Yes | Home |
| DKA | Yes | Home |
| DKA | Yes | Home |
| DKA | Yes | Home |
| Myeloma/Sepsis | Yes | Home |
| DKA | Yes | Home |
| GI Ulcer/Vomiting | Yes | Home |
| Burns/Intubation | Yes | Home |
| ALD | Yes | Home |
| Chemo/Diarrhoea | Yes | home |
| UGI Bleed | Yes | Home |
| Indapamide | Yes (Oral) | Home |
| | | 20 |

| Diagnosis | Phosphate Replacement given | Outcome |
|---|---|---|
| Sepsis | No | RIP |
| Lymphoma/Sepsis | No | RIP |
| DKA | No | RIP |
| Met Bladder CA/Unwell | No | RIP |
| DKA | Yes | RIP |
| HCC/Hepatic failure | Yes | RIP |
| Met CA/C. Diff diarrhoea | Yes | RIP |
| Met Bladder CA/Liver met | Yes | RIP |
| Sepsis Multi-organ | Yes | RIP |
| Cirrhosis | Yes (Oral) | RIP |
| Lung CA/Metabolic acidosis | Yes (Oral) | RIP |
| | | 11 |

There are no national guidelines for hypophosphatemia. Our trust guidelines recommend treating symptomatic mild-moderate hypophosphatemia (0.3-0.59mmol/L) with oral Phosphate-Sandoz (1-2TDS) & Severe hypophosphatemia (<0.3mmol/L) with IV Phosphate-Polyfuser.

## Results

We identified 361 patients with phosphate <0.5mmol/L(Moderate hypophosphatemia). 31 patients had Severe Hypophosphatemia (<0.3mmol/L), 20 discharged and 11 patients passed away. 12 patients (38%) did not receive any phosphate correction. All patients Most of patients treated were not in compliance with trust guidance.

## Conclusions

We presented the findings in our trust grand rounds and educated clinicians the importance of managing underlying causes of hypophosphatemia and follow trust protocol.

National guidelines in hypophosphatemia management would help standardise care in patients.

## References

Florenzano P, Hartley IR, Jimenez M, Roszko K, Gafni RI, Collins MT. Tumor-induced osteomalacia. Calcif Tissue Int. 2021;108(1):128-142

# The Butterfly Project – Prioritising End of Life Care on the Ward

Kate Hanwell (Clinical Fellow Palliative Care), Camilla Lonngren (SCF Acute Medicine), Mark Lander (Consultant Acute Medicine), Louise Robinson (Specialist Palliative Care Consultant)


## Introduction

A London hospital secured a charitable grant to create dedicated rooms for patients at the end of life (EOL) on the Acute Medical Unit (AMU) and several downstream wards. These 'Butterfly Rooms' (BRs) are part of a suite of measures to support the quality of care for dying patients and those important to them. This project aimed to explore the use of these rooms and potential impact on the quality of EOL care delivered.

## Methods

Proportionally, the majority of deaths in the hospital occur on AMU; therefore, this ward was the initial focus of the project. Retrospective data between the dates 01/09/22 – 30/12/22 and 01/09/23 - 30/11/23 was collected from electronic patient notes looking at:

- the proportion of deaths in the unit that occurred in the BR compared to other locations
- evidence of personalised care plans in the last days of life
- length of time the BR was occupied by a dying patient compared with other indications for the use of this side room

An awareness and education campaign around the use of BRs and individualised care planning at the EOL took place on AMU between January and September 2023.

Following two audit cycles on AMU the project expanded to audit the use of the BRs on downstream wards in addition to AMU.

## The Butterfly Rooms

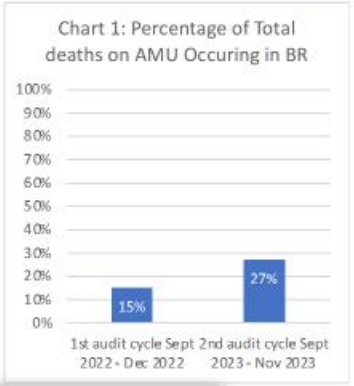
These rooms have been designed by ward staff, Specialist Palliative Care team and patient representatives.

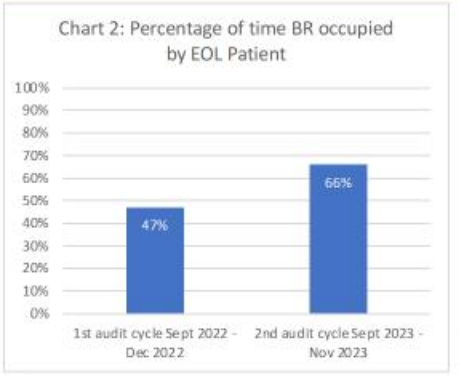
The rooms have been designed with the aim to make it feel non-clinical and personal - less like a hospital environment. Features of nature are a prominent theme, reflected in the specially designed light boxes that are mounted into the ceiling.

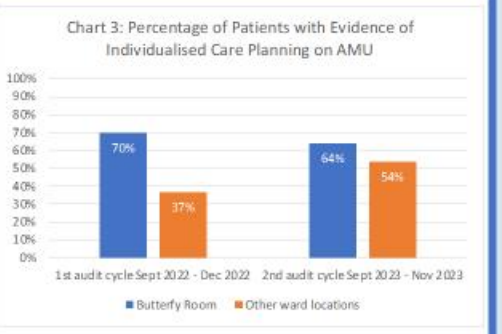
The room also has a private bathroom, a fridge and a recliner chair for relatives to stay overnight.

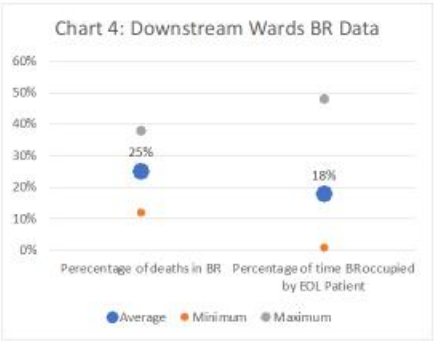

*The Butterfly Effect*
*"A situation in which an action or change that does not seem important has a very large effect"*
*Cambridge Dictionary*

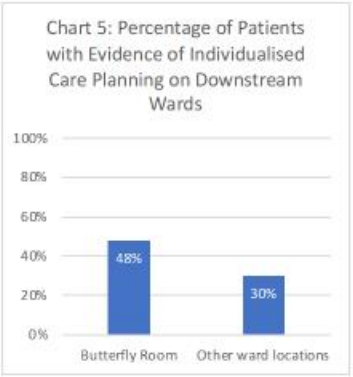
## Results AMU




## Discussion

This project demonstrates the benefit of a dedicated space for dying patients on hospital wards. Proportionally, more patients who died in a BR had an individualised care plan – a NICE quality standard for the care of dying adults. Following the awareness campaign on AMU the overall use of individualised care plans for the last hours/days of life increased and utilisation of the BR improved. The use of the BRs and individualised care plans on the downstream wards was lower than on AMU but the use of individualised care plans was still higher for patients in the BR. More work is needed to ensure this valuable resource is prioritised for its purpose and to evaluate other potential benefits it has had on the wards.

## Final Words

Following the opening of the AMU Butterfly Room, and the awareness campaign AMU have secured funding for a second Butterfly room. This is complemented by a number of other initiatives, including "Butterfly volunteers" who offer companionship to those in the last days of life, the creation of EOL boxes which can bring some elements of the BR into other side rooms. Staff have also come forward wishing to be end of life ambassadors for the ward and the Specialist Palliative Care Team have put together a formalised programme to help their development.

The introduction of a dedicated EOL room on AMU has had far reaching consequences beyond the room itself. Not only has it improved patient care but it has also enhanced staff confidence in delivering EOL care. This project is an example of the "butterfly effect", a relatively small change can have far reaching consequences.

# Identifying and coding patients appropriate for the gold standard framework on discharge from an inpatient gastroenterology ward: A quality improvement project

Dr Katie Edwards and Dr Charlotte Brighton, Salford Royal Hospital

## Background

The Gold Standard Framework (GSF) was first introduced to General Practice in 2000[1]. It is recognised 1/3 of hospital inpatients may be in their last year of life. Evidence shows GSF reduces hospitalisation and allows more people to live and die in their preferred place of care[2]. Teams undertaking GSF find significantly reduced admissions and lengths of stay[2]. Research shows the first step to improving care is identifying the appropriate patients for the service and this is often overlooked as an inpatient[3]. Our inpatient ward did not have processes to identify those appropriate for the GSF therefore a process to identify and code patients for the community to follow up on discharge was sought.

## Aim

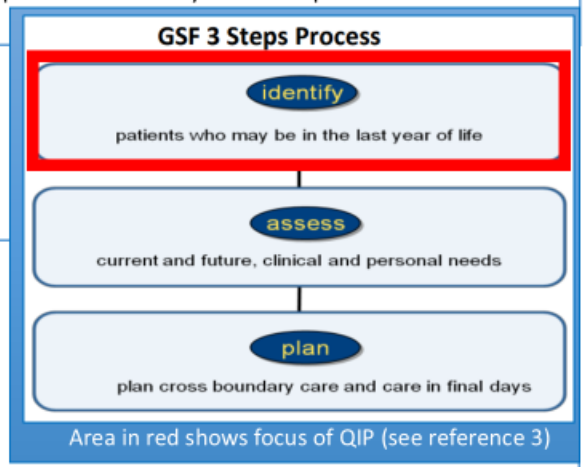
To identify and code patients appropriate for the GSF on the inpatient gastroenterology ward at Salford Royal Hospital. Aim for 80% of patients identified as having a GSF diagnosis are documented on the discharge summary.

## Method

Data was collected retrospectively between March- July 2024, by reviewing documentation, coding during admissions and discharge summaries

The standards identified:

1. Patients are identified as having a GSF diagnosis
2. Patients with a GSF diagnosis are coded
3. Patients who are coded are documented on the discharge summary as having a GSF diagnosis to highlight to the community services aiming for a benchmark of 80%.




Area in red shows focus of QIP (see reference 3)

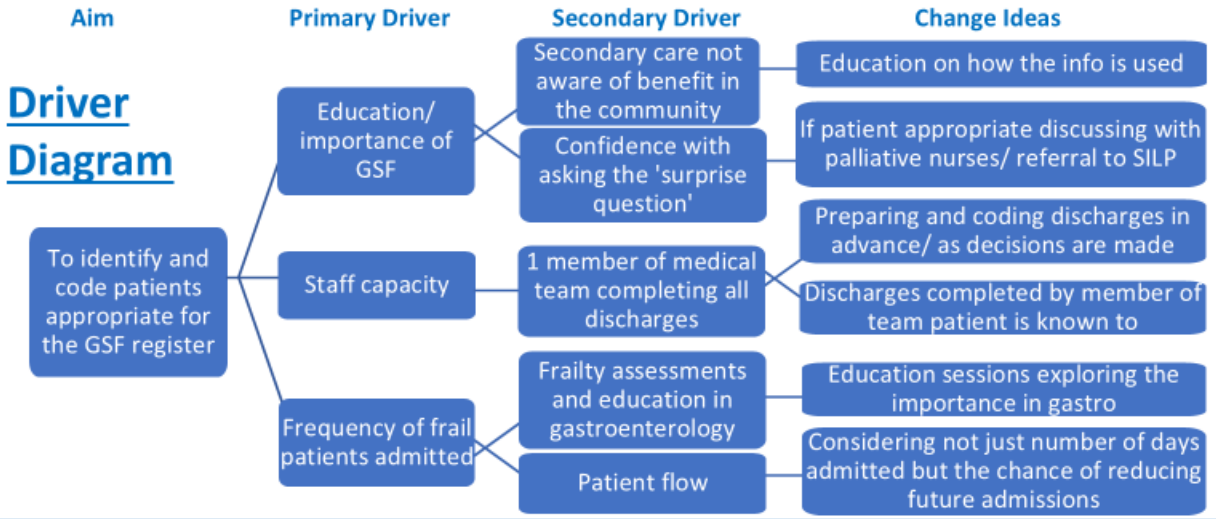

Additional valuable data included whether palliative inpatient teams had been involved, if advanced care planning (ACP) discussions had been had and if community palliative care were informed on discharge.

## Why is it important to identify GSF diagnosis?

| Triggers support in community | Supports living well until death | Prevention of crises admissions | Chance to offer ACP discussion |
|---|---|---|---|

## Results

Of the 36 patients admitted in the first 2-week period the 11 patients who had a GSF eligible diagnosis were not identified or coded. Following the first and second interventions made 21 further patients were identified as eligible for diagnosis on data collection but no GSF coding was carried out or documentation on the discharge letter.




## Conclusion

The two interventions received positive feedback, general discussion and engagement among the medical team however it did not lead to patients being coded for the community to identify. The patients who were reviewed in the Specialist liver disease palliative care MDT (SILP) had referrals placed to the community palliative care team and ACP initiated. The SILP is more established currently within the hospital, therefore, our recommendation was to consider implementing a bundle that suggests referral to the SILP and within the bundle asks for the GSF to be coded.

## References

1. Thomas. K., Armstrong- Wilson. J., Clifford. C. *International Journal of Palliative Nursing* April 2022 Vol 28, No 4. 4th September 2024 https://www.goldstandardsframework.org.uk/cdcontent/uploads/files/006_IJPN_28_4_172_177_GoldStandard.pdf 2. Thomas K, Armstrong Wilson J A. Foulger, Tom Tanner National GSF Centre. Sept 2016 3. Thomas. K., et al *Prognostic Indicator Guidance* 5th Edition (2011). 4th September 2024. Retrieved from https://www.goldstandardsframework.org.uk

# TITLE: THE ROLE OF BUBBLE CONTRAST ECHOCARDIOGRAM AS A DIAGNOSTIC TOOL FOR PATENT FORAMEN OVALE (PFO) PATIENT COHORT GROUPS WITH CRYPTOGENIC STROKE IN A TERTIARY CARE CENTRE

PRESENTER- DR.KHIN KAY KAY KYAW, CARDIOLOGY REGISTRAR, UNIVERSITY HOSPITAL PLYMOUTH

## Introduction:

(1) It is highlighted that the prevalence of a patent foramen ovale(PFO) in patients with stroke ,ranges from 30% to 50%,specifically, in young patients experiencing a stroke of unrecognised origin.
(2) Therefore, there remains a gap to bridge between the early detection of large defect (PFO) and timely closure of large lesion, to prevent further cerebrovascular events(CVA) in this patient population.

## Methods:

(1) Our **primary aim** was to investigate the diagnostic role of bubble contrast echocardiogram for PFO patient population, and our **further objectives** were to formulate the local guidelines to standardize the novel screening pathway for early detection of defect and to facilitate the early closure of PFO to prevent further CVA events.
(2) A total of 30 patients admitted with cryptogenic stroke were assessed to investigate the congenital cardiac defect (PFO), from 1st August 2023 to 1st June 2024.
(3) Of these, 20 patients were indicated for bubble contrast echocardiogram as a diagnostic screening test (study population).
(4) Bubble echocardiogram using agitated saline and Valsalva manoeuvres was assessed for each patient cohort, at outpatient echocardiogram clinic, and the timing of referral for large defect closure was counted from the day patients received positive screening to the next clinic review.

## Results:

(1) All patients identified (n=20) had admitted to our tertiary centre with a stroke of unrecognised origin (study population).
(2) Mean age was 42.5 years (range 30-55).
(3) It was found that 12 out of 20 patients (60%) achieved positive results(patent foramen ovale); while remaining 8 patients were negative in screening.
(4) Interestingly, 8 out of 12 positive tests (67%) were concluded as large patent foramen ovale lesion, while remaining 4 patients were found out to have small insignificant defect.
(5) Following this screening test, all 8 patients with positive large PFO lesion was immediately referred to structural interventional centre within 6 weeks' time, facilitating for early defect closure.
(6) A multi-disciplinary team discussion was made to improve upon the quality of early diagnostic screening test using bubble contrast echocardiogram for this patient population.
(7) A **novel screening pathway was then devised** to standardize the PFO screening with its role in implementation science of timely referral of large defect closure to structural interventional centre, to prevent further cerebrovascular events in this patient cohort group.

## Conclusion:

(1) The incorporation of **bubble contrast echocardiogram** as a diagnostic screening tool for detection of cardiac defect (patent foramen ovale)had led to significant improvement in patient quality of care and potential reduction in risk of further cerebrovascular events .
(2) This study highlights the importance of the non-invasive imaging screening in detection of congenital cardiac defects as first-line diagnostic tool, and its future role in implementation of timely structural intervention, such as defect closure in large significant lesions.

# Documentation of DNACPR/TEP on Discharge Summaries

Khine Su Minn , Umme Parveen, Kasun Bamunuarachchi
Southend University Hospital

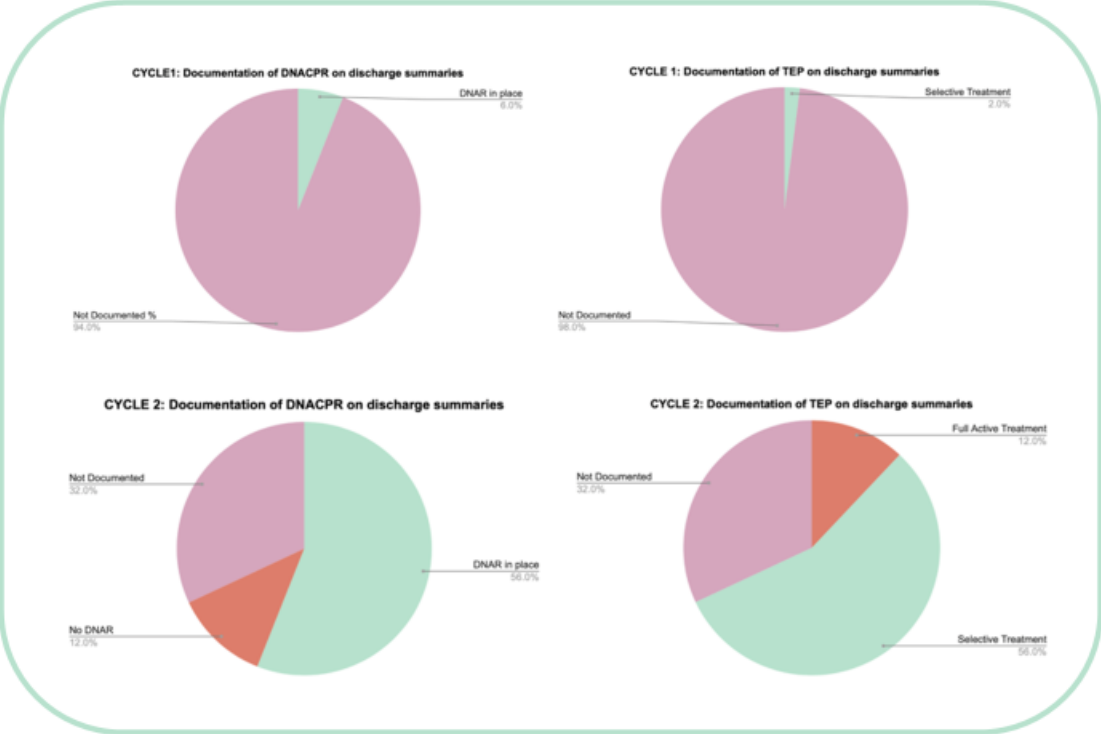
Mid and South Essex NHS Foundation Trust

## Introduction

A Do Not Attempt Cardiopulmonary Resuscitation (DNACPR) order is a document that formalizes the decision-making process regarding whether an individual should receive CPR in the event of a cardiac arrest. The advantage of a DNACPR decision is that it can help ensure a dignified death for patients. Documenting a DNACPR along with a Treatment Escalation Plan (TEP) on discharge summaries is crucial in managing patients, particularly those with progressive life-limiting illnesses, those approaching the end of life, and significantly frail patients to prevent the risk of contradictory care plans in subsequent admission to hospital.

## Methodology

Data was collected retrospectively from 50 discharge summaries—25 from the respiratory and 25 from cardiology departments. After gathering baseline data, another round was conducted post-intervention. A formal email and weekly reminders were sent to junior doctors in both departments to encourage including DNACPR and TEP information in discharge summaries.
Inclusion Criteria: Patients above 65 years
Exclusion Criteria: Patients on Fast Track Discharge




## Objective

a. To document whether patient has DNACPR in place on discharge summaries
b. To mention about the treatment escalation plan on discharge summaries

## Aim

To achieve 60% documentation of DNACPR/TEP on discharge summaries from respiratory and cardiology wards in Sounthend Hospital

## Ethical issues

There are no concerning ethical issues and safety issues.

Key Word: DNACPR, TEP, Discharge summaries
Reference : https://www.nhs.uk/conditions/do-not-attempt-cardiopulmonary-resuscitation-dnacpr-decisions/

## Results

First Cycle: Patients aged 65–92 were 50% male and 50% female. Only 6% of discharge summaries for patients over 65 from cardiology and respiratory wards included DNACPR documentation; 94% did not. TEP was mentioned in just 2%. Three patients died—two in the community had DNACPR documented but no TEP while the third who died during a later admission, had neither DNACPR nor TEP documented initially.
Second Cycle: Patients aged 65–94 were 56% male and 44% female. After intervention, DNACPR documentation improved to 68% with 56% had DNACPR in place, and 12% did not. TEP was included in 68% of discharge summaries, with 12% indicating full active treatment and 56% selective treatment.

## Conclusion

The comparison between the two cycles highlights substantial progress in the documentation of DNACPR and TEP. The second cycle demonstrated marked improvements, with a significant increase in DNACPR documentation from 6% to 68% and a more comprehensive inclusion of TEP in discharge summaries. Despite these advancements, there remains room for improvement, particularly in ensuring that all patients aged above 65 years have the necessary DNACPR/TEP documentation accordingly.

## Recommendation

It is important to promote and support staff engagement on documentation of DNACPR and TEP especially in elderly and frail patients to ensure consistency of care plan on subsequent admissions.

# The Targeted Needs Assessment: Utilising a Triangulated Approach to Improve a Geriatrics Educational Programme

**Mostaghimi K, Ahmed N**

**The Rotherham NHS Foundation Trust, Rotherham, United Kingdom**

## Introduction

Consultants and Doctors-in-Training who attend the weekly geriatrics teaching programme in a District General Hospital in Yorkshire report it to be unstructured, non-specific, and not organised around their wider needs. Targeted needs assessment for educational activity can involve one or more different methods to identify learners' needs.[1] In this poster we outline how we assessed the needs of attendees, in order to propose a curriculum that more accurately reflects this diverse audience, with suggested guidance for those delivering teaching.

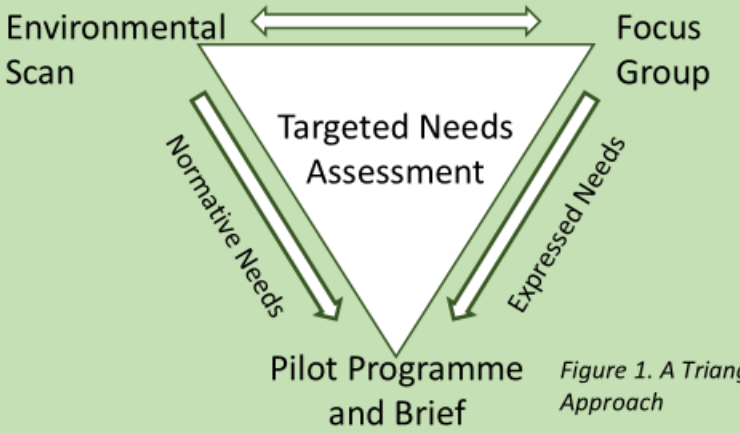



*Figure 1. A Triangulated Approach*

## Methods

Utilising Kern's six-step approach to curriculum development,[2] particularly focussing on the targeted needs assessment, we utilised a triangulated approach through environmental scan and a focus group interview. Reviewing curricula for Foundation,[3] Internal Medicine,[4] General Practice,[5] and Geriatric Specialty Training,[6] we identified overlapping themes and topics. We then conducted a focus group with 14 attendees answering open and closed questions using real-time anonymous online feedback with a subsequent facilitated group discussion.

## 1. Environmental Scan

Review of training programme curricula identified overlapping themes and topics which allowed us to formulate suggested session outlines.

## 2. Focus Group Interview

The focus group aimed to draw on current experiences, value judgements, and geriatric-specific learning needs of attendees. The engaged small group reached a consensus on characteristics summarised in Figure 2, and these were used to inform the programme on a broader scale. This method was efficient from an administrative, time, and financial perspective. The anonymity of the online feedback tool mitigated judgement based barriers to expression. The facilitated discussion and subsequent thematic analysis allowed us to gather in-depth feedback on perceived unmet needs. Limitations include the small group size and the nature of rotational training where attendees who fed back may not experience the changes they inspired.

## 3. Pilot Programme

Session notes and online data were thematically analysed and subsequently considered alongside the session outlines, to incorporate aspects felt to be important which may not be expressly outlined in curricula. Our results then informed a plan to pilot the new programme during the upcoming teaching cycle, including a speaker brief and a written handover.

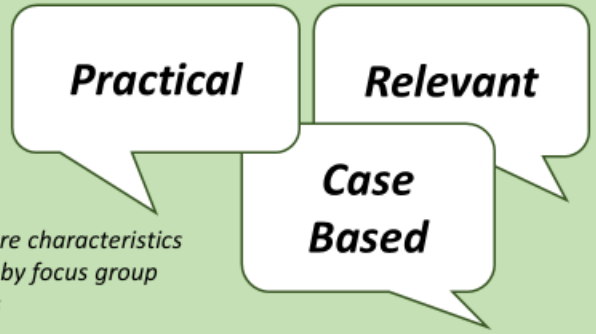



*Figure 2. Core characteristics highlighted by focus group participants*

## Conclusion

We have described an efficient method for a targeted needs assessment of doctors attending the weekly geriatrics teaching programme, led by curricula and the learners themselves. Learners expressed a preference for practical and relevant teaching, which used a case as a narrative. We hope our methodology and findings are of interest to others planning postgraduate teaching programmes.

## References

1. Ratnapalan S, Hilliard RI. Needs Assessment in Postgraduate Medical Education: A Review. *Medical Education Online*. 2002;7(1):4542
2. Thomas PA, Kern DE, Hughes MT, Chen BY. *Curriculum Development for Medical Education: A Six-Step Approach*. 3rd ed. Baltimore: The Johns Hopkins University Press, 2015.
3. UK Foundation Programme. *UK Foundation Programme Curriculum 2021*. 2021.
4. Joint Royal Colleges of Physicians Training Board. *Curriculum for Internal Medicine Stage 1 Training*. 2019.
5. Royal College of General Practitioners. *The RCGP Curriculum The Curriculum Topic Guides*. 2023.
6. Joint Royal Colleges of Physicians Training Board. Curriculum for Geriatric Medicine Training. 2022.

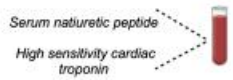
# Opportunistic Screening for Subclinical Cardiovascular Disease in Type 2 Diabetes Using Digital Retinal Photography

**Kishan Lakhani***, Abbas S Alatrany*, Jian L Yeo, Abhishek Dattani, Sarah L Ayton, Aparna Deshpande, Matthew PM Graham-Brow, Melanie J Davies, Kamlesh Khunti, Thomas Yates Stephanie L Sellers, Huiyu Zhou, Emer M Brady, Jayanth R Arnold, James Deane, Rebbeca J McLean, Frank A Proudlock, Gerry P McCann, Gaurav S Gulsin

## BACKGROUND

A high proportion of adults with T2D have subclinical CVD

Substantially increased downstream risk




Current International Screening Guidelines lack sensitivity and specificity

## AIM

**Determine whether Digital Retinal Photography can detect underlying subclinical CVD in Adults with T2D**

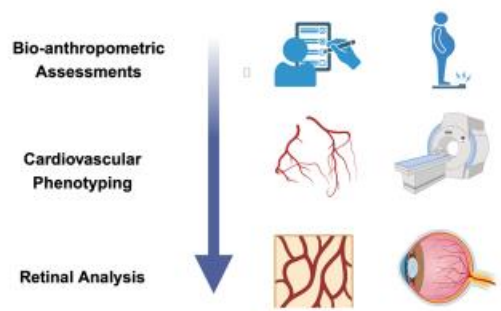
## METHODS

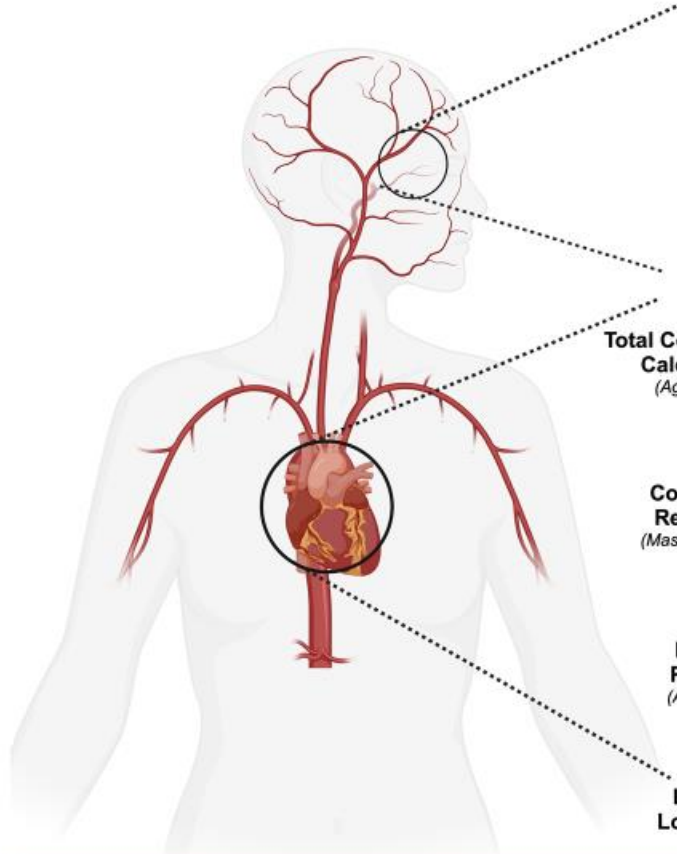
Single Centre Prospective cohort study

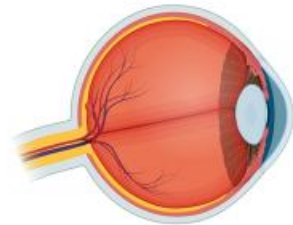
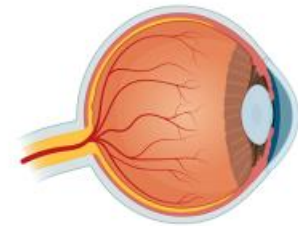
Multi-Ethnic Adults with T2D

N = 254

Free from History, Symptoms of CVD



| | No Retinopathy N = 212 | Mild Background Retinopathy N = 42 | |
|---|---|---|---|
| |  |  | |
| Total Coronary Artery Calcium Score (*Agatston units*) | 210.23  | 576.2  | P = 0.005 |
| Concentric LV Remodelling (*Mass / volume ratio*) | 0.90±0.14  | 0.94±0.15  | *P = 0.0015* |
| LV Filling Pressures (*Average E/e'*) | 9.0±2.0  | 9.6±2.5  | *P = 0.0031* |
| LV Global Longitudinal Strain | 16.5±2.3% | 15.4±2.3% | *P < 0.001* |

Between group comparisons are adjusted for age, sex, ethnicity, body mass index, systolic blood pressure and HbA1c

Subclinical Cardiovascular Disease

## CONCLUSION

**The presence of mild background diabetic retinopathy was associated with a greater burden of atherosclerosis, adverse cardiac remodelling and poorer systolic & diastolic dysfunction**

**Routine diabetic eye screening has the potential for identifying people with type 2 diabetes who have subclinical cardiovascular disease**

# Rheum to grow: A Systematic Literature Review on the teaching of rheumatology in undergraduate medical students

@KKouranloo

Koushan Kouranloo[1,2], Nikki Myall[3], Jennifer Christie[2,4]

[1]Department of Rheumatology, University Hospital Lewisham, Lewisham High St, London SE13 6LH; [2]School of Medicine, Cedar House, University of Liverpool, Ashton Street, Liverpool L69 3GE; [3]British Medical Association Library, BMA House, Tavistock Square, London WC1H 9JP; [4]Liverpool University NHS Foundation Trust, Prescot Street, Liverpool L7 8XP

## Introduction

- A recent report published by the British Society of Rheumatology (BSR) in 2021 demonstrated medical students have a lack of exposure to rheumatology[1].
- In addition, the introduction of *Modernising Medical Careers* by the General Medical Council in 2005 means newly-qualified doctors are expected to choose their specialty much sooner than previously.

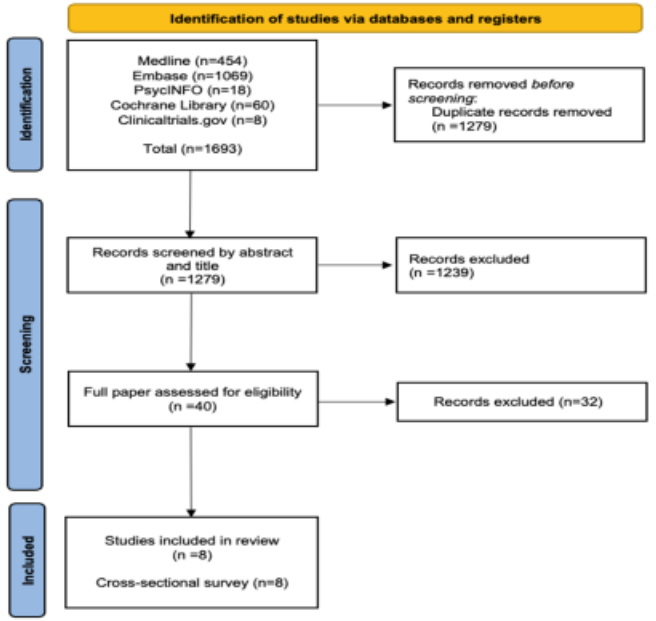
## Aim

- To summarise the quantity, type and experience of rheumatology teaching amongst undergraduate medical students globally.

## Methods

- This SLR was registered on PROSPERO (CRD42023472169). Articles published until February 2024 were included.
- Eligible articles were: case reports, case series, observational studies, qualitative studies and randomised control trials. Medline, Embase, PyscINFO and Cochrane library and WHO international clinical trials registry were searched, restricted to English language only.
- Articles discussing postgraduate training programmes and/or single intervention or single student cohort were excluded.
- Data was extracted on demographics, method, duration, assessment of teaching and students' and educators' feedback.

## Figure 1




## Conclusion

- There are marked limitations in recording the amount and quality of rheumatology teaching amongst undergraduate medical students.
- Exposure to clinical rheumatology has decreased over time, with variable student awareness of the speciality.
- Given the ageing UK population, increase in multimorbidity, and rheumatology workforce crisis, there is a need to increase exposure and entry to the specialty.
- Greater incorporation of rheumatology in the undergraduate curriculum is required.

## Results

- 1279 articles identified (post-deduplication) → eight cross sectional studies included.
- Years of publication: 1981- 2024.
- UK (n=3), USA (n=2), Australia (n=1), Pan-European (n=1), Africa (n=1)
- Year of rheumatology teaching at medical school was reported in five studies all within the UK and US.
- The three UK-based studies reported rheumatology to be taught in latter clinical years, whereas in the US studies, exposure was earlier.
- Exposure to rheumatology: 15-96 hours/ week
- Reported methods of teaching: lecture-based, tutorials, problem-based learning, simulated patients, manikins, bedside, electives and shadowing consultations.
- Qualitative student feedback was only provided in one (UK-based) study, from 49 students of whom two regarded rheumatology as "fascinating", 16 felt that they had limited exposure and eight considered it as either "very specialised" or "a niche specialty".
- None of the studies collected feedback from educators.
- Factors identified for poor exposure:
  - Lack of rheumatologists on school faculty
  - Lack of specialty training programme in local hospital
  - Greater emphasis on general medicine, general practice and acute specialties

## References

1. British Society for Rheumatology (2021) Workforce Policy Report

# Quality improvement project: Screening and treatment of iron deficiency in patients with heart failure admitted to the Acute Medical Unit in a large district hospital in London

Kyaw Soe Tun[1], Samiksha Choudhury[1], Mercy Doni-Kwame[1]
[1]Department of Acute Medicine, Queen Elizabeth Hospital, Lewisham and Greenwich NHS Foundation Trust

## Background

It is estimated that over one million people in the UK have heart failure (HF) and 50% have co-existing iron deficiency (ID). There is a known association between HF and ID, with or without anaemia, which has been shown to increase hospital admissions and treatment costs, reduce exercise tolerance, lead to a poorer quality of life (QoL) and have a negative prognostic impact on patients. It is also associated with HF disease severity and reported to be an independent predictor of all-cause and cardiovascular mortality. Meta-analysis of randomised control trials in patients with symptomatic HF with reduced ejection fraction (HFrEF) has shown that correction of ID with intravenous iron, predominantly ferric carboxy-maltose (FCM) leads to improvement in symptoms of HF, exercise capacity and reduced subsequent hospitalizations.

## Objective

To **improve** the extent to which ID was tested for and treated with FCM in patients with HF admitted to the Acute Medical Unit (AMU) at Queen Elizabeth Hospital.

## Methodology

The project was **registered** with the audit department of local trust

Data was **collected** for all patients admitted to AMU with HF in **Feb/2024** for initial audit and **May/2024** for re-audit after interventions.

**Education** - AMU teaching sessions for health care professionals
**Posters** - visual reminders in AMU

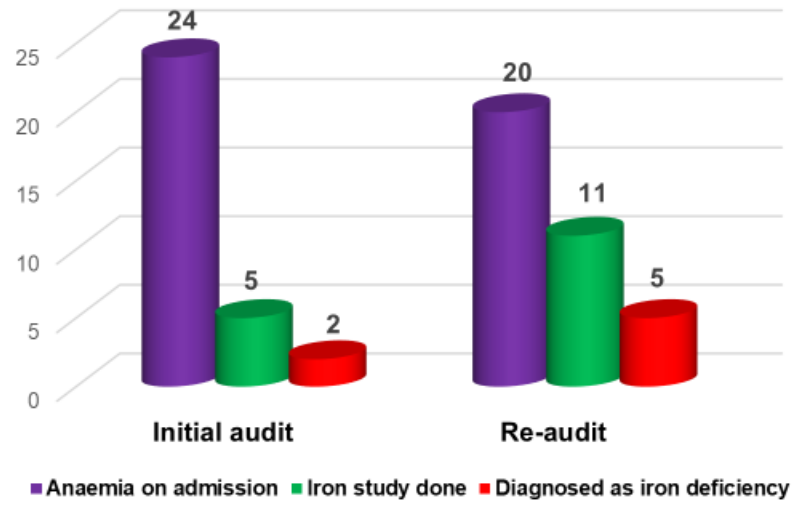
Data was **analysed** to assess how many patients with HF were **screened** for iron deficiency and FCM was **commenced** if ID was present.

## Results

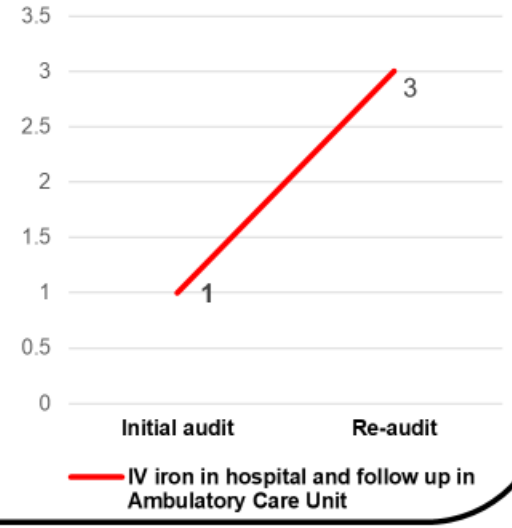
| Demo-graphics | Initial Audit (Feb/2024) | Re-audit (May/2024) |
|---|---|---|
| Total number of patients | 34 | 30 |
| Mean age | 72 years | 76 years |
| Gender | Male preponderance of 58% | Male preponderance of 53% |
| Frailty | 62% | 60% |
| History of heart failure with reduced EF | 88% | 83% |

**All patients presented with symptoms of heart failure such as shortness of breath, orthopnoea, worsening pedal oedema etc.**

### Iron deficiency screening




### IV Iron treatment




## Conclusion

There is some improvement in screening of iron deficiency in anaemic patients with heart failure and appropriate treatment was commenced. However, there is further room for improvement in the diagnosis and management of ID in HF in clinical practice. Further education via email dissemination to all medical doctors, face-to-face teaching sessions during induction and departmental teaching along with visual reminders to screen iron deficiency in heart failure with or without anaemia and the importance of commencing FCM if found to be iron deficient. The impact of these interventions will be evaluated in subsequent cycles of quality improvement project.

**References:**
1.NICE guidelines: Chronic Heart Failure in Adults: Diagnosis and Management, Reference number: NG106, Section 6: Treating heart failure, Sub-section 6.2.5: Iron supplementation for iron deficiency in heart failure. https://www.nice.org.uk/guidance/ng106
2.Robert J.Mentz, Jyotsna Garg, Frank W.Rockhold, Javed Butler, Carmine G.De Pasquale, Justin A.Ezekowitz, Gregory D.Lewis +9, for the HEART-FID Investigators, Ferric Carboxymaltose in Heart Failure with Iron Deficiency. *N Engl J Med 2023;389:975-986, DOI: 10.1056/NEJMoa2304968, Vol. 389 NO.11*
3.BMJ Best Practice: Management of heart failure with reduced ejection fraction with anaemia/iron deficiency, treatment algorithm. https://www.bmj.com/company/bmj-resources/bmj-best-practice/
4.Andrew Sindone, Wolfram Doehner, Josep Comin-Colet. Systematic review and meta-analysis of intravenous iron-carbohydrate complexes in HFrEF patients with iron deficiency. *ESC Heart Fail. 2023 Feb; 10 (1): 44-56.doi: 10.1002/ehf2.14177.*

NHS Lewisham and Greenwich NHS Trust

# Improving blood pressure control in patients with depression

Laila Wali[1], Lucy Joyes[2]
[1]Royal Liverpool University Hospital ; [2]Rutherford Medical Centre

## 1. Background

- Depression is the most prevalent mental illness in the world, and it is known to increase the risk of hypertension.[1]
- Both moderate/severe depression and hypertension are part of the QRISK 3 scoring system, meaning they both increase the risk of cardiovascular disease.[2]

## 2. Aims

- The goal of this quality improvement project was to identify patients in Rutherford Medical Centre, with both depression and uncontrolled hypertension.
- Implement strategies to enhance their blood pressure management and reduce their cardiovascular risk.

## 3. Methods

- EMIS search was used to identify patients.
- A text message was sent, inviting patients to provide ambulatory blood pressure readings. They could either monitor this at home/pharmacy or at the GP surgery using the blood pressure monitor provided.
- Another EMIS search was conducted after six weeks to check whether there was any improvement in the number of patients with depression and uncontrolled hypertension.

## 4. Results and discussion

**Cycle 1:**

- Total of 53 patients were identified by the search
- Seven patients were under the age of 40 and the rest were older.
- The search identified 26 patients who had not been diagnosed with hypertension but had elevated clinic blood pressure readings.
- Out of the 27 patients known to be hypertensive, only four had not been reviewed in the past 12 months. Those that were reviewed had lower ambulatory blood pressure readings compared to their recent clinic measurements.
- Since clinic blood pressure readings tend to be higher, patients were invited to provide ambulatory measurements.

**Cycle 2:**

- Only 18 patients had provided ambulatory blood pressure readings overall (Figure 1). Among those, only four had elevated blood pressure levels.
- 18 patients were excluded from the search as their ambulatory/recent recorded blood pressure readings were within normal ranges. Additionally, two other patients had normal ambulatory blood pressure readings but were not picked up by the search.

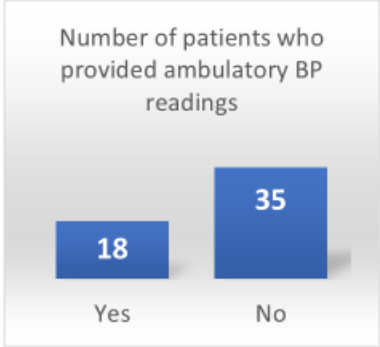



Figure 1

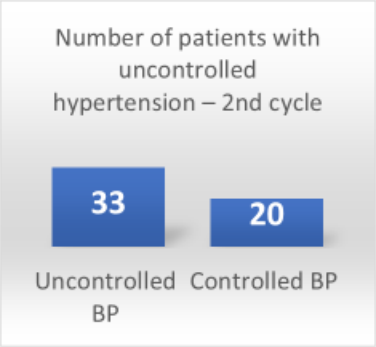



Figure 2

## 5. Conclusions

- In conclusion, there were initially 53 patients in the general practice with depression and uncontrolled hypertension. After some of these patients provided ambulatory blood pressure readings/attended clinic, this number reduced to 33 (Figure 2).
- However, not all patients were able to provide ambulatory readings. This could be attributed to many factors such as the short interval between the two cycles, or patients not having access to a blood pressure monitor at home.

## 6. Recommendations

Therefore, the remaining patients will be invited to attend a nurse led clinic . They will then be managed according to the nice guidelines. Clinicians will also be encouraged to ask patients to provide home readings if their clinic measurements are elevated. This will be re-audited in a few months' time to assess for improvement.

## 7. References

1.Shao M, Lin X, Jiang D, Tian H, Xu Y, Wang L, et al. Depression and cardiovascular disease: Shared molecular mechanisms and clinical implications. Psychiatry Res [Internet]. 2020;285(112802):112802. Available from: http://dx.doi.org/10.1016/j.psychres.2020.112802
2.QRISK3 [Internet]. Qrisk.org. [cited 2024 Sep 7]. Available from: https://www.qrisk.org

# ST-Elevation Acute Coronary Syndrome Associated With an Aortic Root Abscess in a Patient With *Pseudomonas Aeruginosa* Endocarditis

*Dr Laith AL-MUKHTAR and Dr Nitish BEHARY PARAY*

Royal Devon University Healthcare NHS Foundation Trust

## CASE PRESENTATION

**History**: A male patient in his 20s presented to the Acute Medical Unit with a week-long history of breathlessness and intermittent chest pain associated with general malaise. He was referred to the Cardiology team for urgent review and consideration of primary PCI on the basis that his ECG at triage showed inferolateral ST elevation (figure 1).

**Bedside assessment**: He was febrile (38.7°C) and tachycardic (116bpm). Physical examination showed splinter haemorrhages, normal heart sounds with an early diastolic murmur and no clinical signs of heart failure.

**Investigations**: Blood tests showed raised white cell count 25.9x10$^9$/L, C-reactive protein 229 mg/L and Troponin T 456ng/L (normal range ≤ 14).

**Imaging**: Urgent transthoracic echocardiographic assessment showed severe eccentric aortic valve regurgitation (figure 2). An aortic root abscess at the right and non-coronary cusps commissural level was diagnosed on a CT angiogram (figure 3).

**Microbiology**: 3 sets of blood cultures taken on admission subsequently isolated *Pseudomonas Aeruginosa*.

## IMAGES

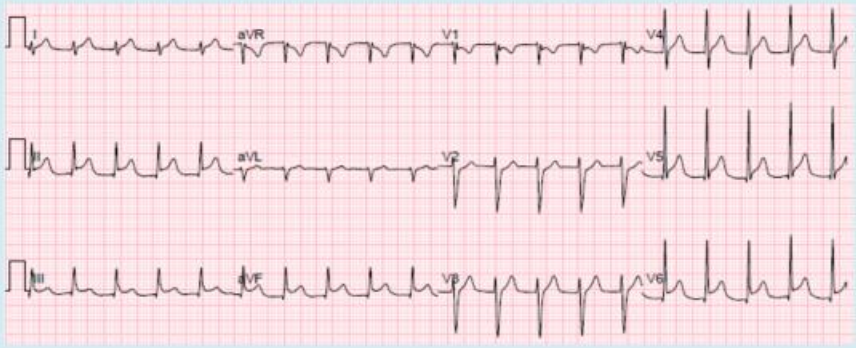



**Figure 1**. ECG showing sinus tachycardia with ST elevation in the inferolateral leads.

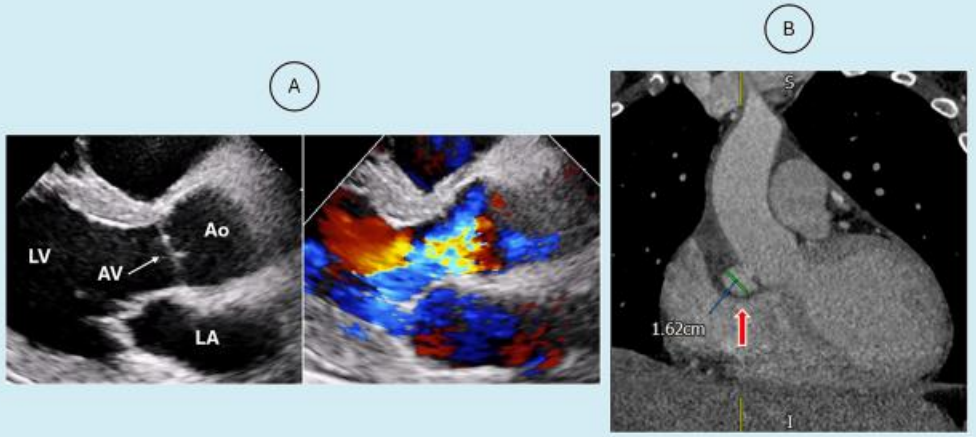



**Figure 2A.** Parasternal long axis view showing left atrium (LA), left ventricle (LV), aortic valve (AV) and aortic root (Ao). The region of turbulent flow caused by severe aortic regurgitation occupying most of the LV outflow tract is visible with colour Doppler.

**Figure 2B**. Coronal plane of ECG-gated cardiac CT showing a collection anterolateral to the aortic root, predominantly filled with thrombus but also central enhancement measuring 1.6cm in diameter which communicates with the aortic root at the junction of the right and non-coronary cusps. These changes are consistent with an aortic root abscess.

## MANAGEMENT

- Targeted antimicrobial therapy according to sensitivities
- Referral to local Cardiothoracic Surgery centre for emergent aortic root and valve intervention.
- Large cavitating sinus seen intra-operatively within the non-coronary sinus and right coronary cusps, extending deep towards the right atrium and tricuspid valve.
- Aortic valve replaced by 23mm tissue valve and a pericardial patch sewn within the aorta adjacent to the right coronary cusp.

## LEARNING POINTS

- **Maintain high clinical suspicion for uncommon presentations of IE and aortic root abscess.**
- **Mechanisms of STEMI in IE include embolisation of vegetation and extrinsic compression of the proximal coronary arteries by the root abscess.**
- **Trans-oesophageal echocardiogram and CT angiography of the aorta are the gold standard for investigating patients with suspected root abscess.**

# PARENTERAL IRON USE IN SAME DAY EMERGENCY CARE

London North West University Healthcare NHS Trust

Primary Author: Dr. Lema Imam
Presenting Author: Dr. Vaishali Subbu
Department of Acute and General Medicine, Northwick Park Hospital, LNWH NHS Trust, London

## INTRODUCTION

The SDEC (same day emergency care) clinic in Northwick Park Hospital (NPH) receives referrals from both primary and secondary care for the provision of parenteral iron replacement. These consultations can include a focussed history to help assess eligibility and potential causes of bleeding. Arranging and interpreting further investigations is important in both managing anaemia and identifying an underlying pathology, especially, a malignancy.

The project aims to provide a cross-section of the department's work load and performance, with a wider view of creating a guideline to allow for a specialist-nurse led service in future.

## METHODOLOGY

A retrospective audit of 98 patients who received parenteral iron in SDEC at NPH between November - December 2023, using electronic patient record systems.

Figure 1 HAEMOGLOBIN AT PRESENTATION (G/L)

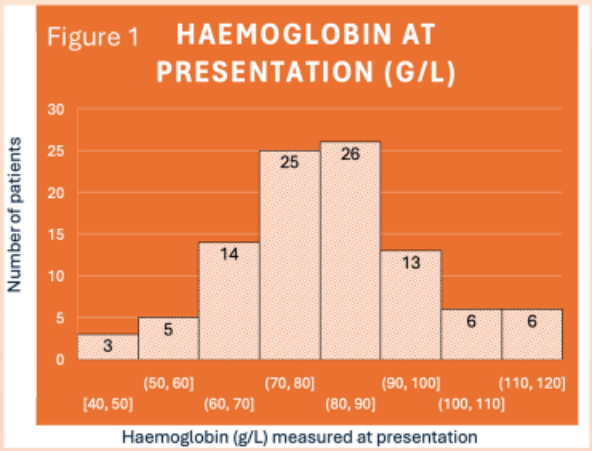
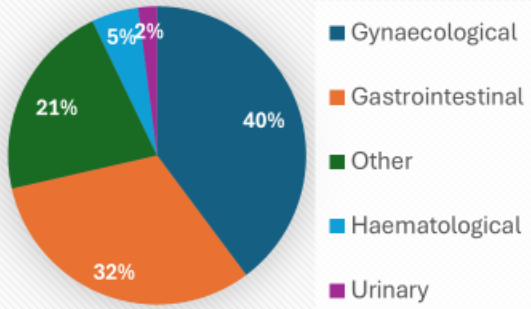



Figure 2 :SITE OF BLOOD LOSS




## RESULTS

- Majority of the patients were women (87%)
- A gynaecological source of bleeding was found in only 40% of the patients. (Figure2)
- The mean haemoglobin at presentation is between 70-90 g/L (Figure1)
- The ferritin levels in 80% of the patients was less than 30µg/L (NICE threshold for defining iron deficiency).
- About half of the patients had a record of prior use of oral iron, among whom compliance was demonstrably poor.
- A referral to specialist services for investigations was not mentioned in 39 patients and it is unclear whether this was appropriate or not. Thus, a protocol needs to be created.

## CONCLUSION

- Extrapolating this data, approximately 1200 patients are referred to SDEC in NPH for parenteral iron over a year
- Improve assessment and documentation of previous enteral iron use and compliance
- A protocol to ensure onward referral to specialists for further investigations and management
- Argument for a specialist nurse-led clinic is compelling
    - Provide more consistent service
    - Streamline service and referrals
    - Allow clinicians to review SDEC presentations that cannot be protocolised
    - Better patient care and timely diagnosis.

# Minimizing the prescribing of the anticholinergic medications in the confused elderly patients

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King's Mill Hospital, Newark Hospital

Sherwood Forest Hospitals NHS
NHS Foundation Trust

## Introduction

- Most common complain of admission to hospital in elderly patients is confusion.
- Medication review is one of the important parts in assessing confusion.
- Our audit aims to identify the awareness of medication review, polypharmacy issue and practice of calculating cholinergic burden in elderly confused patients.

## Aims and objective

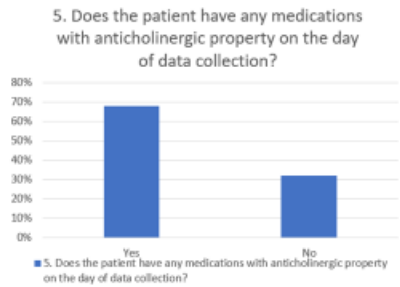
- To identify the usage of Polypharmacy in elderly patients
- To improve the practice of reviewing the medications especially anticholinergics to confused elderly patients
- To identify the medications with anticholinergic property through ACB calculator

## Material and method

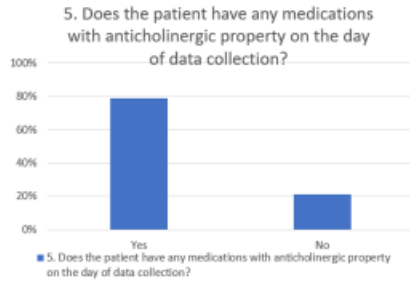
- Hospitalized Forty confused elderly patients among the age of 70-99 years whose AMT ≤ 7/10were involved in this audit.
- Exclude EOL (end of life) and FTC (Fast Track care) patients. Prospective study type.
- In first phase, polypharmacy issue, medication review and ACB score noted or not were recorded.

## Anticholinergic medications on the day of data collection?

**First Audit (First phase)**

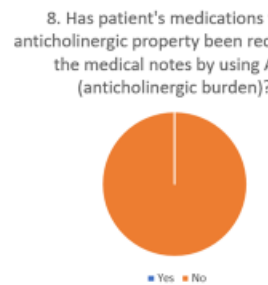



**Re-audit (First phase)**




## ACB score has been recorded?

**First Audit (First phase)**




**Re-audit (First phase)**


## Results

- Polypharmacy (5 or more medications, not include inhale and topical cream) were prescribed in 81 % of patients as arrival medications but increased to 88 % on the day of data collection.[10]
- Medications with anticholinergic property has also been prescribed in 77 % of patients as arrival medications but also increased to 79 % on the day of data collection.[10]
- The percentage of polypharmacy and anticholinergic medications prescription was nearly the same between first and re-audit.
- ACB score has been recorded in 35 % of patients (15 among 43 patients) in re-audit that was 0% in first audit.
- Improvement in calculating ACB score was noted in re-audit. Among those, nearly 30 % of patients who need immediate actions who have high ACB score (i.e ≥ 3) was noted.

## Conclusion

- Among the confused elderly patients, high risk of exposure to medications with anticholinergic properties have been turned out by those audits.
- Polypharmacy issue and anticholinergic medication prescription is significantly higher while in hospital compared to arrival medications.
- It may probably be due to the prescribing of IV antibiotics, diuretics, and sedatives in hospital as part of the acute management of the elderly confused patients.
- A significant improvement in written ACB score note has been seen in re-audit compared to first audit.

Actions: Posters at wards. Email to junior doctors. Regular teaching at induction lectures. Encourage at daily practice. Concern : Lack of continuing practice of reviewing the anticholinergic medications in confused elderly patients.

## References

1. Al Rihani SB, Deodhar M, Darakjian LI, Dow P, Smith MK, Bikmetov R, et al. Quantifying anticholinergic burden and sedative load in older adults with polypharmacy: a systematic review of risk scales and models. Drugs Aging. 2021;38(10):977–994. doi:10.1007/s40266-021-00895-x. 2. Hilmer SN. Calculating and using the drug burden index score in research and practice. Expert Rev Clin Pharmacol. 2018;11(11):1053–1055. doi:10.1080/17512433.2018.1528145., 3. Boustani M, Campbell N, Munger S, Maidment I, Fox C. Impact of anticholinergics on the aging brain: a review and practical application. Aging Health. 2008;4(3):311–320. doi:10.2217/1745509X.4.3.311., 4. Kouladjian O'ADonnell L, Gnjidic D, Nahas R, Bell JS, Hilmer SN. Anticholinergic burden: considerations for older adults. Geriatr Therapeut. 2018;2:1–13. 5.Villalba-Moreno AM, Alfaro-Lara ER, Pérez-Guerrero MC, Nieto-Martín MD, Santos-Ramos B. Corrigendum to "Systematic review on the use of anticholinergic scales in poly pathological patients." Arch Gerontol Geriatr. 2016;62:1–8., 6. Salahudeen MS, Duffull SB, Nishtala PS. Anticholinergic burden quantified by anticholinergic risk scales and adverse outcomes in older people: a systematic review. BMC Geriatr. 2015;15:31. doi:10.1186/s12877-015-0029-9., 7. Ruxton K, Woodman RJ, Mangoni AA. Drugs with anticholinergic effects and cognitive impairment, falls and all-cause mortality in older adults: a systematic review and meta-analysis. Br J Clin Pharmacol. 2015;80(2):95–107. 8. Tay HS, Soiza RL, Mangoni AA. Minimizing anticholinergic drug prescribing in older hospitalized patients: a full audit cycle. Ther Adv Drug Saf. 2014;5(3):121–128. doi:10.1177/2042098614523639. Oxford Handbook of Geriatric Medicine. 3rd ed. Oxford University Press; 2020. 10. Sherwood Forest Hospital. Hospital guideline confusion in elderly [Internet]. [Cited 2024 Sep 1].

# Objective Structured Clinical Exams (OSCEs): The Importance of Facilitated Practice Sessions and Potential Barriers affecting Medical Students

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NHS University Hospitals of North Midlands NHS Trust

## Background

- OSCEs are a standard method implemented within medical schools to assess clinical competence and determine student eligibility for degree progression[1,2].
- Formative (mock) OSCEs, typically organised shortly before summative exams, help identify areas of concern, predict student performance, and improve student familiarity with the examination style.
- However, these formative sessions are not consistently available across all institutions or clinical years.

## Methods

- Guided evening practice sessions were organised for 4th year medical students from Keele University (Stoke-on-Trent) over four weeks leading up to their OSCEs, facilitated by volunteer junior doctors in the 2023-2024 academic year.
- Student preferences towards the teaching content were collected, and sessions were gradually adjusted to fit the needs of the students nearer to the exams.
- Simulated scenarios were introduced midway through the project based on student input, allowing for greater familiarity with the exam process and incorporating feedback from peers and facilitators.
- Surveys were collected before and after the sessions to assess students' overall confidence towards their clinical skills and knowledge (1-10 ranking), and noting down relevant barriers towards OSCE preparation.

References:
1) https://geekymedics.com/what-is-an-osce/
2) https://education.uwmedicine.org/curriculum/exams/osce/

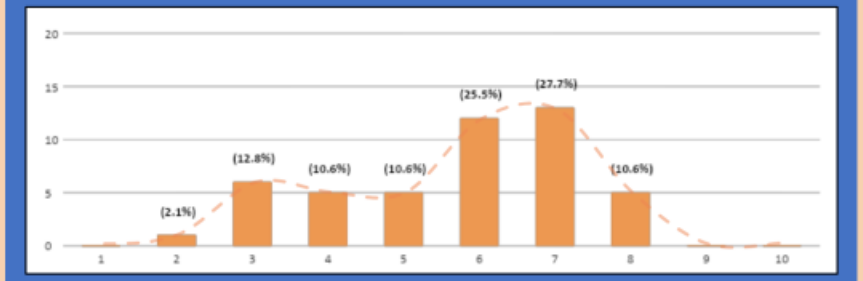


Figure 1: Confidence in clinical knowledge before practice sessions.

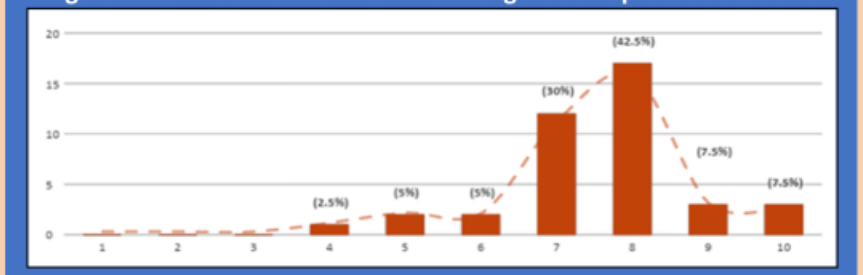


Figure 2: Confidence in clinical knowledge after practice sessions.

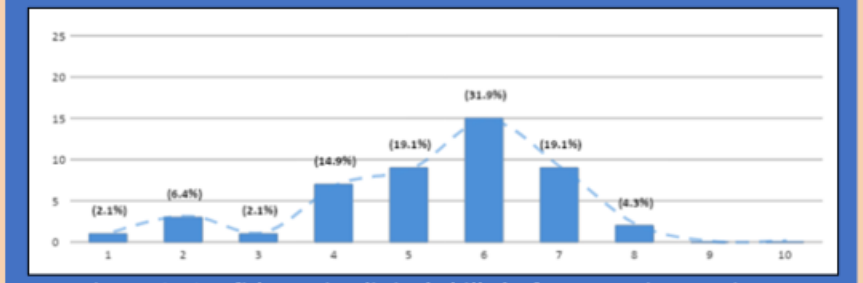


Figure 3: Confidence in clinical skills before practice sessions.

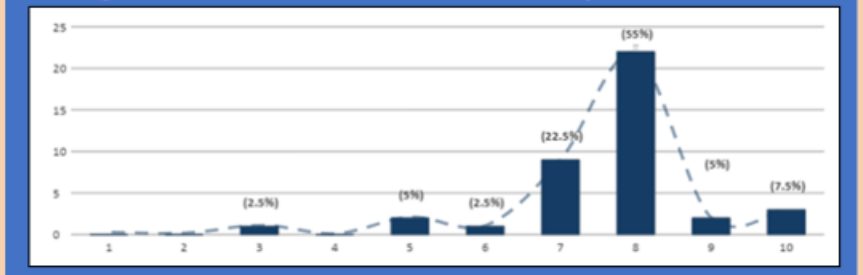


Figure 4: Confidence in clinical skills after practice sessions.

## Results

- Of the 122 available slots, 80 (65%) were filled by the project's conclusion. Students' average confidence in clinical knowledge increased from 5.7 (IQR 4.5-7) to 7.6 (IQR 7-8), and in clinical skills from 5.4 (IQR 4.5-6) to 7.7 (IQR 7-8) after attending the sessions.
- Overall, 97.5% of students felt the sessions improved their clinical knowledge, 92.5% reported improved clinical skills, and 100% expressed a desire for similar sessions prior to future OSCEs.

## Barrier Analysis

- Lack of access to patient models/ appropriate space to practice
- Proximity to knowledge exams
- Recent introduction of MLA exam
- Lack of mock OSCE-style practice sessions in the year

## Discussion & Conclusion

- To improve onto a second cycle, we aim to use scenarios using academic resources and by peer-reviewing planned stations - improving scenario authenticity and quality of knowledge gained from the scenarios.
- In conclusion, formative OSCEs, through facilitated practice sessions, significantly enhance students' confidence in their clinical knowledge and skills.
- Information gathered from such sessions can assist medical schools in adjusting and improving training for future student cohorts.

# Safeguarding Immunosuppressive Therapy: Enhancing specialist nurses' understanding of Varicella Zoster Screening for patients starting immunosuppressive drugs and developing a new protocol.

Lauren Sells & Luke Sammut

## INTRODUCTION

The recent update to the shared care agreement within Wessex requires Varicella Zoster Virus (VZV) antibody testing prior to initiating patients on DMARDs (Disease-Modifying Antirheumatic Drugs). Testing of these antibodies determines if vaccination is required prior to administering immunosuppressive therapy.

There are currently **no local protocols** within Portsmouth University Hospitals to guide the interpretation of these results.

A quality improvement project was initiated with the aim of improving our **Clinical Nurse Specialist's** (CNS) knowledge around VZV antibody testing, interpretation of results and consequent vaccination

## METHODOLOGY

This Quality Improvement Project was performed in two stages to adequately assess both the CNS team's VZV **knowledge** in addition to current **outcomes** for VZV antibody testing prior to the initiation of DMARDs.

An anonymised questionnaire was distributed to the entire **10-member CNS team** with the aim of assessing background knowledge of the VZV, current treatment steps for antibody results and knowledge of post exposure prophylaxis (Audit 1)

A further audit reviewed VZV antibody results for 100 randomly selected patients out of **420** which initiated DMARD therapy between December 2023 and February 2024 (Audit 2)

## RESULTS

- Audit 1
  - **60%** response rate
  - **67%** incorrectly handled equivocal antibody results
  - **33%** incorrectly offered Shingrix © for VZV antibody negative results
  - **100%** could correctly recall post exposure prophylaxis, next steps for positive results, conditions associated with VZV, and vaccination course details
- Audit 2
  - Only **31%** of patients randomly selected on DMARDs had been screened for VZV
  - **26%** of patients received screening without including VZV Antibody status

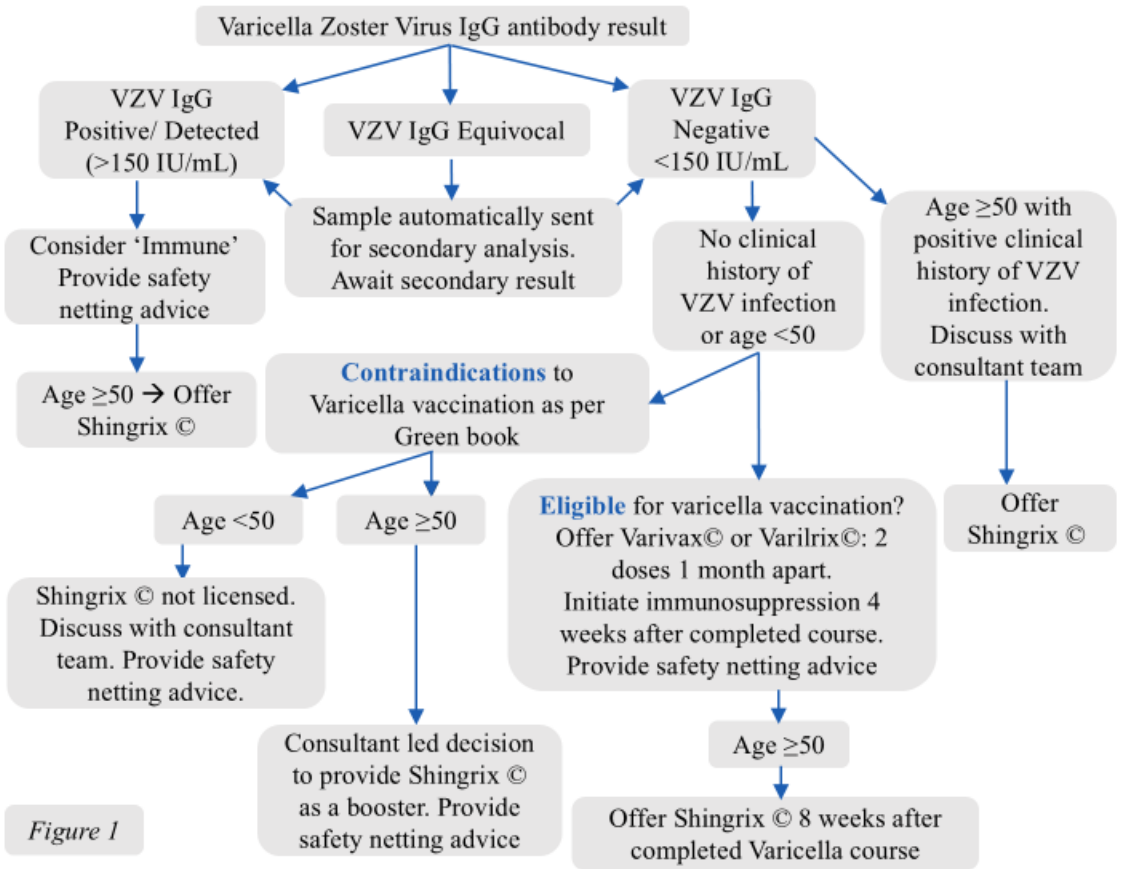


*Figure 1*

## DISCUSSION

The results of these audits revealed that current CNS knowledge is generally **high on VZV,** despite being outside of previous work requirements. However, the team lacked insight on differentiating between **varicella and shingles vaccinations**.

Although 69% of patients lacked a VZV antibody reading, this was multifactorial and mainly stemmed from utilisation of **outdated blood forms** rather than a lack of education

A clear protocol was developed by incorporating **regional** and **national** guidance via use of the **Green Book**, latest research and discussion with our resident **clinical virologist**. This protocol also addresses management of post exposure prophylaxis and VZV infection in antibody negative patients

**Shingrix's ©** broader use in immunocompromised patients was considered, however current guidelines limits its use.

A simplified flowchart *(Figure 1)* was created to facilitate easy integration into clinical practice, enhancing patient safety.

## CONCLUSION

These audits highlighted the need for improved CNS education on VZV management and the importance of updated protocols.

The development of a clear, actionable protocol and a simplified flowchart addresses identified gaps, ensuring enhanced **patient safety** and streamlined clinical practice in response to the updated Shared Care protocols.

## ACKNOWLEDGEMENTS

Kelly Bicknell- Clinical Virologist at Portsmouth Hospital University Trust

NHS
Portsmouth Hospitals University
NHS Trust

# Assessing the effect of mental wellbeing on professional competency and medical training: A study on tomorrow's Women in Surgery

Maria Mir[1] , Anisa Haashi[1] , Eleanor Todd[1]
1. GKT School of Medical Education, King's College London

## Introduction:

- In a male-dominated field, female surgeons face additional stress factors resulting in greater levels of suicide, anxiety, and depression.[1]
- Female consultant surgeons have disproportionately higher rates of burnout compared with males at a similar competence level.[2]
- Research shows the importance of intervening early in medical school to improve mental well-being.[3]

## Study Aim:

Evaluating the perspectives of female healthcare students on the impact of mental well-being on professional competency and medical training, both before and after a seminar and workshop on mental health.

## Methods:

A total of 28 participants, across multiple universities, completed the pre- and post-questionnaire using a 5-point Likert scale. The intervention itself included a workshop and seminar focused on mental wellbeing including skills required for mental self-care. Data was subsequently analysed using a one-tailed test to assess statistical significance.

## Results:

The following measures all increased and were statistically significant [Figure 1]:

- Participants' confidence in managing their emotional well-being (p=0.00167666),
- Perception of the importance of mental well-being education (p=0.011194106)
- Belief in receiving sufficient mental health education (p= 0.000951937)

However, their view on needing to understand how to manage mental well-being for professional competency did not show a significant change (p= 0.286577667) [Figure 1].

**Acknowledgments:**

We would like to thank the KCL Women in Surgery Committee for making this conference successful. Special thanks to Dr Becs Winterborn for delivering the seminar and workshop.

## Discussion:

- The results shows that engaging female healthcare students in mental self-care practices such as meditation can aid their professional competency.
- Providing early and practical education can be a preventative approach to reduce the rising mental health crisis amongst female healthcare professionals.
- Moreover, the increase in students' belief in receiving sufficient mental health education suggests when mental well-being teaching is made clear, students can recognise what constitutes well-being education.
- Requirement of wellbeing management for competency scored highly on the Likert scale before and after the event, demonstrating the awareness amongst female healthcare students in the requirement of mental self-care to become professionally competent. This highlights the importance of mental well-being education being implemented in the medical curriculum.

## Limitations:

Conference promotion included advertising mental well-being as a key theme, potentially attracting students keen about this field. This may have caused a sampling bias. Further research needs to be carried out on a larger sample including demographic data to explore female perceptions on mental health in greater detail.

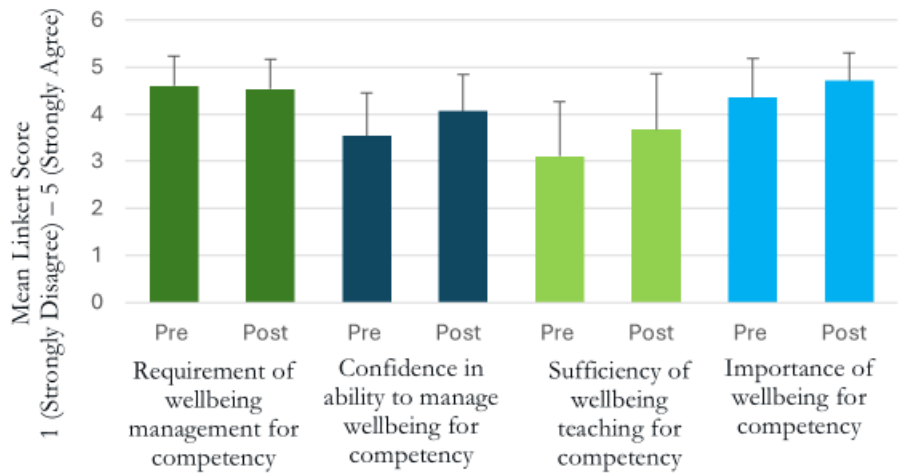


***Fig. 1. Questionnaire results before & after intervention***

## Conclusion:

- This study highlighted the important link between mental wellbeing and professional competency.
- With burnout identified as a crisis amongst female healthcare professionals, early and consistent introduction to mental self-care starting in medical school could reduce burnout rates faced later.
- Medical schools and surgical training programmes should consider reviewing their curriculums to include clearer and more accessible mental well-being education, especially given the crisis of burnout.

**References:**

Sabih Q, Cappuccino H, Edge S, Takabe K, Young J. Burnout in the female surgical trainee; is it time to consider a more global approach to tackle this issue? Surgery in Practice and Science. 2023 Jun 1;13:100162–2.

Johnson J, Al-Ghunaim TA, Biyani CS, et al. Burnout in Surgical Trainees: a Narrative Review of Trends, Contributors, Consequences and Possible Interventions. Indian Journal of Surgery. 2021 Jul 29;

Yeluru H, Newton HL, Kapoor R. Physician Burnout Through the Female Lens: A Silent Crisis. Frontiers in Public Health. 2022 May 24;10.

# Current Concepts in the Management of Hypertension in Hypertensive Disorders of Pregnancy – A Systematic Review of International Guidelines

Marianna Danielli [1,2], Thurkga Moothathamby[1], Kate Wiles[1,2], CM, Mohammed Y Khanji[1,2,3], Carmen Maniero[2], Ajay Gupta[1,2]

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2 Barts Health NHS Trust, London, E1 1BB, UK
3 Newham University Hospital, Barts Health NHS Trust, London E13 8SL, UK

## Background and Objectives

Hypertensive disorders of pregnancy (HDP) are a leading cause of adverse maternal and perinatal outcomes worldwide. This systematic review aims to critically analyse international practice guidelines specifically focused on the management of HDP in cases of gestational hypertension (GH) and pre-eclampsia (PE). Our objective is to identify similarities and discrepancies in the classification, diagnosis and management of these condition, in view of improving the quality of care for HDP.

## Methods

Published guidelines from January 2010 to April 2024 were searched, utilising databases such as MEDLINE and EMBASE; and other sources including the Emergency Care Research Institute (ECRI) Guidelines Trust, and the Guidelines International Network's website (GIN). Guidelines were only included if written in English and not derived from other guidelines. All the guidelines were compared for their definitions, diagnostic criteria, recommendations for pharmacological and non-pharmacological management and contraindications. The AGREE II score tool was used to assess quality of all the included guidelines.

Table 1. Similarities, differences and knowledge gaps among the explored guidelines.

| Similarities | Differences | Knowledge Gaps |
|---|---|---|
| ➢ Definition of GH and PE | ➢ Intervals between BP readings for HDP diagnosis | ➢ Prophylactic use of calcium, vitamins, antioxidants and folic acid |
| ➢ BP thresholds for GH diagnosis | ➢ Proteinuria, creatinine, platelets, transaminases thresholds for PE diagnosis | ➢ Recommendations on weight control, diet, salt restriction |
| ➢ Proteinuria, thrombocytopenia, elevated transaminase, severe headaches, visual disturbances, abnormal umbilical artery Doppler and FGR are diagnostic criteria for PE | ➢ Pulmonary oedema as a PE diagnostic criterion | ➢ Specific recommendations on type, intensity, and frequency physical activity during pregnancy |
| ➢ Aspirin for HDP prevention | ➢ Stillbirth and placental abruption as associated features of PE | ➢ Dietary modifications |
| ➢ Benefit of moderate exercise | ➢ Timing and dosage of prophylactic aspirin | ➢ Benefit of weight loss programs |
| ➢ Labetalol, nifedipine and methyldopa for HDP pharmacological management | ➢ BP threshold to start drug treatment in HDP and PE | ➢ Second line pharmacological treatments in HDP management |
| ➢ Avoidance of ACEi and ARB in pregnancy | ➢ BP target values to be reached upon treatment in HDP and PE | ➢ Safety of β-blockers (other than labetalol) and calcium channel antagonists in pregnancy |
| | ➢ Use of diuretics in HDP | |

## Results

Recommendations from 12 included guidelines were compared. All guidelines were consistent in their definition of GH and PE and which antihypertensive agents to avoid. Guidelines differed in the recommended blood pressure thresholds for initiation of antihypertensive medication and treatment targets. The use of aspirin was universally recommended, but guidance on non-pharmacological interventions such as salt restriction in diet, weight loss in the obese, and exercise showed discrepancies among guidelines.

## Conclusions

All guidelines acknowledge the significant morbidity associated with HDP and advocate for timely diagnosis and management to reduce associated morbidity and mortality. However, there is significant discrepancy in many aspects including definition and pharmacological management. More research is needed to understand optimal blood pressure (BP) thresholds at which to initiate antihypertensive medication regimens, the choice of antihypertensive, and the efficacy and benefits of non-pharmacological interventions in HDP. These findings exhibit knowledge gaps and should be addressed in future guidelines.

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# Stepping Towards Success:
# Enhancing Outcomes for Outpatient Antibiotic Therapy (OPAT) in Diabetic Foot Infection (DFI)

Dr. Kanupriya Bajaj, Dr. Marisha Sharma, Dr. Kate Eleftheriadou, Dr. Abdulahi Aden, Dr Aashish Rayapati Supervisor: Dr Gautam Das, Mr. Ashwin Unnithan, Sally Greensmith

## Background

Diabetic foot infections are a major challenge for outpatient care. These infections often need long-term intravenous antibiotic treatment, but even with this approach, high rates of readmission (32%), amputation (21%), and mortality (8.5%) still occur. Long-term IV therapy also increases risks like antibiotic resistance, side effects, and complications, putting a financial strain on the NHS.

## Aim

Comparison of outcomes for diabetic foot infection patients treated with parenteral antibiotics in Ashford and St Peter's Hospitals pre and post interventions.

## Methodology

Study Type: Prospective Study
Patent Criteria - Adult patients with Diabetic Foot Infections
Recurrent or current treatment with IV ABX
Timeline - February 2024 - present (ongoing)
Methodology - Data Collection using a standardised tool, prospective analysis of collected data

## Observations

Audit 1: Aug 21 – Aug 23

48 ♂ 11 ♀

Sample size 59

### Infections outcome



Extended treatment

### OPAT Outcome

5% Indeterminate
22% Partial success
36% Failure
37% Success

## Interventions

**Clinic Introduction**
Introduction of a pilot clinic for post-admission follow-up and early switch to oral therapy

**Optimised referral pathways**
Streamline pathways by introducing a uniform clerking template and HCP teachings for critical conditions.

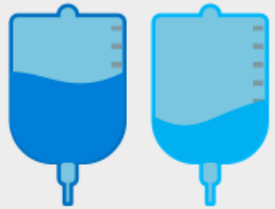
**New innovations**
Trialing StimulanR antibiotic beads as an adjunct to therapy for our patients.

## Treatment outcomes

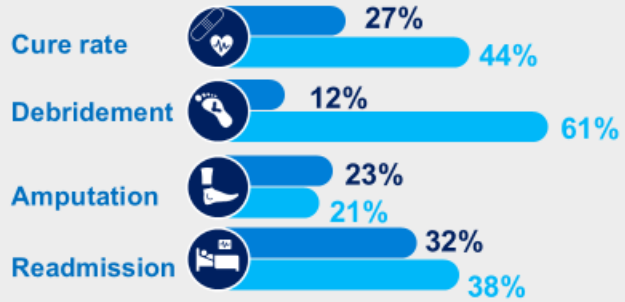
Audit 1: Aug '21-Aug'23 | Audit 2: Since Feb 2024

17 ♂ 11 ♀ Sample size 28

### IV ABX > 6 weeks




### ADR


| Impact | Significant reduction in patients receiving extended IV ABX | Reduced Adverse drug reactions | Higher cure rate | Decreased waiting times from 4 weeks to 1 week |
|---|---|---|---|---|

## Conclusion

The preliminary results from the clinic highlighted the importance of early 36% and regular post-discharge follow-up. This clinic also enables the early adoption of newer treatments for optimal results.

## Way forward

- Complete the prospective study in process, with a 12-week follow-up, in line with national guidelines to evaluate infection and OPAT outcomes in our cohort.
- Streamline patient pathways in all three settings: inpatient, outpatient, and community, for continuous and consistent care for all.
- Evaluate the applicability and outcomes of new treatments and technology, such as Stimulan$^{R}$ and Thermology health, in our outpatient population to improve outcomes.

# Can the patient stand unassisted?

# A quality improvement project to recognise the importance of patient mobility for barium swallows

Dr M Raza, Dr L Chen, Dr O Roche

## INTRODUCTION

Contrast swallow studies use a contrast medium, such as barium or water soluble contrast, and x-rays to obtain multiple views of the upper GI tract, with different patient positioning. They can be useful for the diagnosis of conditions such as oesophageal motility disorders, strictures and fistulas. For these, patients should be able to stand unassisted and tolerate being turned in multiple directions on a table, such as upright, lateral and horizontal.[1] Several occurrences of terminated or limited studies, due to patient mobility issues, were noted in the department.

## AIM

We sought to assess the number of studies affected, by either being terminated or reported as limited due to poor mobility and introduce interventions to highlight the significance of patient mobility to requesting clinicians and ensure that these studies are performed on patients that can tolerate the technique.

## METHOD

Contrast swallow reports for adult patients were retrospectively analysed over 6 months. We assessed the number reported to be abandoned or limited due to poor mobility, as mentioned in the report. The results prompted modification of the request form by adding a mobility screening question (Figure 1). If answering no, requesting clinicians are prompted to discuss with the duty radiologist. A second cycle of data was collected to evaluate this intervention.

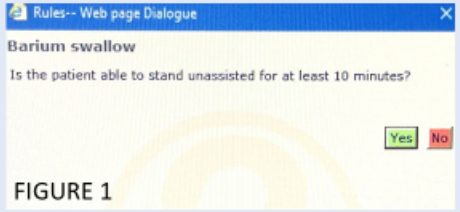



FIGURE 1

## RESULTS

From the first 6-month cycle (Figure 2), 38% of the studies performed were reported to be limited, resulting in limited views. 5 studies were terminated due to mobility reasons. The second 6 month-cycle (Figure 3) showed improvement, with 3 studies terminated and 22% limited due to poor mobility. 1 request was rejected for a bedbound patient due to the mobility screening question.

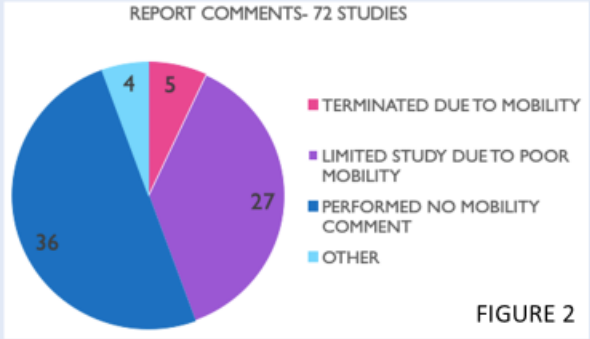



FIGURE 2

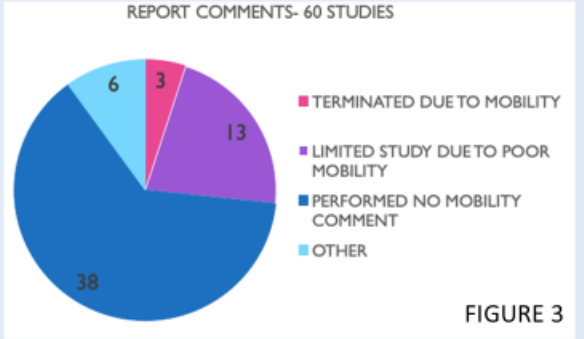



FIGURE 3

## CONCLUSION

Our project demonstrated an improvement in studies being performed safely and completed within the department, with fewer studies limited due to poor patient mobility. It also highlighted the significance of patient mobility for this study to clinicians and addressed an area of concern for patient safety.

## REFERENCES

1. Chen, A. (2023) *Barium swallow*, *StatPearls [Internet]*. Available at: https://www.ncbi.nlm.nih.gov/books/NBK493176/ (Accessed: 25 October 2024).

# Bridging the education gap: Human factors training in healthcare simulation

**Dr Martin Yardley, Dr Alex Tyler, Dr Rebecca Sullivan**
**Whittington Hospital, London, United Kingdom**

Whittington Health NHS Trust

## Introduction

- Recent changes to the Internal Medicine (IM) Training programme, both IM Stage 1 (IMS1) and IM Stage 2 (IMS2), state, that human factors simulation is an ARCP requirement during their training[1].
- At Whittington Hospital, 0 of 32 medical trainees had previously undertaken human factors training, representing an unmet educational need to be addressed.

## Methods

- A half-day, human factors simulation course was created, to improve communication skills and the ability to deal with complex issues pertaining to patients and colleagues. All Whittington Hospital IMS1 (IMT Years 1-3) and IMS2 (ST4+) trainees were invited to attend.
- Individual communication scenarios were created by course organisers and delivered by trained actors. These addressed the generic professional capabilities of trainees, specific to their curriculums[2]. These included legal & ethical considerations and challenging communication.
- Following each scenario, a structured debrief was used to guide key learning and group discussion through reflective practice.
- After the course, feedback from trainees was obtained, Likert-rated questions were used to assess agreement with statements on a scale of 1 to 5. Free text questions were used to identify specific learning and identify areas that could be improved.

## Results

26 trainees (12 IMS1 and 14 IMS2) attended a human factors simulation course from Feb to Jul 2024.

- The median results from the Likert-rated questions were as follows:
  - The course met its aims (4.9/5),
  - The course met personal and professional learning needs (4.9/5)
  - The learning would positively impact patient care (4.9/5),
  - The course enhanced MDT working (4.6/5)
  - The course improved knowledge of patient safety issues (4.7/5)
  - Any errors made were used positively as learning tools (4.8/5)
  - Learning opportunities created in debriefs resulted in trainees reflecting on their practice (4.9/5).
- Free text feedback demonstrated trainees enjoyed the variety of scenarios and found debriefs helpful for learning (Figure 1)

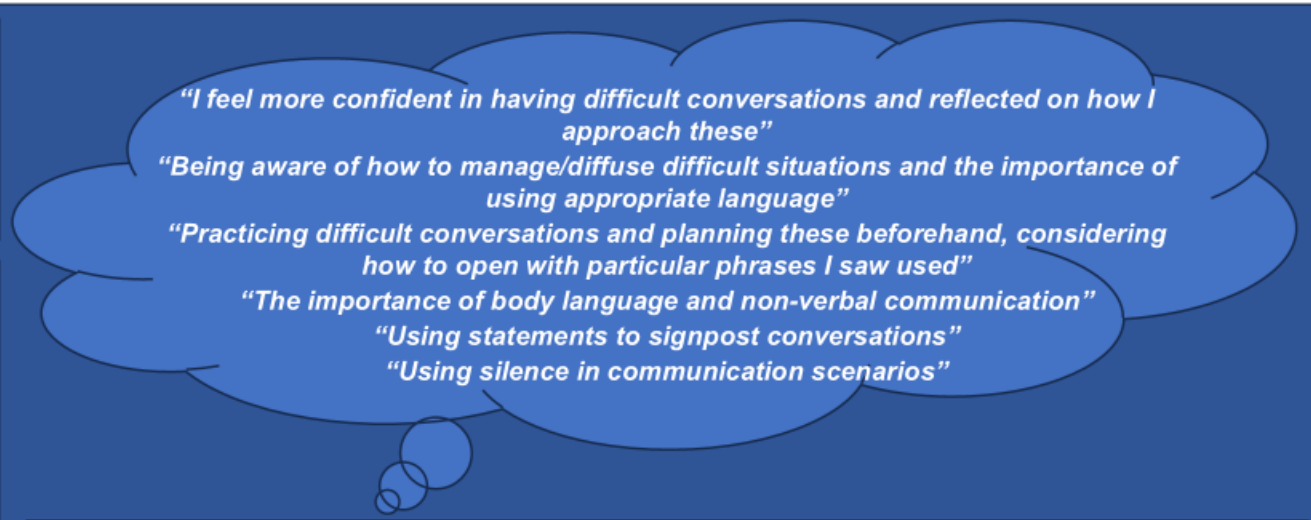



Figure 1: Feedback on key learning points and changes trainees will make to their practice

## Conclusions

- This course successfully addressed the unmet need for human factors training for Whittington Hospital's medical trainees.
- Trainees reflected on the various influences affecting human behaviours in their roles and applied that knowledge to their clinical practice. These included skills such as leadership, teamwork, communication skills and time management.
- The feedback supports the value of debriefing with small groups of mixed seniority (from IMTI 1 – ST7)
- Greater sharing of information between other medical educators, via a simulation network, would help refine and create more scenarios, enriching the learning possibilities in this growing area of postgraduate medical education.

## References

1. JRCPTB - ARCP Decision Aids [Internet]. Thefederation.uk. [cited 2024 Aug 10]. Available from: https://www.thefederation.uk/training/specialties/internal-medicine [Accessed 10/08/2024].
2. General Medical Council. Generic professional capabilities framework [Internet]. Gmc-uk.org. 2019. Available from: https://www.gmc-uk.org/education/standards-guidance-and-curricula/standards-and-outcomes/generic-professional-capabilities-framework [Accessed 10/08/2024].

# *The Interplay Between Haematological Disorders and Osteoporosis: Evaluating the Risks*

*Marwa Mohareb 1, Kanishk Jain 1, Anupama Nandagudi 1,2, Anurag Bharadwaj 1*
*1 Department of Rheumatology, Basildon and Thurrock University Hospital, Basildon, UNITED KINGDOM.*
*2 Visiting Associate Professor, Faculty of health , medicine and social care. Anglia Ruskin University, Cambridge, UNITED KINGDOM.*

***Background:***

Secondary osteoporosis is a frequent clinical concern, sometimes attributed to underlying haematological diseases. These conditions can either be previously known or identified through routine evaluations. Notably, multiple myeloma and monoclonal gammopathy of undetermined significance (MGUS) are amongst the secondary causes of OP.

***Objectives:***

To determine the prevalence of monoclonal gammopathies in an inception cohort of patients diagnosed with osteoporosis and osteopenia.

***Methods:***

It is a retrospective study of 117 patients with low bone density (2 were excluded) between January and June 2022. We gathered data encompassing age, gender, DXA scan referral reasons, any history of fragility fractures and secondary risk factors linked to osteoporosis.

As part of our evaluation, we conducted tests to detect monoclonal gammopathy. This involved performing a serum protein electrophoresis (SPEP), a serum free light chain (sFLC) assay, and a urine Bence Jones protein (uBJP) test, alongside standard blood tests designed for bone density assessment.

***Results:***

Our cohort consisted of 102 females (88.7%), with ages ranging from 47 to 90 years (median age: 69 years). Among this cohort, 47% were diagnosed with osteopenia, 53% with osteoporosis, and 59% had a history of fragility fractures.

The primary reasons for referrals to DXA scans was low-trauma fractures (54.8%), radiological evidence of osteopenia (22.6%), hyperparathyroidism (7.8%), breast cancer (6.1%), and premature menopause (5.2%).

Significant risk factors for osteoporosis were categorized based on their prevalence percentages. The most notable factors were female gender (88.7%) history of low-trauma fractures (55.7%) premature menopause (25.2%), parental hip fracture (24.3%), proton pump inhibitor use (16.5%) .

Notably, we identified two patients with abnormal test results. Patient 1, an 80-year-old female with osteopenia, exhibited an elevated Kappa/Lambda ratio and a positive uBJP, resulting in a diagnosis of multiple myeloma after presenting with fractures. Patient 2, a 60-year-old female with osteoporosis, displayed IgM paraproteinemia and a low Kappa/Lambda ratio, leading to a diagnosis of low-grade B cell non-Hodgkin's lymphoma following a humeral fracture and hyperparathyroidism

Table: classification according to laboratory results.

| | No. (%) |
|---|---|
| **sFLC ratio** | Normal 106 (92.2%) |
| | Abnormal 2 (1.7%) |
| | ND 7(6.1%) |
| **sPEP** | Normal 108 (93.9%) |
| | Abnormal 1 (0.9%) |
| | ND 6 (5.2%) |
| **uBJP** | Normal 95 (92.2%) |
| | Abnormal 1 (0.9%) |
| | ND 19 (16.5%) |

ND: not done

***Conclusions:***

This study revealed the absence of MGUS, with only isolated instances of multiple myeloma and B cell lymphoma among patients with osteoporotic fractures. The study highlights the significance of recognizing haematological abnormalities in patients with osteoporotic fractures and the importance of early referral for appropriate diagnosis and management. The investigation of monoclonal gammopathy should be pursued further to better understand its potential connection to osteoporosis.

# Post-acute coronary syndrome driving advice for cardiology inpatients: a quality improvement project

M Dyson[1], A Sood[1], N Hussain[1]
[1]*Sandwell and West Birmingham Hospitals NHS Trust*

## Introduction

Patients with acute coronary syndromes (ACS) are required to follow national Driver and Vehicle Licensing Agency (DVLA) driving guidelines following their diagnosis.[1] Prompt communication and documentation of appropriate advice is critical to ensure patient and public safety, in addition to legal compliance.

This quality improvement project aimed to improve the communication of post-ACS driving guidelines and enhance resident doctors' knowledge and confidence.

## Methods

Two PDSA cycles were completed over a twelve week period. Electronic records of cardiology inpatients diagnosed with ACS at SWBH were reviewed to determine whether driving advice was provided and if it aligned with current DVLA guidelines.
The baseline audit included fifty-two patients, while the subsequent data collection periods included thirty-four and fifty-five patients, respectively.

**Intervention 1: informal teaching and sharing of DVLA guidelines via email**
**Intervention 2: displaying educational posters around the cardiology wards in targeted locations, with QR codes to current guidelines, shared with junior and senior members of cardiology team**

## Results

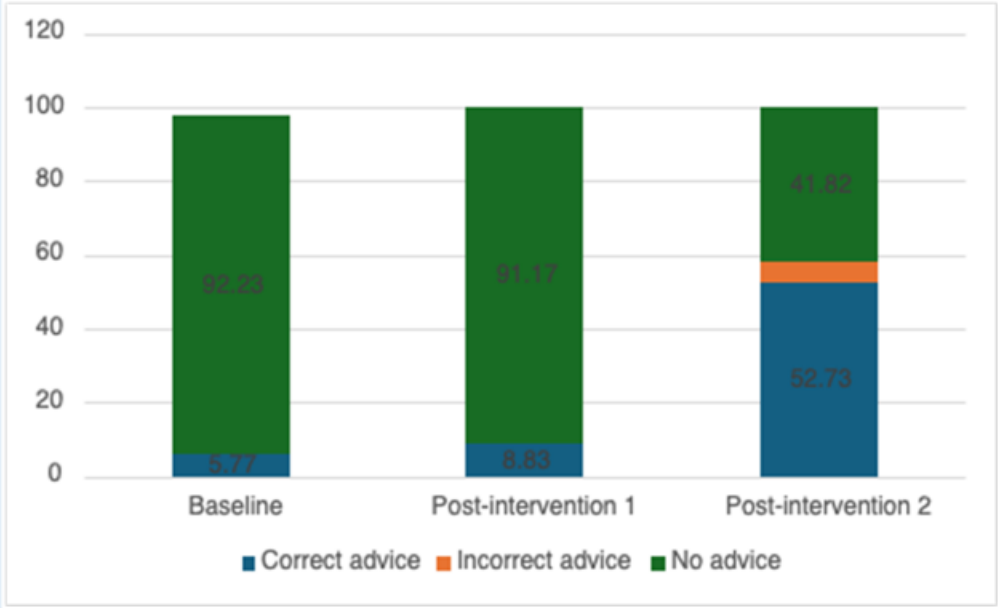



*Figure 1: Comparison of documentation of driving advice between data collection periods*

| Questionnaire statement | Pre | Post |
|---|---|---|
| I am aware that there are DVLA restrictio ns regarding driving post-ACS | 4.4 | 4.6 |
| I am aware of the varying advice in different clinical contexts | 3.4 | 4.2 |
| I regularly include this advice in discharge paperwork | 2.8 | 3.8 |
| I feel confident advising patients of driving restrictions related to ACS | 2.4 | 4.2 |

*Figure 2: Results of pre and post intervention resident doctor questionnaires*

## Discussion

The initial findings of suboptimal documentation, along with resident doctors' limited perceived knowledge of post-ACS driving advice, are consistent with national trends.[2,4]

Informal feedback from ward doctors after the first intervention suggested a lack of confidence in delivering DVLA advice unless initiated by senior members of the team. Therefore, the second intervention incorporated senior doctors. Following its implementation, documentation rates were noted to improve significantly.

## Conclusion

This project demonstrates that targeted educational interventions can significantly enhance documentation of post-ACS driving advice.

Collating feedback from key stakeholders in such projects can help guide the design and delivery of effective quality improvement interventions. However, ongoing monitoring is required to evaluate the longer-term impact of such initiatives and achieve optimum compliance. Engaging senior clinicians and non-rotational staff could play a crucial role in driving sustained improvements.

References: [1] GOV.UK. Heart attacks, angioplasty, and driving [Internet]. GOV.UK. 2016. Available from: https://www.gov.uk/heart-attacks-and-driving, [2] Vusirikala A, Backhouse M, Schimansky S. Improving driving advice provided to cardiology patients on discharge. BMJ Open Quality. 2018 Mar;7(1):e000162. [3] Nair D, Rees O, Harbham P. Improving the provision of accurate driving advice to cardiac inpatients on discharge – a matter of both public and patient safety. European Heart Journal. 2022 Oct 1;43(Supplement_2). [4] Pearse S, Savage P. Doctor, can I drive? A quality improvement project to improve driving advice given to patients in our cardiology unit. Clinical Medicine. 2019 Jun;19(Suppl 3):s68–8.

# Enhancing colorectal cancer screening uptake: a multi-cycle quality improvement project in a GP serving a diverse, underprivileged population

*Campbell, C., Mahesh, M., Looby, I., Alampritis, G., McKeown, J.*

## Background

The Faecal Immunochemical Test (FIT) screens for colorectal cancer.

FIT screening uptake is low in deprived areas[1].

Oak Tree Medical Centre (OTMC) shows this: FIT uptake is 17% below the '21/22 UK average.

## Aim

↑ **FIT Uptake** at OTMC

## Methodology

| | | |
|---|---|---|
| 1 | Survey | Why do patients refuse FIT testing? |

Self-reported → categorised during analysis

| | | |
|---|---|---|
| 2 | QIP | 3 PDSA cycles to ↑ FIT uptake |

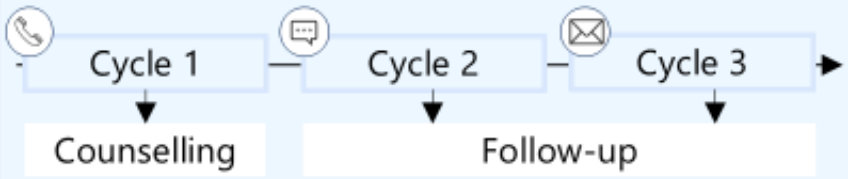



Figure 1. QIP Timeline.

## Results

| | | |
|---|---|---|
| 1 | Survey | Reasons for refusing FIT test |

| | |
|---|---|
| Unaware of FIT test<br>Not a priority<br>Lack of belief in value | 59% |
| Medical fatigue<br>Extended time abroad | 41% |

Figure 2. Reasons for non-response were actionable (green) or unactionable (red).

| | | |
|---|---|---|
| 2 | QIP | Intervention impact on FIT uptake |

Our interventions led 17% of FIT decliners to test

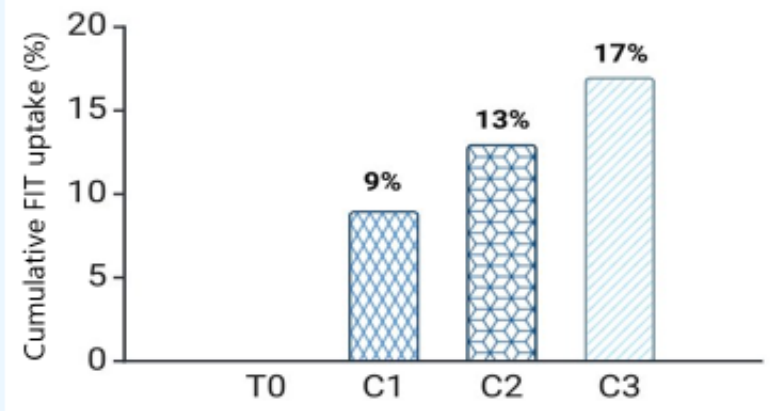



Figure 3.

## Conclusion

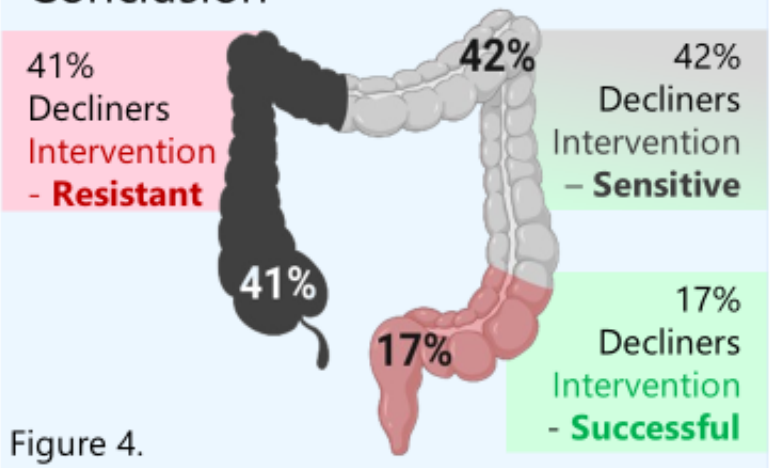



Figure 4.

Diverse, deprived populations are **partially resistant** to interventions to ↑ FIT uptake.

Despite this, counselling & persistent follow-up **increase FIT uptake** in this demographic.

## References

1. *Creavin A et al. Inequality in uptake of bowel cancer screening by deprivation, ethnicity and smoking status: cross-sectional study in 86 850 citizens. J Public Health (Oxf). 2023;45(4):904-9112.*
2. *Figures 3 & 4 created with BioRender.com.*

# Delays in Lumbar Puncture (LP): An Audit

**Primary Author: Dr Megan Li Yuen Yeoh[A]**
**Co-Authors: Dr Anshul Agarwal[A], Dr Martin Lee[A]**
**[A]Norfolk and Norwich University Hospitals NHS Foundation Trust**

Norfolk and Norwich University Hospitals
NHS Foundation Trust

## Introduction

- Every year, meningitis affects at least 2.5 million people globally; encephalitis 500,000[1,2]
- Both have high morbidity and mortality[3,4]
- Best cares should be given for best outcomes
- **National Guidelines: Suspected bacterial meningitis – LPs should be performed before starting antibiotics, unless unsafe/may delay antibiotics administration[5]**
  - **antibiotics should be started within 1 hour of presentation to hospitals[5]**
- As encephalitis can occur concurrently, LPs should be performed as per meningitis guidelines[6]
- Noticed majority of patients had delays getting their LPs done
- Time taken for LPs to occur audited and causes for the delays investigated

## Methods

- Retrospective evaluation of data
- Inclusion criteria: adults (aged ≥16) with suspected meningitis/encephalitis admitted to the Neurology Department of a tertiary hospital from August 2023 till December 2023
- Patients' notes reviewed from an electronic document management system

## Results & Discussion

- Sample size: 37; 33 had LPs done
- **None had LPs done within an hour**
- **Median time taken from admission: 77 hours**


**Graph 1: Time taken for LPs to be done from admission**

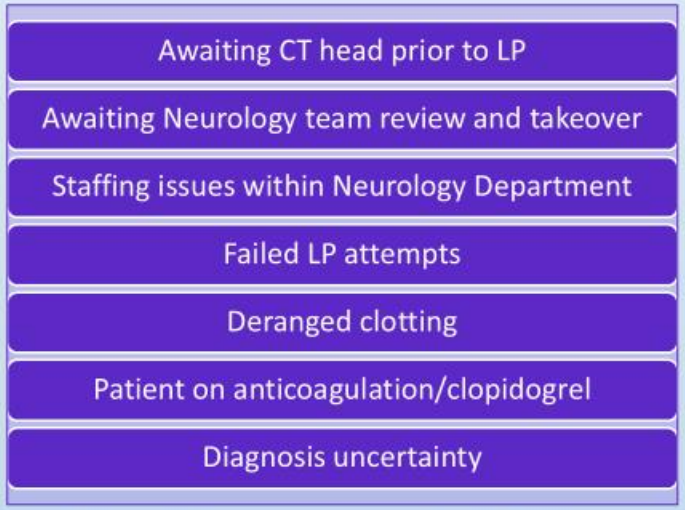



**Figure 1: Common reasons for LP delay**

- 28/37 had CT head done despite guidelines: should not be routinely performed before an LP[5]
- Only 10% of the CT scans were in line with guidelines[5]

## Conclusion

- Significant delays in LPs done
- Significant amount of CT head requests not indicated and contributed to delays
- Need to be familiar with guidelines
- CT heads should not be requested unnecessarily

## References

1. Meningitis and septicaemia | Meningitis Research Foundation [Internet]. https://www.meningitis.org/ [Accessed 8 September 2024].
2. Encephalitis Society [Internet]. The Encephalitis Society. https://www.encephalitis.info/ [Accessed 8 September 2024].
3. Meningitis - bacterial meningitis and meningococcal disease: What is the prognosis of acute bacterial meningitis? [Internet]. Clinical Knowledge Summaries (CKS). National Institute for Health and Care Excellence (NICE) https://cks.nice.org.uk/topics/meningitis-bacterial-meningitis-meningococcal-disease/background-information/prognosis/ [Accessed 8 September 2024].
4. Death from encephalitis - Encephalitis International. Encephalitis International. 2024. https://www.encephalitis.info/effects-of-encephalitis/death-from-encephalitis/ [Accessed 8 September 2024].
5. Recommendations | Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management | Guidance | NICE [Internet]. www.nice.org.uk. 2024. https://www.nice.org.uk/guidance/ng240/chapter/Recommendations#investigating-suspected-bacterial-meningitis-in-hospital [Accessed 8 September 2024].
6. Encephalitis and Meningoencephalitis (Causes, Symptoms, and Treatment) [Internet]. patient.info. https://patient.info/doctor/encephalitis-pro [Accessed 8 September 2024].

# Simulating Success: a Day of Diabetes and Endocrine Challenges

Catrin Fernyhough[1], Mili Dhar[1], Pavit Luthra[1], Rebecca Gorrigan[2], Kirun Gunganah[1]

1.Newham University Hospital, Barts Education Academy , Barts Health NHS Trust London

2. St Bartholomew's Hospital, Barts Health NHS Trust

## Concept and Design

- There is an increasing emphasis on the role of **simulation-based learning**, a form of **experiential learning**, in medical education. It is required for all IMT Stage 2 trainees (1).
- We designed a Diabetes and Endocrine (D&E) simulation day with a focus on specialty specific emergencies.
- Scenarios included **diabetic ketoacidosis, thyroid storm, hyperosmolar hyperglycaemia state, hyponatraemia and pituitary apoplexy.**
- Each scenario had targeted learning outcomes, mapped to GIM and D&E curriculum CIPS. Recent case studies and evidence-based learning guidelines (e.g. JBDS) were incorporated.
- Our objective was to enhance trainees' ability to manage D&E emergencies while developing non-technical skills and an understanding of maternal medicine in this context.

## On the day

- 9 North-East London D&E Trainees (ST4-7) attended.
- We delivered 5 high-fidelity simulation scenarios, and participants entered in pairs.
- Scenarios lasted around 20 minutes with a 30-40 minute debrief and discussion afterwards.
- Debriefing was conducted using a three -phase model (2), supported by two D&E consultants.

**References:**

(1) Internal Medicine Stage 2 ACRP Matrix Decision Aid for August 2022.

(2) Jaye P, Thomas L and Reedy G. 'The Diamond': a structure for simulation debrief. *Clin Teach*. 2015;12(3):171-175.

"Really useful session for D&E trainees, very practical points for discussion on the cases.""

Figure 1

Figure 2

"Excellent debriefs, very interactive, supportive atmosphere"

Figure 3

"Exquisite and comprehensive"

"Excellent complexity of scenarios"

## Results and Discussion

- All participants found the course **'Very Useful'**, with scenarios felt to be complex but realistic. Comments highlighted the debriefs as particularly useful.
- All reported an **improved understanding** of human factors in the workplace; key learning points included **situational awareness** and **closed-loop communication.**

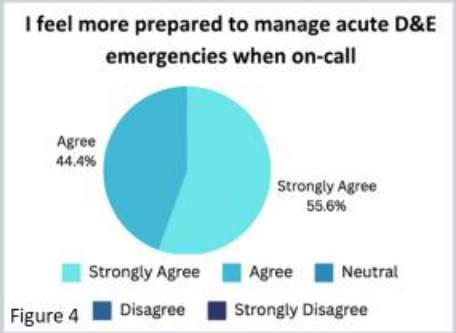



Figure 4

Faculty observed that debriefs facilitated diverse discussions, lateral thinking and reflection. Trainees were able to receive direct feedback from specialty consultants.

## Conclusion & Next Steps

- Participants found this course valuable in enhancing both human factors and specialty knowledge.
- Consultant expertise played a key role, allowing trainees to ask questions and bridge knowledge gaps.
- Future plans include developing more scenarios and integrating the simulation day into the North-East D&E training pathway.
- We hope to link up with the Specialty Advisory Committee with the hope to introduce our concept to other deaneries.

# A case of large right atrial myxoma presenting as pyrexia of unknown origin

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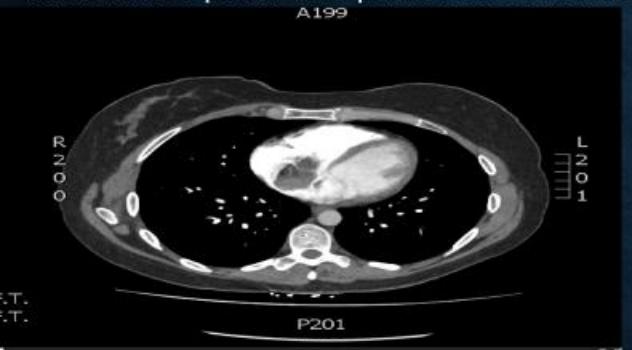
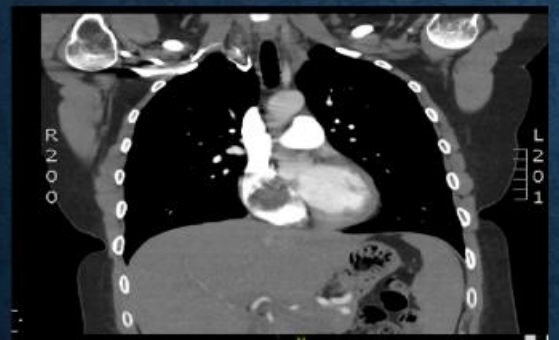
Rewan Hanno, Oncology registrar, Sheffield teaching hospital, UK
Manoharan Santhalingham, Cardiology consultant, Barnsley hospital, UK
Shovan Munjal, Medical consultant, Barnsley NHS foundation trust, UK

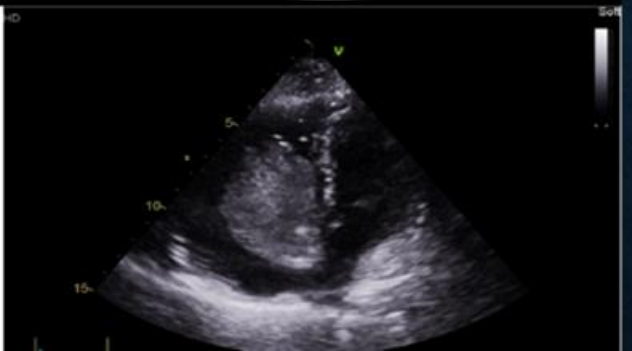
RCP Med+ 2024

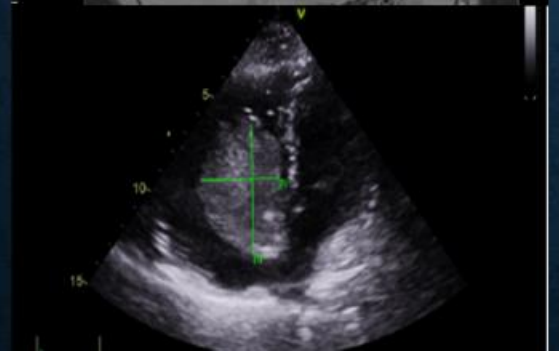
## Background

A lady in her late 30s with mild asthma presented with a two-month history of worsening malaise, cough, breathlessness, night sweats, fever, and significant weight loss. Initial investigations for infections, autoimmune diseases, and malignancy were negative, and treatment with antibiotics and steroids failed to improve her symptoms.
Upon admission, she was stable, but tests showed elevated CRP and D-dimer. A CT scan (figure 1 & 2) revealed a mass in the right atrium, which was confirmed by an echocardiogram (figure 3 & 4) as a large 5.5 x 3.7 cm pedunculated mass attached to the interatrial septum. The patient was transferred for surgical management.







## Key points:

1. Right-sided myxomas can manifest with symptoms of tricuspid stenosis and right heart failure. Common symptoms include exertional dyspnoea, pedal oedema, hepatomegaly, and ascites. On physical examination, a diastolic murmur, similar to the "tumour plop," can sometimes be appreciated at the tricuspid region; in addition, prominent "a wave" in the jugular veins can also be observed occasionally. [1]

2. However, in this particular case, the presentation was with constitutional symptoms and the patient was investigated thoroughly for other causes of PUO. The echocardiogram was done after the CT TAP (CT Thorax, Abdomen and Pelvis). We would like to emphasise that atrial myxomas are one of the rare causes of PUO, but should be in the differential diagnoses list. [1]

## REFERENCES

1. Atrial Myxoma - StatPearls - NCBI Bookshelf (nih.gov)

# RAPID RECURRENCE OF LEFT VENTRICULAR THROMBUS FOLLOWING ANTICOAGULANT DISCONTINUATION

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RCP Med+ 2024

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## Case summary:

This case report details the rapid reappearance of a left ventricular thrombus subsequent to the discontinuation of anticoagulation therapy in a patient with Anterior ST-Elevation Myocardial Infarction (STEMI) who underwent primary percutaneous coronary intervention (PCI) to the left main stem and thrombectomy in early 2023.

Subsequently, the patient developed severe persistent left ventricular systolic dysfunction, and a left ventricular thrombus was confirmed on echocardiography three months later (Figure 1). Despite initial therapeutic anticoagulation and resolution of the left ventricular thrombus on contrast transthoracic echocardiogram (TTE) (Figure 2), discontinuation of anticoagulation therapy led to a notable resurgence of the thrombotic lesion for which resumption of anticoagulants doe life has been planned (Figure 3).

This case underscores the critical importance of sustained anticoagulation in preventing thrombus recurrence and emphasizes the complex decision-making involved in discontinuing anticoagulant therapy in clinical practice

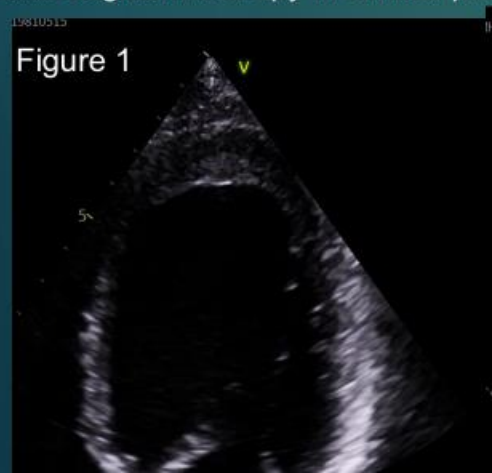
Figure 1

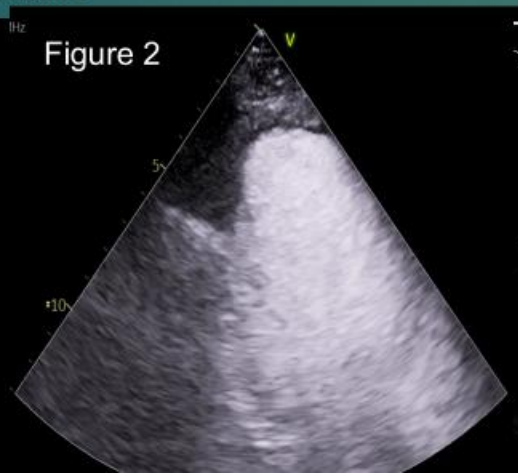
Figure 2

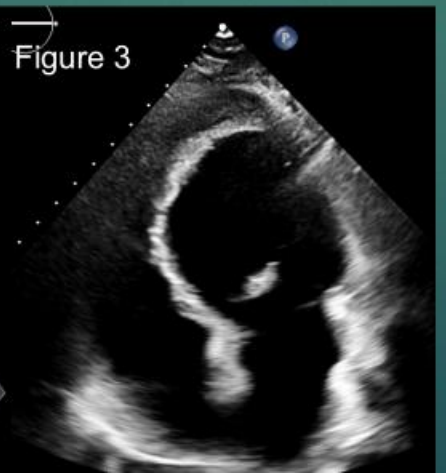
Figure 3

## TAKE HOME MESSAGES:

1. In acute anteroapical ST-elevation myocardial infarction (STEMI) patients undergoing reperfusion therapy, initiating prophylactic oral anticoagulant (OAC) therapy should be approached cautiously, considering the perceived risk of thrombus formation and bleeding. The duration of OAC treatment may vary from 1 to 3 months depending on individual bleeding risk factors. (1)

2. Post-myocardial infarction (MI) patients diagnosed with LV thrombus should receive OAC therapy for approximately 3 months based on available study data, however longer duration might be considered in special situations (1)

3. Cardiovascular Magnetic Resonance (CMR) imaging is recommended when echocardiography yields inconclusive results, particularly in cases where clinical suspicion of thrombus persists despite negative echocardiography findings. (1)

## REFERENCES

1) Ibeh C, McCarthy P, Misra A, et al. Management of patients at risk for and with left ventricular thrombus: A contemporary review. Circulation. 2022. Available from: https://www.ahajournals.org/doi/full/10.1161/CIR.0000000000001092 (Accessed: April 14, 2024)

# Systematic Review and Meta-Analysis of the Impact of Air Pollution on Respiratory Health: A Focus on PM2.5 and $NO_2$

Mohammed Azib Zahid[1], Malik Aamaz Khan[2]

## Introduction

**Background:** Air pollution is a pervasive global public health issue with significant implications for respiratory health. Fine particulate matter (PM2.5) and nitrogen dioxide ($NO_2$) are particularly concerning due to their ability to penetrate deep into the lungs, causing systemic inflammation and oxidative stress. Exposure to these pollutants has been linked to respiratory diseases such as asthma, chronic bronchitis, and increased respiratory mortality.

**Objective:** To systematically review and meta-analyze existing evidence on the relationship between long-term exposure to PM2.5 and $NO_2$ and adverse respiratory outcomes. To quantify the overall risk and explore potential sources of heterogeneity in the association between air pollution and respiratory health

## Methods

### Search Strategy:

- Conducted a systematic literature search of **PubMed**, **MEDLINE**, **EMBASE**, **Scopus**, and **Web of Science** up to **October 2023**
- Used a combination of MeSH terms and keywords related to **PM2.5**, **$NO_2$**, **respiratory health outcomes**, and **observational study designs**

### Inclusion Criteria:

- **Study Design:** Observational studies (cohort, case-control, cross-sectional)
- **Exposure:** Long-term exposure (≥1 year) to PM2.5 and/or $NO_2$
- **Outcomes:** Reported relative risks (RR) or odds ratios (OR) for respiratory outcomes
- **Population:** Human studies without age restrictions
- **Language:** Published in English

### Data Extraction and Quality Assessment:

- Extracted data on study characteristics, exposure assessment methods, outcome definitions, effect estimates, and confounders adjusted for
- Assessed study quality using the **Newcastle-Ottawa Scale**

### Statistical Analysis:

- Used a **random-effects model** to pool effect estimates.
- Assessed heterogeneity using the **$I^2$ statistic** and **Cochran's Q test**
- Conducted subgroup analyses based on pollutant type, age group, geographical region, and setting (urban vs. rural)
- Evaluated publication bias using **funnel plots** and **Egger's test**
- Performed sensitivity analyses to assess the robustness of the findings

## Results

### Study Selection:

- Identified **500** records; after screening, **7** studies met the inclusion criteria
- Total population across studies: **71,835** individuals from various regions

### Pooled Effect Estimates:

- **Overall Pooled RR: 1.16** (95% CI: 1.11–1.20) for respiratory outcomes associated with air pollution exposure
- **Heterogeneity:** Minimal ($I^2$ = 0%)

### Subgroup Analyses:

- **By Pollutant Type:**
  - **PM2.5 Exposure:** RR = **1.19** (95% CI: 1.13–1.25)
  - **$NO_2$ Exposure:** RR = **1.15** (95% CI: 1.10–1.20)
- **By Age Group:**
  - **Children:** RR = **1.18** (95% CI: 1.04–1.33)
  - **Adults:** RR = **1.19** (95% CI: 1.12–1.27)
- **By Geographical Region:**
  - **Asia:** RR = **1.22** (95% CI: 1.09–1.36)
  - **Europe:** RR = **1.14** (95% CI: 1.09–1.20)
  - **North America:** RR = **1.18** (95% CI: 1.07–1.28)
- **By Setting:**
  - **Urban Areas:** RR = **1.15** (95% CI: 1.10–1.20)
  - **Rural Areas:** RR = **1.22** (95% CI: 1.09–1.36)

### Publication Bias and Sensitivity Analyses:

- **Funnel plots** appeared symmetrical
- **Egger's test:** No significant publication bias detected (p = 0.45)
- **Sensitivity analyses:** Results remained consistent when excluding lower-quality studies

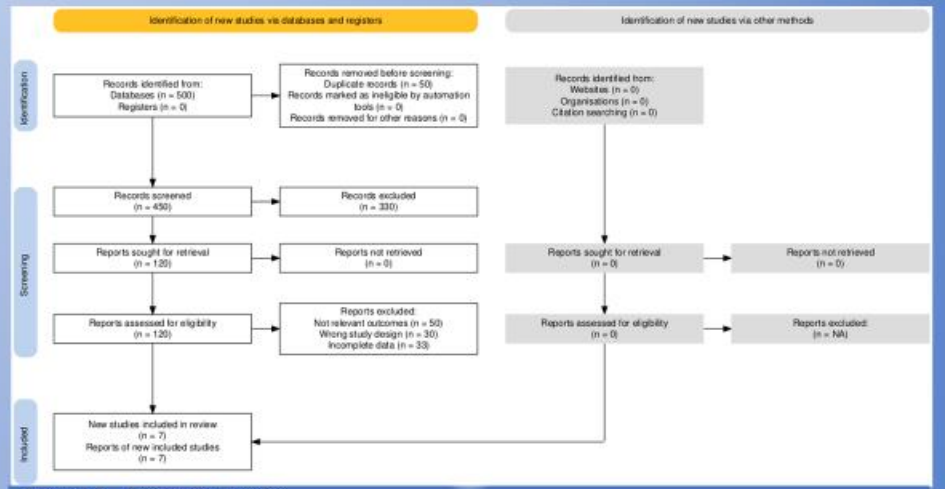


Figure 1 – PRISMA graphic

## Conclusions

### Key Findings:

- There is a significant association between long-term exposure to **PM2.5** and **$NO_2$** and increased risk of respiratory diseases, including asthma and chronic bronchitis
- **PM2.5** poses a slightly higher risk compared to **$NO_2$**
- Elevated risks are particularly observed in **Asian populations**, **rural settings**, and among **children**

### Implications:

- Highlights the urgent need for stringent air quality regulations and targeted public health interventions
- Policymakers should prioritize reducing emissions from key sources and protecting vulnerable populations

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Royal College of Physicians MED24

# Revolutionising hospital-wide handover: A cost-effective solution using existing Microsoft Suite licensing.

Mohammed S. Azam MBChB BSc (Hons) | Withybush General Hospital, Wales, UK

## Background

The digitalisation of healthcare services is a hot topic, aiming to enhance efficiency and patient safety across multiple clinical settings. A variety of approaches are employed, ranging from paper-based to costly software solutions. These systems are used to track patients in the medical take or provide handover to weekend teams. Given the growing financial constraints on the NHS, there is considerable interest in cost-effective solutions that improve patient safety and communication between teams.

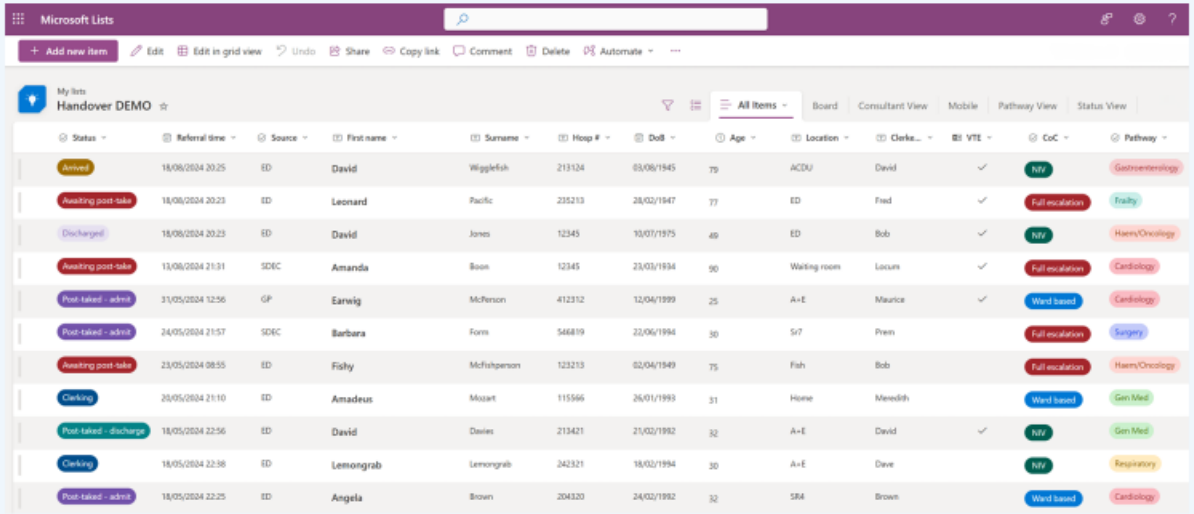



**Fig 1.** Demonstration of Medical Take List with fictitious patient data.

## Methods

We investigated the use of existing Microsoft Office 365 licensing, which offers tools to enable digital collaboration and automation, to aid in patient tracking and flow during medical admissions and weekend handover in an NHS district general hospital (Fig. 2).

The primary products included:-

- SharePoint
- Microsoft Lists
- Microsoft Forms
- Power Automate

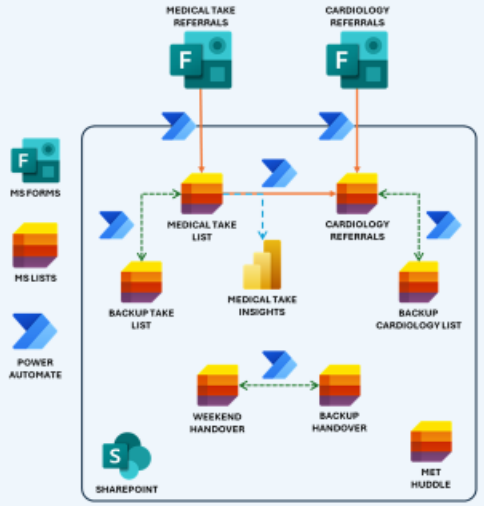



**Fig 2.** Integration between different Microsoft products.

## Results

A successful '*Medical Take List*' (Fig. 1) was implemented and later expanded to include a '*Weekend Handover*' across medical wards, effectively replacing previous paper-based practice.

Building on this success, the system was expanded to support inpatient speciality referrals to Cardiology and a '*MET Safety Huddle*', highlighting its scalability and ease of expansion.

Qualitative feedback indicates positive improvements in usability, efficiency and patient safety (Fig. 3).


**Fig 3.** Heatmap of average Likert scale scores for usability, clinical efficiency and patient safety across aspects of digital system.

## Discussion

The roll-out of this digital system, at minimal to no extra cost, has significant potential, with scope to incorporate additional tools such as Power BI for real-time analysis and auditing.

The project underscores the importance of close collaboration between clinical and IT teams in overcoming day-to-day clinical challenges and improving efficiency, workflow, and patient safety.

Future directions include expanding the system to other clinical areas and additional sites within the health board.

# Case report: Pneumomediastinum in patient using E-Cigarette.

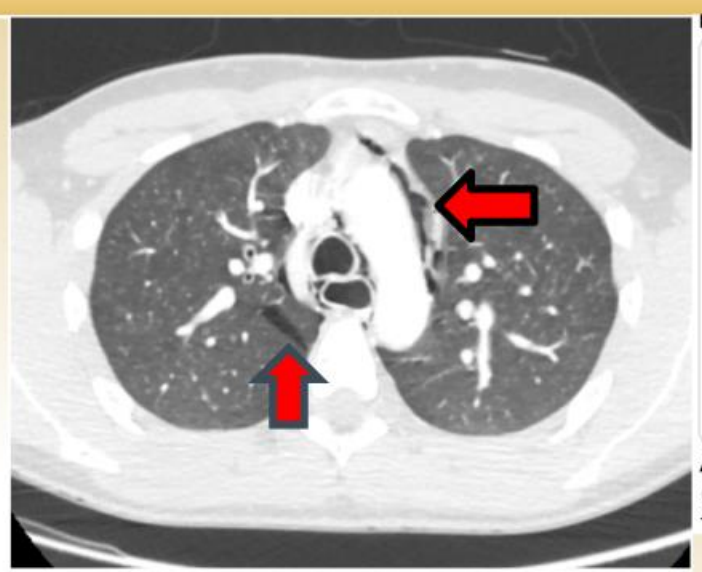
**Dr Moin Mujeeb ST5 Respiratory Medicine** ,Zarak khan, Waheed Shah, Michelle Macdougal

## Introduction

Pneumomediastinum is a rare condition seen most often in patients with asthma and recreational drug abusers. The Macklin effect is the rupture of alveoli secondary to a sharp increase in the intra-alveolar pressure. This subsequently leads to accumulation of free air along the sheath of bronchi and pulmonary vessels. Air travels to the mediastinum because of its low pressure relative to lung parenchyma. We describe a case of pneumomediastinum with a pulmonary tear related to e-cigarette smoking and Valsalva like manoeuvre during coughing.

## Presentation

The patient is a known smoker since the last 3 years and had switched from Cigarettes (having 20 Cigs a week) to E-Vaping in which he was using the disposable pen which would last him two weeks. This was a Disposable Commercial Over the counter Vape pen with tank holding capacity of 2 mls of Vape liquid. This Liquid was 2% Nicotine based and provided 4000 powerful puffs against a 650mAh Battery. The other ingredients in the Vape were: 50% Vegetable Glycerine (VG) and 50% Mixed Polyethylene Glycol (PG), food flavouring 2-isopropyl-N,2,3-trimethy-butyramide, furaneol, and Nicotine benzoate.



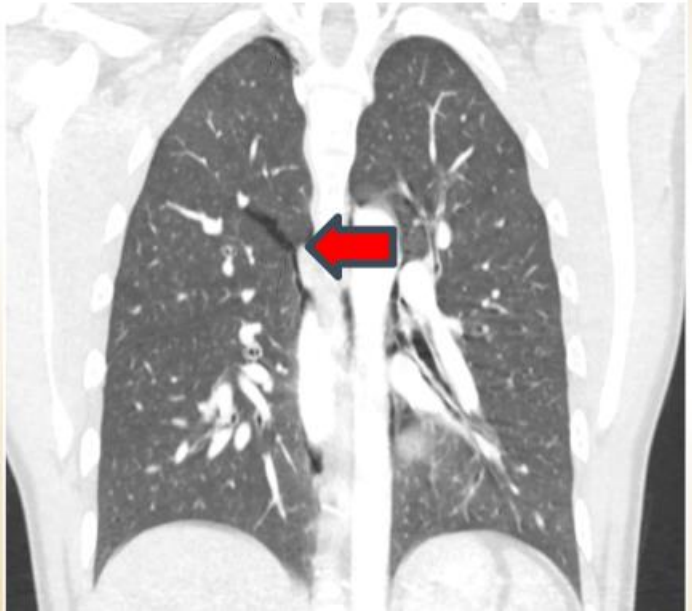
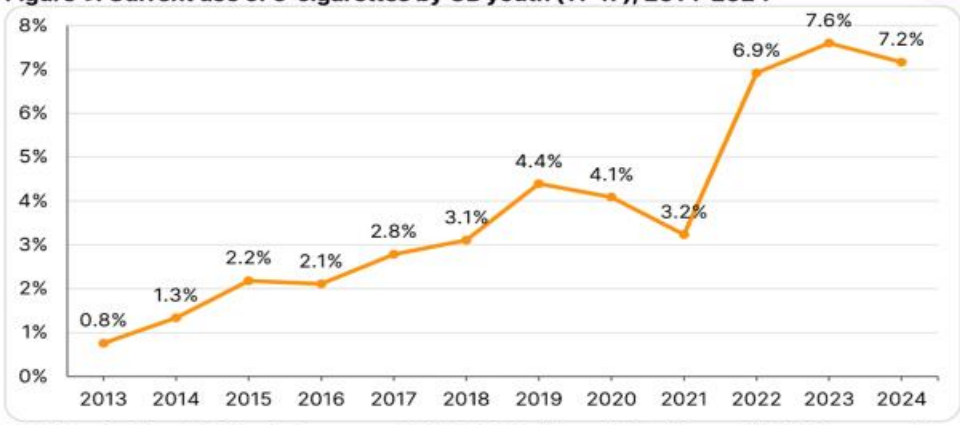


Figure 9. Current use of e-cigarettes by GB youth (11-17), 2014-2024




**ASH Smokefree GB Youth Surveys, 2013-2024.** *Unweighted base: All 11–17-year-olds (2013=1,895, 2014=1,817, 2015=1,834, 2016=1,735, 2017=2,151, 2018=1,807, 2019=1,982, 2020=2,029, 2021=2,109, 2022=2,111, 2023=2,028, 2024=2,574).*

There are a growing number of reports of air leak syndromes associated with vaping. The spectrum of air leak syndromes includes spontaneous Pneumothorax ,spontaneous pneumomediastinum and pneumorachis. Bleb formation occurs independent of inflammatory infiltrates suggesting that vaping directly weakens the pulmonary parenchyma.

## Summary

SPM is a rare presentation of VALI. Treatment of uncomplicated SPM is supportive consists of analgesia, oxygen therapy, rest and avoidance of maneuvers that increase pulmonary pressure. Most patients recover with out sequalae with in a few days and recurrence is rare.

# Dyskinesia-Hyperpyrexia Syndrome (DHS): A Case Report

Co- authors: Morris Simwa, Ahmed Alsobhi, Elizabeth Estabrook, George Pengas. University Hospital of Southampton, UK.

## INTRODUCTION

- DHS is a **rare, life-threatening** complication of Parkinson's disease (PD).
- It has symptomatic overlap with other acute hyperpyrexia syndromes: **Parkinsonism-hyperpyrexia syndrome (PHS), and serotonin syndrome (SS)- Table 1**

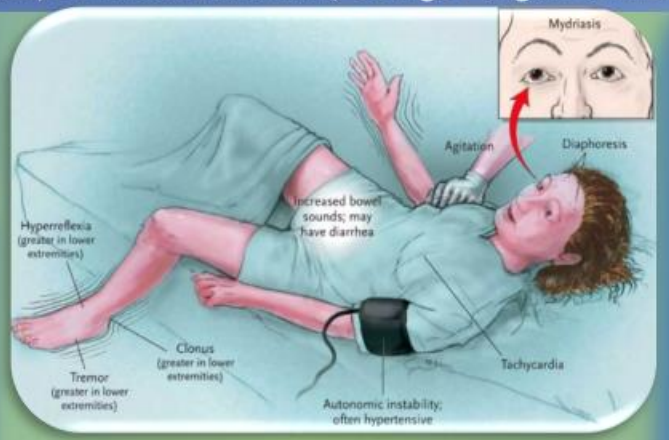
## CASE HISTORY

75 y.o man presented to ED with decreased oral intake.
**PMHx**: Advanced PD, cognitive impairment, depression, and urinary incontinence.
**O/E:** Calm, normal observations, auditory-visual hallucinations, and unremarkable lab investigations. **A collateral history at admission was unobtainable.**
**Drug list**: **Co-careldopa 50/200 mg QDS**, **fluoxetine 20 mg BD**, simvastatin 40 mg OD, aspirin 75 mg OD, **amitriptyline** 10 mg OD, and clonazepam 750 mcg OD.
**Diagnosis:** Advanced PD with neuropsychiatric issues, and increased care needs.
**Management**: Restarted on his medications and offered supportive care.

## HOSPITAL COURSE

Deterioration over the next day and poor oral intake prompted switching levodopa to rotigotine patch- **12mg**.
He developed **agitation, pyrexia (39.2 °C), dyskinesia, rigidity, and confusion.**
**Blood investigations**: Hypernatraemia (**155**), elevated CK **(1778),** AKI **(eGFR-65, Urea 20.8)**, and negative septic screen.
**Differentials:** Infection, DHS, PHS, and SS.
**Plan**: Discontinue fluoxetine, amitriptyline, and rotigotine.

**New collateral history**: **The community pharmacy confirmed poor compliance to PD medications for weeks before admission.**
**Diagnosis**: DHS.
**Treatment:** Reduction of co-careldopa to 12.5/50 mg TDS, IV fluids, and NGT feeding.
**Progression**: Dyskinesia significantly improved within 3 days. Co-careldopa was gradually up-titrated until recovery.




**Clinicians generally focus on ensuring PD medications are not abruptly stopped. In this case, DHS was caused by abruptly (re)starting levodopa.**

**Neuroleptic malignant Syndrome Mx:**

- Manage airway.
- Discontinue implicated medications.
- Manage fluid balance.
- Manage BP.
- Treat rigidity and agitation.
- Normalize temp.
- Initiate preventive measures.

## DISCUSSION

- DHS was first described in 2010.[1]
- **Pathophysiology:** Sudden increase in dopaminergic drive.[2]
- **Main triggers**: Increased dosing of anti-PD medication, infections, dehydration, trauma, and GI dysmotility.[3]
- **Diagnosis**: Clinical features, history, and disease exclusion guide diagnosis.
- **Management**: Reduce anti-parkinsonian medications (avoiding PHS), treat triggers, provide supportive care, and give benzodiazepines. Dantrolene and bromocriptine are also recommended. Multiorgan support may be required for severe cases.[4-5]

### Table 1. Comparison of Acute Hyperpyrexia Syndromes

| DHS: Increased dopaminergic drive. | PHS: Reduced dopaminergic drive (NMS-like syndrome). | SS: Increased serotonergic activity. |
|---|---|---|
| Continuous dyskinesia | Akinesia, dystonia, myoclonus, hyporeflexia | Hyperreflexia, clonus, hypertonia, rigid seizures |
| Confusion, hallucination, stupor | Confusion, stupor, coma | Agitation, confusion, hyperactive delirium |
| Hyperpyrexia (others are rare) | Hyperpyrexia, raised HR/RR, HTN/ labile BP | Hyperpyrexia, mydriasis, tachycardia, labile BP |

## CONCLUSION

- DHS is difficult to diagnose and distinguish from other acute hyperpyrexia syndromes, especially with mild symptoms.
- **A comprehensive drug history and clinical assessment** guide diagnosis.

## REFERENCE

1. Gil-Navarro S, Grandas F. Dyskinesia–hyperpyrexia syndrome: Another Parkinson's disease emergency. Mov Disord. 2010 Nov 15;25(15):2691-2.
2. Wang M, Wang W, Gao Z, et al. dyskinesia-hyperpyrexia syndrome in Parkinson's disease: a systematic review. Clin Auton Res. 2021 Aug;31:529-42.
3. Simonet C, Tolosa E, Camara A, et al. Emergencies and critical issues in Parkinson's disease. Pract Neurol. 2020 Feb 1;20(1):15-25.
4. Wang JY, Huang JF, Zhu SG, et al. Parkinsonism-hyperpyrexia syndrome and dyskinesia-hyperpyrexia syndrome in Parkinson's disease: Two cases and literature review. J Parkinsons Dis. 2022 Jan 1;12(6):1727-35.
5. Du X, Wang X, Geng X. Dyskinesia-hyperpyrexia syndrome in Parkinson's disease triggered by overdose of levodopa—a case report and literature review. Front Neurol. 2024 Jan 5;14:1323717.
6. Wijdicks EF, Ropper AH. Neuroleptic malignant syndrome. New England Journal of Medicine. 2024 Sep 26;391(12):1130-8.

# Prescribing DOACS in a newly diagnosed Atrial Fibrillation – A Quality Improvement Project

Mubashir Rafique, Aslam Sadiq, Sadaf Cheema

NHS Mid Yorkshire Teaching NHS Trust

## Background

The risk of stroke is five times greater for people with AF, and AF contributes to 1 in 5 strokes in the UK. Nice recommends a CHA2DS2VA2Sc score to identify the risk for stroke and an ORBIT score to assess the risk of bleeding. It is recommended that the patient be informed about starting them on DOACS, and a patient information leaflet should be offered to inform them about how to use the medications and the possible side effects or risks involved.

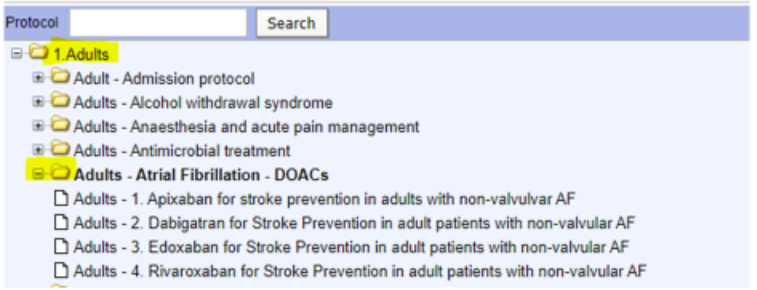
## Method:

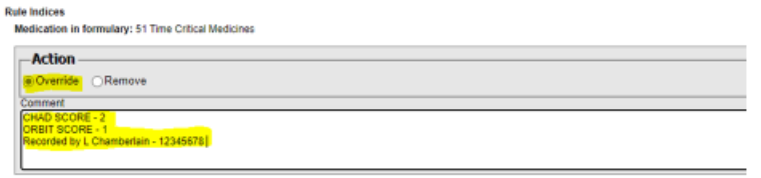
We conducted the audit to assess the compliance with the guidelines mentioned. A retrospective study was conducted, and Only patients with new Atrial fibrillation diagnoses above the age of 18 or under 80 were included in the data collection. The exclusion criteria include long-standing atrial fibrillation, age < 18 and over 80, and atrial flutter. The reviewed parameters included documentation of CHA2DS2VASC and ORBIT score, DOACS prescribed, and whether the patient was involved in decision-making regarding the DOAC prescription, where the patients were given the leaflets to discuss side effects and benefits. Moreover, was there any follow-up with the GP arranged on discharge.

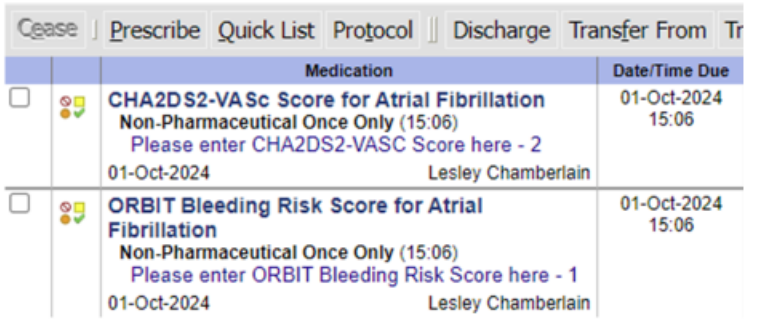
## Results

| Parameters | First Audit Cycle | Second Audit Cycle |
|---|---|---|
| $CHA_2DS_2$-VASc Score Documented | 0 % | 72.4% |
| Documented ORBIT Score | 5% | 14.8% |
| DOACS prescribed | 100% | 100% |
| Discussion with patient about benefits v/s risks | 40% | 55% |
| Patient information leaflets given | 0% | 55.2% |
| GP follow-up on discharge | 0% | 46.4 |

## Actions




## Conclusion:

DOACs can reduce stroke-related co-morbidity, they also pose a risk of life-threatening bleeding. Therefore, initiating DOAC treatment should involve discussion with the patient, reliable score assessment, and thorough documentation.

Liverpool University Hospitals NHS Foundation Trust

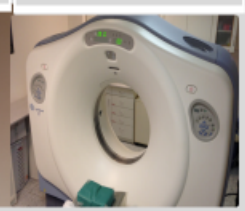
# Re-Audit of appropriateness of Abdominal x-ray referrals From A&E

Author : Dr Muhammad Noor

## Background

| Each AXR uses 0.7msv radiation (35x of CXR) | Will it really change your practice? | Consider other imaging! |
|---|---|---|





## RCR Guidelines

1. Clinical suspicion of obstruction
2. Acute exacerbation of inflammatory bowel disease.
3. Foreign Body
4. Post Gastrografin study
5. Specific circumstance

- Palpable mass
- Constipation
- Acute and chronic pancreatitis

**Target 100%**

## Methodology

Retrospective

Time period: 01/6/2022 – 31/7/2022

Data : ICE, PACS, Pens , EPRO

## Improvement


## Results

| |
|---|
| -Appropriate 73% and inappropriate 27% |
| -Pathology 20% (excluding Faecal loading) |
| -CT Abdomen pelvis 43% and pathology 20% |
| -U/S Abd 7% and Pathology 4% |

## Interventions

- Audit posters posted and sent out.
- Discussion with ED audit leads.
- Reminders in ED handovers.
- Awareness about i-refer , RCR Guidelines , Radiopaedia use.
- Resume Radiology Teaching sessions.

# Complete heart block in young female with thyrotoxicosis results in permanent pacemaker implantation

Royal College of Physicians

Muhammad Mohsin Isar, MaySu Hlaing, Muhammad Sohail Akhtar

NHS United Lincolnshire Hospitals NHS Trust

## Introduction

This case describes a rare association between hyperthyroidism and complete heart block in a young female, leading to the need for a permanent leadless pacemaker. The patient progressed from symptomatic hyperthyroidism to hypothyroidism following radioactive iodine therapy, now requiring lifelong levothyroxine.

## Case Presentation

A 16-year-old girl presented with feeling hot and cold episodes and menstrual irregularities for months. On examination, she had bradycardia (35 beats/min) and blood pressure of 110/75 mmHg. There was no goitre or ocular signs. ECG (Fig.2) showed complete AV block with a ventricular rate of 40 beats/min. A 2-D echocardiogram and blood tests were unremarkable apart from Thyroid function tests (Fig.1), ultrasound revealed a mildly enlarged thyroid with diffuse patches. She was started on Carbimazole by the endocrinologist, and a leadless pacemaker was implanted by Cardiologist. Seven months after completing Carbimazole, she relapsed and underwent radioactive iodine therapy, resulting in subclinical hypothyroidism, for which she now takes levothyroxine.

Diagnosis:

1.Grave's thyrotoxicosis.
2.Complete AV block requiring leadless pacemaker.
3.Subclinical hypothyroidism post-radioactive iodine therapy.

| | |
|---|---|
| TSH | <0.01 ▼ |
| Free T4 | 56.9 ▲ |
| Free T3 | 23.43 ▲ |
| Thyrotropin receptor antibody. | |
| Thyroid peroxidase Ab (TPO) | 158 ▲ |
| Thyrotropin receptor antibody. | 2.91 ▲ |

Figure 1

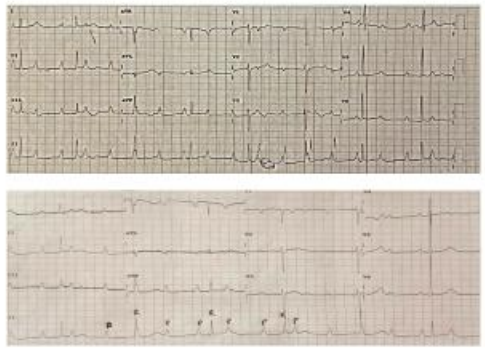


Figure 2

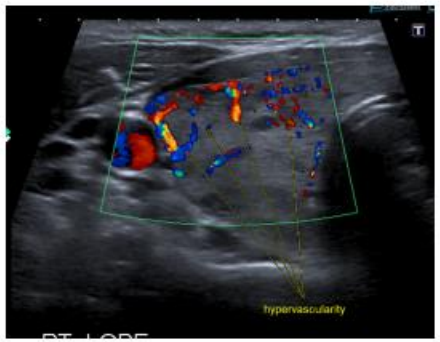



Figure 3

## Discussion and Conclusion:

This case highlights the importance of cardiac monitoring in hyperthyroid patients, even without prior cardiac history, and emphasizes a multidisciplinary approach for the management. The need to anticipate hypothyroidism post-radioactive iodine therapy is crucial. Leadless pacemakers offer a safer alternative with fewer complications, and while guidelines for treating heart block and hyperthyroidism exist, specific recommendations for hyperthyroid-induced heart block are lacking, underscoring the need for further research.

## References

1.Sattar Y, Ullah W, Roomi S, Rauf H, Mukhtar M, Ahmad A, et al. Complications of leadless vs conventional (lead) artificial pacemakers – a retrospective review. Journal of Community Hospital Internal Medicine Perspectives. 2020 Jul 3;10(4):328–33.

2. British Thyroid Foundation. Radioactive iodine (RAI) treatment [Internet]. [updated 2023; cited 2024 Sep 2]. Available from: https://www.btf-thyroid.org/radioactive-iodine-rai-treatment.

# Current Clinical Care and Future Improvement in the management of Patients with Eosinophilic Esophagitis at NHS District General Hospital

Khan A[1], Parrock S[1], Amanuel H[1], Dashora A[2], Oshinusi T[1], Kitchen P[1], Wahab A[1], Ghosh N[1], Sipos G[1], Saleh M[1], Hossain M[1], Ayyub A[1], Naqvi S[1], Arif A[1], Woghiren A[1], Khan I[1], Verma M[2], Zhang NZ[1].

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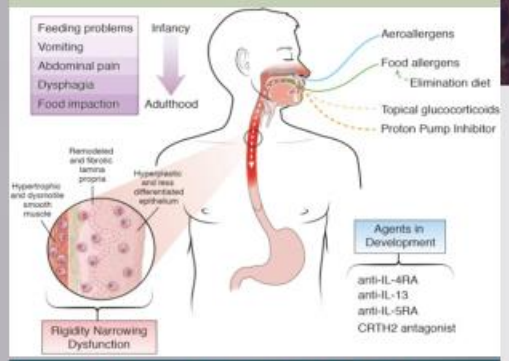
[2] Department of Histopathology, Maidstone and Tunbridge Wells NHS Foundation Trust, Kent, United Kingdom.

Dr Muhammad Adil Zaka Khan (IMT3)

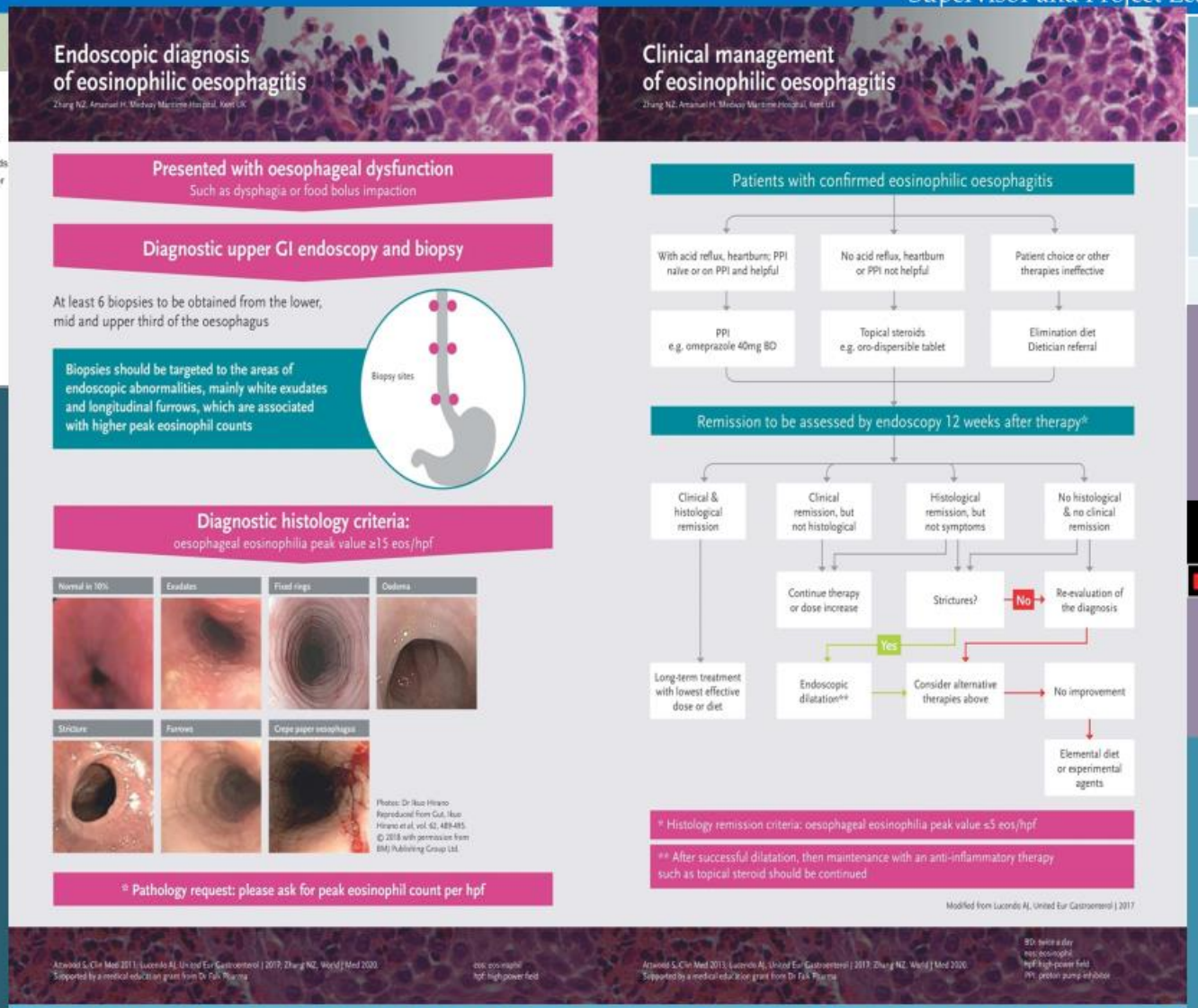
Supervisor and Project Lead: Dr Norman Zhang (Consultant Gastroenterologist)

## Pathophysiology of EoE




## FINDINGS OF STAGE 1 AUDIT

- 74.1% were treated on anti-acid medication such as PPI,
- 59.3% were prescribed or advised to have swallowed inhaler steroids therapy. (37% were treated Fluticasone inhalers & 3.7% was treated with Budesonide oral viscous preparation. 18.5% were referred back to their GP)
- On 40.7% patients there is no clear documentation to indicate steroid therapy had been initiated
- 11.1% had been referred for dietetic therapy
- Following treatment only 41% of patients underwent repeat endoscopy. Biopsies were taken in 64%.




## ALGORITHMS DEVELOPED TO AID DIAGNOSIS AND MANAGEMENT OF EOE AFTER THE 1st AUDIT (Jan 2015 – Aug 2017)

| No. of Biopsies Taken | 1st Audit | 2nd Audit |
|---|---|---|
| 6 or more | 11% | 13% |
| 4 or more | 26% | 35% |
| Less than 4 | 45% | 13% |
| Multiple | 18% | 39% |

- The use of algorithms raised awareness to look for endoscopic changes and take multiple biopsies to diagnose EOE.
- Less than 4 biopsies decreased dramatically and at least 4 or more biopsies were taken as seen in the 2nd Audit.

| | less than 15 | 15 to 25 | 25 to 30 | more than 30 | unknown |
|---|---|---|---|---|---|
| case number/24 | 1 | 8 | 4 | 5 | 6 |

Better numbers of eosins count in 2nd Audit noted as Eosinophil count was more meticulously checked by histopathology department due to raised awareness following algorithms generated after 1st Audit.

## CONCLUSION

Using the algorithms, clearly helped diagnosing a higher percentage of patients with EOE (7% vs 3%) over the same period of time.

More awareness about association of atopy and food allergies with EOE

More meticulous PMHx record keeping

More reflux oesophagitis noted then last audit due to better awareness amongst endoscopists to look for features as explained in the algorithm

# Title- Biopsy Negative Inflammatory Bowel Disease: Exploring the Diagnostic Challenges and Clinical Implications

Dr Muhammad Awais Anwar, Dr Ritika Bhatia, Dr Kushagra Mathur

## INTRODUCTION

Inflammatory Bowel Disease is a chronic, relapsing condition predominantly affecting the gastrointestinal tract, with Crohn's Disease and Ulcerative Colitis being the most prevalent subtypes. This disorder is characterized by an exaggerated immune response to the gut microbiota in genetically predisposed individuals, leading to persistent inflammatory symptoms. The pathogenesis of IBD involves a complex interplay between genetic susceptibility, environmental factors, alterations in gut microbial composition, and dysregulation of the immune system, ultimately resulting in mucosal damage, ulceration, complications, and often systemic manifestations.

The global prevalence of IBD is increasing, particularly in Western nations. In the United Kingdom, the prevalence of IBD is approximately 500 per 100,000 population, with incidence rates of 10-16 per 100,000 person-years for Crohn's Disease and 6-15 per 100,000 person-years for Ulcerative Colitis. This growing public health burden underscores the need for precise diagnosis and the development of effective treatment strategies.

Typically, IBD presents with chronic gastrointestinal symptoms, and the diagnostic approach involves clinical evaluation, laboratory tests, endoscopic assessment, and histopathological examination. However, a subset of patients exhibit clinical features suggestive of IBD but lack the characteristic histological findings, a condition referred to as "biopsy-negative IBD" or Inflammatory Bowel Disease Unclassified. This rare entity complicates the diagnostic process and may lead to delays in appropriate management. This case report discusses such a scenario, highlighting the importance of recognizing this diagnostic challenge.

## CASE REPORT

We present the case of a 39-year-old gentleman who presented to the A&E with complaints of 40 episodes of bloody diarrhea over the 4 days prior to admission, accompanied by abdominal pain, decreased appetite, and easy fatigability. He had a past medical history of hypertension and a family history of bronchial asthma, hypothyroidism, and ulcerative colitis in his mother. He had been admitted with similar complaints 3 months earlier.

A CT scan of the abdomen and pelvis with contrast showed no acute abnormalities (**Figure 1**), and a sigmoidoscopy with biopsy was negative (**Figure 2**). A repeat biopsy suggested proctitis upon gross visualization but was negative for any inflammatory changes (**Figure 3**). Despite these findings, he was started on IV hydrocortisone and the oral 5-ASA agent Mesalazine, with adequate hydration and supportive care. He was discharged with a diagnosis of biopsy-negative ulcerative colitis, based on high clinical suspicion and his family history.

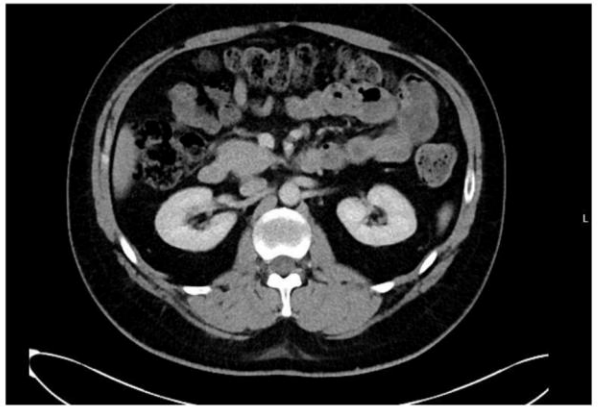


**Figure 1**

## DISCUSSION

While colonic biopsy has a sensitivity of more than 96% for diagnosing IBD and distinguishing between its types, negative or inconclusive results can complicate early diagnosis. [4] Often, conditions that mimic IBD can also be misdiagnosed as IBS, including infections such as tuberculosis, Yersinia, and Salmonella, as well as non-infectious conditions like vasculitis, sarcoidosis, or immunodeficiencies like CVID. In the case discussed above, all non-infectious mimics, as well as some infectious ones, were tested for.

A large cohort study conducted in Sweden, with a sample size of more than 200,000 siblings, concluded that the risk of developing IBD persisted even after 30 years of a normal biopsy. Additionally, a 2014 study by Tom et al. found that approximately 5% of all IBD cases are classified as IBDU and remain histologically undiagnosed.

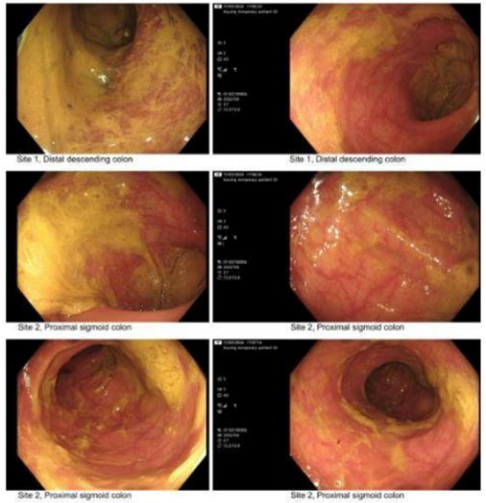



**Figure 2**

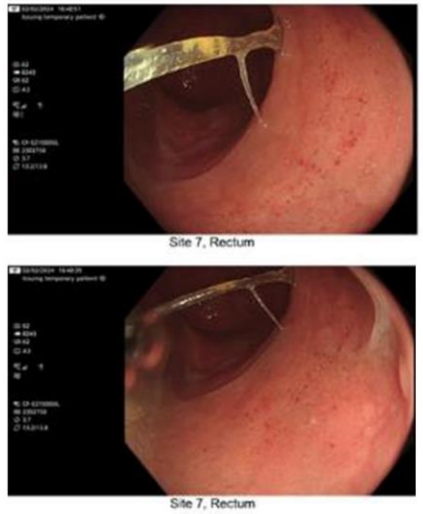



**Figure 3**

## CONCLUSION

There is very little data on the prevalence, incidence, or management of indeterminate or biopsy-negative IBD due to the small number of reported cases. More studies are required to understand the exact incidence of such cases, and guidelines are needed for their treatment.

## REFERENCES

1. Zhang YZ, Li YY. Inflammatory bowel disease: pathogenesis. World J Gastroenterol. 2022;28:230-8.
2. Chams S, Badran R, Sayegh SE, et al. Inflammatory bowel disease: looking beyond the tract. Int J Immunopathol Pharmacol. 2019;33:205873841986656. doi:10.1177/205873841986656..
3. DeRoche TC, Xiao SY, Liu X. Histological evaluation in ulcerative colitis. Gastroenterol Rep (Oxf). 2014;2:178-92.

# Clinical audit on screening for diabetes and dyslipidemia prior to discharge in patients with ST-Elevation Myocardial Infarction

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## INTRODUCTION

Risk factor control in patients with ST-elevation Myocardial Infarction (STEMI) is an essential part of patient care. The prevalence of diabetes and hyperlipidemia in Pakistan is around 26.7% and 39.7% respectively. [1-3]As per the "2019 European Society of Cardiology (ESC) guidelines on diabetes, prediabetes, and cardiovascular disease", screening for type 2 diabetes mellitus (T2DM) in patients with cardiovascular disease with HBA1C or fasting plasma glucose has been given a class IA recommendation. This document also advises maintaining HbA1C levels in known diabetics at less than or equal to 7%.[4] Similarly, the 2017 ESC STEMI guidelines, recommend lipid profile for all STEMI patients as soon as possible after presentation (Class IA).[5] Keeping in mind the prevalence of diabetes and dyslipidemia in Pakistan, we felt the need to assess our current practices in screening and testing patients with STEMI for diabetes and dyslipidemia

## AIMS AND OBJECTIVES

**Aims:**

The aim of this audit was to ensure that all patients with STEMI who undergo primary or rescue percutaneous coronary intervention (PCI) get screened for diabetes and dyslipidemia. Additionally, known diabetics should have their HbA1C levels assessed to ensure adequate control. This would help in point of care management as well as in monitoring treatment response during follow-up visits.

**Objectives:**

1) To evaluate current practices on diabetes and dyslipidemia screening prior to discharge.
2) To evaluate current practices on assessing diabetic control in known diabetics.
3) To make necessary changes in order to assure screening of all patients.
4) To re-assess the practices after implementing the changes.

## METHODS

The study was conducted in the Cardiology department of Peshawar Institute of Cardiology, Peshawar, Pakistan. We analyzed the HbA1C and lipid profile sent for all patients presenting to the accident and emergency department with STEMI over two months. This was followed by intervention through lectures, posters, in-person visits, and regular reminders over the official group regarding the importance of testing and screening in all STEMI patients. The intervention phase continued for 12 months followed by a two-month re-audit. Patients with unknown diabetes status were classified as newly diagnosed diabetes, pre-diabetes, or no-diabetes. Patients with pre-existing diabetes were classified as well-controlled or poorly controlled diabetics. American diabetes association's cut-offs for HbA1C were used to interpret the HbA1C results.[6]

## RESULTS

In the first cycle, we enrolled 186 patients with STEMI. Demographic data for both cycles is presented in Table 1. Lipid profile was done for 11/186 (5.91%) patients while HbA1C was done for 18/186 patients (9.6%). Only 11/41 (26.8%) of the patients who were known diabetics underwent HbA1C before discharge. In the second cycle, we enrolled 212 patients with STEMI. HbA1C was done for 90 patients (42.45%) whereas lipid profile was done for 95 (44.8%). The breakdown of HbA1C testing is shown in Table 2. Chi-square test was used to see if the two cycles were statistically different. The Chi-square value ($x^2$) for HbA1c testing was 0.245, df 1, and p value 0.621 whereas the $x^2$ value for the lipid profile sent was 0.305, df 1, and p value 0.525. This demonstrates that there was a statistically significant difference between both cycles.

## TABLES

**Table 1:**

| Population Demographics | | |
|---|---|---|
| | First Cycle | Second Cycle |
| Age- years | 58±11.11 | 60.33 ±12.35 |
| Male sex- no. (%) | 128 (68.8) | 161 (75.9) |
| Female sex- no. (%) | 58 (31.2) | 51 (24.1) |
| Diabetes- no. (%) | 41 (22.04) | 74 (34.9) |
| Hypertension- no. (%) | 88(47.3) | 112 (52.8) |

**Table 2:**

| Breakdown of screening in Patients with unknown diabetes status | | |
|---|---|---|
| **Diabetic status** | ***n*** | **Percent** |
| Newly Diagnosed | 10 | 7.25 |
| Prediabetic | 4 | 2.9 |
| No-Diabetes | 42 | 30.43 |
| Not screened | 82 | 59.42 |
| **Total** | **138** | **100** |
| **Break down of screening in Patients with Pre-existing Diabetes** | | |
| **Diabetic status** | ***n*** | **Percent** |
| Poorly controlled | 30 | 14.2 |
| Well controlled | 3 | 1.4 |
| Not screened | 41 | 55.4 |
| **Total** | **74** | **100.0** |

**Table 3:**

| HbA1C and Lipid Profile rates prior to discharge | | | |
|---|---|---|---|
| | | First Cycle | Second Cycle |
| | | *n* (%) | *n* (%) |
| **HbA1c Sent?** | Yes | 18(9.67) | 90 (42.45) |
| | No | 169 (90.33) | 122 (57.55) |
| **Lipid Profile Sent?** | Yes | 11(5.91) | 95 (44.8) |
| | No | 175 (94.09) | 117 (55.2) |

## DISCUSSION

Comparing both arms of the audit cycle we observed that although the audit did not meet its primary objective of hundred percent compliance, it was able to achieve a significant improvement compared to the baseline. HbA1C rates before discharge went up by 342.7% whereas lipid profile rates went up by 659.3 %.

The rates of newly diagnosed diabetes and prediabetes in patients with unknown diabetes status was 14/56 (25 %) which is in line with the current data on prevalence of diabetes in Pakistan. Moreover, 30/33 (90.9%) of diabetics tested with HbA1C had poorly controlled diabetes i.e HbA1C >7 %. The mean LDL levels of this population were also above the recommended targets of ESC and AHA guidelines. This data reinforces the idea of screening and testing all STEMI patients for diabetes and hyperlipidemia. This will enable timely treatment of these risk factors and will help prevent future cardiovascular events in these high risk patients.

## CONCLUSION

All patients with STEMI should be tested for diabetes and hyperlipidemia during their hospital stay. Regular audits can ensure compliance with international guidelines.

## REFERENCES

1) Aamir AH, Ul-Haq Z, Mahar SA, Qureshi FM, Ahmad I, Jawa A, Sheikh A, Raza A, Fazid S, Jadoon Z, Ishtiaq O. Diabetes Prevalence Survey of Pakistan (DPS-PAK): prevalence of type 2 diabetes mellitus and prediabetes using HbA1c: a population-based survey from Pakistan. BMJ open. 2019 Feb 1;9(2):e025300.
2) International Diabetes Federation. Pakistan. Accessed June 26, 2024. https://idf.org/our-network/regions-and-members/middle-east-and-north-africa/members/pakistan/
3) Basit A, Sabir S, Riaz M, Fawwad A, NDSP 05. Prevalence and pattern of dyslipidemia in urban and rural areas of Pakistan; a sub analysis from second National Diabetes Survey of Pakistan (NDSP) 2016–2017. Journal of Diabetes & Metabolic Disorders. 2020 Dec;19:1215-25.
4) Cosentino F, Grant PJ, Aboyans V, Bailey CJ, Ceriello A, Delgado V, Federici M, Filippatos G, Grobbee DE, Hansen TB, Huikuri HV, Johansson I, Jüni P, Lettino M, Marx N, Mellbin LG, Östgren CJ, Rocca B, Roffi M, Sattar N, Seferović PM, Sousa-Uva M, Valensi P, Wheeler DC, ESC Scientific Document Group. 2019 ESC Guidelines on diabetes, pre-diabetes, and cardiovascular diseases developed in collaboration with the EASD. Eur Heart J. 2020 Jan 7;41(2):255-323. doi: 10.1093/eurheartj/ehz486. Erratum in: Eur Heart J. 2020 Dec 1;41(45):4317. doi: 10.1093/eurheartj/ehz828. PMID: 31497854.
5) Ibanez B, James S, Agewall S, Antunes MJ, Bucciarelli-Ducci C, Bueno H, Caforio ALP, Crea F, Goudevenos JA, Halvorsen S, Hindricks G, Kastrati A, Lenzen MJ, Prescott E, Roffi M, Valgimigli M, Varenhorst C, Vranckx P, Widimský P; ESC Scientific Document Group. 2017 ESC Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation: The Task Force for the management of acute myocardial infarction in patients presenting with ST-segment elevation of the European Society of Cardiology (ESC). Eur Heart J. 2018 Jan 7;39(2):119-177. doi: 10.1093/eurheartj/ehx393. PMID: 28886621.
6) American Diabetes Association. 2. Classification and diagnosis of diabetes: Standards of Medical Care in Diabetes-2019. Diabetes Care 2019;42:S13S28.

# Shaping the Heartbeat: Innovating ECG Education for Year 3 Medical Students

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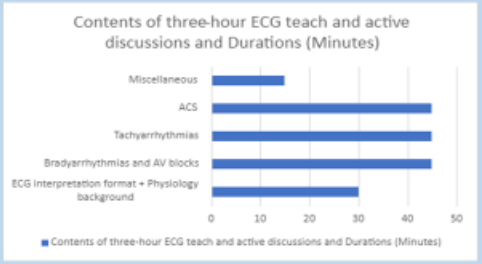
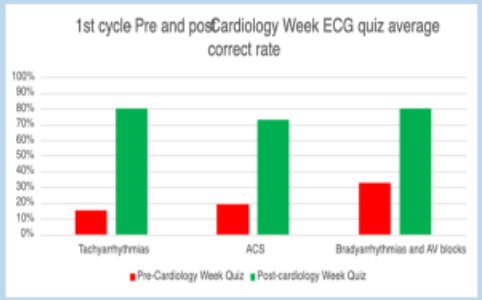
## Background

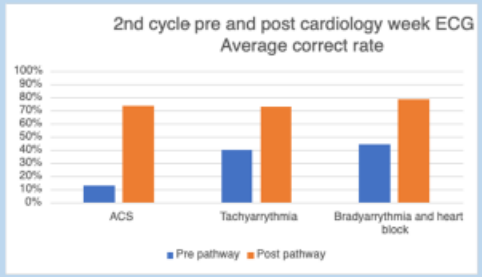
Electrocardiogram (ECG) interpretation is an essential skill for medical students, particularly during their clinical entry year. The limited time during the Cardiology rotation and the need for competency in various cardiology skills necessitate an efficient ECG teaching method.

## Methods

Two Plan-Do-Study-Act (PDSA) cycles of different ECG teaching methods were implemented. From 15.4.24 to 17.5.24, five groups of third year medical students received small group ECG tutorials focusing on foundational interpretation, followed by active discussions of clinical case-based ECG templates. From 20.5.24 to 17.6.24, an additional five groups participated in the same interactive ECG tutorials, supplemented with ECG games and ECG ward rounds. The effectiveness of the teaching methods was measured using pre- and post-rotation questionnaires assessing students' confidence and interpretation accuracy. Data from the two cycles were compared.




## Objectives

This project aims to identify an effective and time-efficient ECG education method for third-year medical students during their one-week Cardiology rotation.

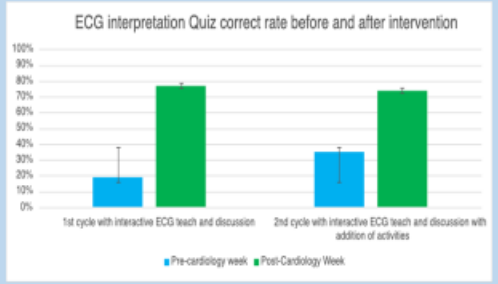
## Results

In the first group, 20 of 21 students were compliant with the activities, whereas in the second group, only 12 out of 20 students were compliant with all activities. The first group's correct response rate improved from 19% pre-rotation to 77% post-rotation. Similarly, the second group's correct response rate improved from 35% to 74%. Confidence in ECG interpretation increased from an average of 25% pre-rotation to 74.5% post-rotation in the first group, and from 28% to 72% in the second group.

Possible reasons for the limited improvement could include varying levels of individual interest, timing near the end of the term, pre-existing knowledge from previous rotations and exams, poor compliance, and information and activity overload.

## Conclusion

Small group ECG tutorials focusing on foundational interpretation, followed by discussions of clinical case-based templates, effectively improved students' confidence and interpretation accuracy. The addition of ECG games and teaching fellow conducted ECG ward rounds did not enhance these outcomes and resulted in 40% non-compliance with the extra activities. Possible reasons for the reduced benefit include varied individual interest, timing near the end of term, exam-related fatigue, low compliance, and the volume of new information and activities.Our interactive ECG teaching method using case-based templates was as effective as the added interventions. Therefore, removing these additional activities could provide students more time to focus on other essential cardiology skills.



# Tackling the 52-week wait: Quality Improvement Project to improve compliance to GIRFT's Diabetes Discharge Pathway

Nadia Chaudhury, Mayurika Chakraborty, Fathima Noushad, Timothy Robbins, Ranganatha Rao
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NHS University Hospitals Coventry and Warwickshire NHS Trust

## INTRODUCTION

Diabetes is a leading cause of morbidity and mortality. ~5.6 million people in the UK currently live with diabetes[1], with estimated costs of £10 billion a year (10% of the NHS budget)[1]. Getting It Right First Time (GIRFT) Diabetes is a national programme working with NHS England, designed to improvement treatment and to reduce 52-week waiting times[2]. Studies have shown patients with diabetes have increased rate of hospital encounters as compared to those without (24.3% vs 17.7%, $p<0.001$)[3]. It is thus vital to educate hospitalized patients with diabetes prior to discharge, to reduce readmissions and minimize complications requiring outpatient follow-up, thus tackling the 52-week wait.

## METHODS

We conducted a Quality Improvement Project (QIP) to improve education given to patients with diabetes prior to discharge (Table 1)

**Table 1: QUIP details**

| | |
|---|---|
| **Population** | Patients with diabetes discharged from Diabetes and Endocrinology ward at University Hospitals Coventry and Warwickshire (UHCW) |
| **Timeline** | March 2024 – ongoing |
| **Primary Outcome** | Distribution of Diabetes UK's and ABCD's 'Your Safe Discharge from Hospital' Patient Information Leaflet |
| **Secondary Outcomes** | Information on the following given on discharge summary:<br>- Medication changes - GP/ Specialist follow-up<br>- BM target - Ketone monitoring - Foot care advice<br>- DVLA - Hypoglycaemia advice - Sick day rules |

## QUIP CYCLES

Each intervention was conducted for one month. Our QUIP cycles were as follows (Table 1):

**Table 1.** QUIP cycles

| QUIP cycle | Discharge Month (2024) | Intervention |
|---|---|---|
| Baseline | March | No intervention |
| Cycle 1 | May | 30 minute oral presentation given at beginning of month |
| Cycle 2 | June | Flyers distributed around ward |
| Cycle 3 | September | Weekly email reminders |

## RESULTS

Figure 1 summarises primary and secondary outcomes achieved for each QUIP cycle. Classification of secondary outcomes is as follows:

- Satisfactory safety netting advice : ≥2 secondary outcomes
- Some attempt at safety netting advice : 1 secondary outcome

Figure 2 details further information on specific discharge advice given.

As shown, QUIP cycle 3 demonstrates most promise in achieving both primary and secondary outcomes.

- 10.71% of patients were given discharge patient information leaflet (primary outcome) in cycle 3, vs 0% in cycle 1 and 2 (Figure 1).
- Improvements across majority of secondary outcomes were seen in cycle 3, as compared to previous cycles (Figure 2).

This highlights the importance of frequent reminders to junior doctors to improve discharge advice and education given to patients.

**FIGURE 1.** Primary and secondary outcomes met, according to QUIP cycle

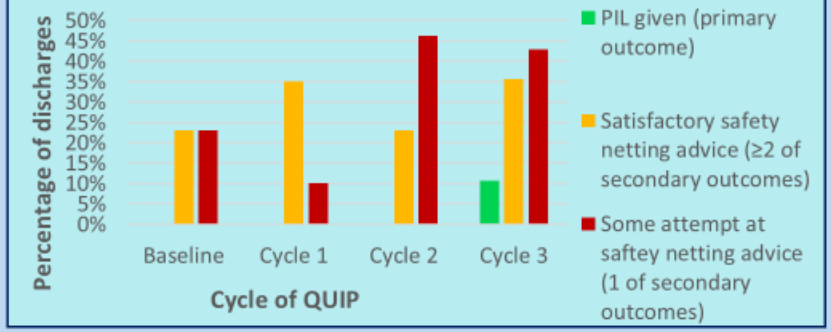
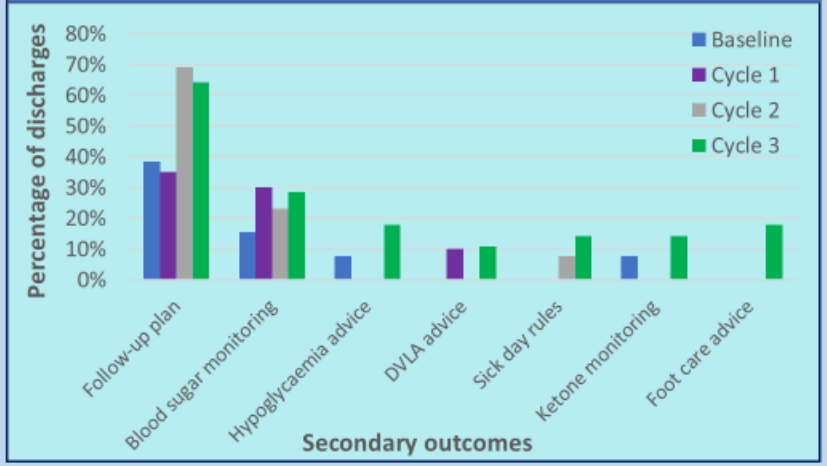



**FIGURE 2.** Safety netting advice written on discharge summaries, according to QUIP cycle




## CONCLUSION AND LEARNING POINTS

- Diabetes results in significant morbidity and mortality. Good diabetes education is necessary for patients prior to discharge.
- Frequent reminders to junior doctors working on Diabetes wards are necessary to improve quality of education given to patients.

## REFERENCES

1. Diabetes UK. https://www.diabetes.org.uk
2. Getting It Right First Time. https://gettingitrightfirsttime.co.uk/medical_specialties/diabetes-workstream/
3. S. Ostling, J. Wyckoff, S. L. Ciarkowski et al. The relationship between diabetes mellitus and 30-day readmission rates. Clinical Diabetes and Endocrinology. 3, 3 (2017).

Leeds Liver Unit

MED+

# A very atypical case of acute liver injury in pregnancy

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## Introduction

A **29 year old**, para 3 woman was admitted following premature (gestation: 36 +2/40) delivery at home with a 48 hour history of jaundice and oral mucosal bleeding. On examination she was **jaundiced** and had evidence of **large volume ascites**. On admission she was **hypertensive at 164/100mmHg** and initially treated for presumed pre eclampsia.

## Case description

- Bloods on admission demonstrated an acute liver injury with coagulopathy and acute kidney injury ( fig.1). She was anaemic and a blood film showed evidence of haemolysis.
- A non-invasive liver screen including acute viral screen was normal. No history of recent drug ingestion or risk factors for liver disease. Urine PCR was below the nephrotic range and ECHO showed normal LVEF.
- Cross sectional imaging demonstrated normal liver architecture with patent hepatic veins **excluding Budd Chiari**. There was significant ascites with a clear post partum uterus (fig. 2).
- Patient was transferred to our tertiary liver centre with a working diagnosis of **acute fatty liver of pregnancy.**
- However ammonia and urate tests were normal and her condition had not improved one week post partum.

**The patient became pyrexial after transfer prompting a septic screen including malaria testing.**

*NB. The patient reported no travel since leaving **Sudan** to settle in the UK **8 years ago**.*

- Concurrently, transjugular liver biopsy had been arranged and demonstrated cholestasis with canalicular bile ducts and lobular disarray. There were no features of outflow obstruction or pregnancy related liver disease (fig. 3).
- **Malaria screen was positive** by loop-mediated isothermal amplification but negative by microscopy. This was felt to be a false positive, however repeat screen demonstrated a second positive and identification of a **singular malaria ring form. PCR confirmed Plasmodium Malariae.**
- Treatment with **IV artesunate and diuretics** was commenced with rapid improvement seen. The patient was discharged home on day 16 post-partum having completed malaria treatment. On review in outpatients 4 weeks later, the patient had **normal LFTs with complete resolution of ascites.**

## Investigation results

Fig 1

| Hb (g/L) | Platelets ($\times 10^9$/L) | INR | Creatinine (µmol/L) | eGFR | ALT (iu/L) | ALP (iu/L) | Bilirubin (µmol/L) | Albumin (g/L) |
|---|---|---|---|---|---|---|---|---|
| 95 | 370 | 1.9 | 119 | 48 | 165 | 356 | 140 | 14 |

Fig 2

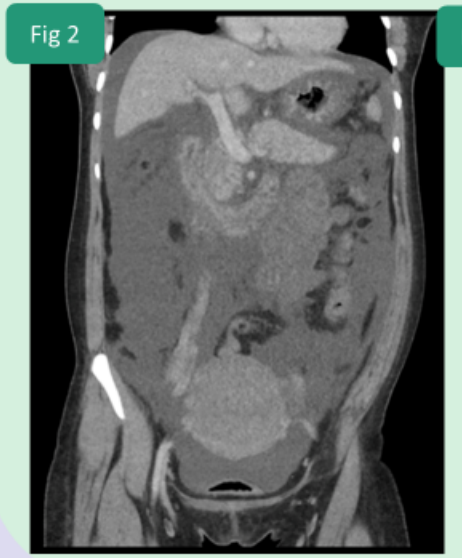
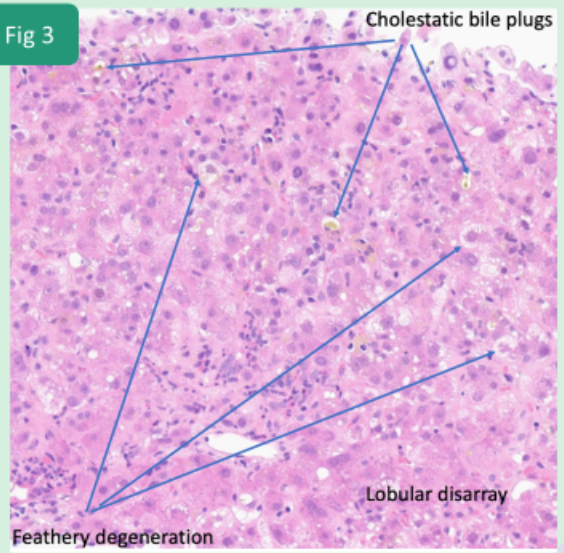


Fig 3




## Discussion

- This case highlights the importance of considering malaria relapse in patients originating from high risk areas even in the absence of recent travel.
- There is minimal data that P. malariae exhibits a dormant hypnozoite stage that can relapse. The low parasitaemia level appears incompatible with such a profound hepatic insult, however it is recognised that P. malariae can cause asymptomatic infections that can last for decades with **very low parasite levels.**[1] PCR to identify the species in this case was crucial.
- Recrudescence has been documented in cases of **immunosuppression** such as splenectomy[2] and immunosuppressive therapies.[3] We postulate that the relative immune changes of pregnancy here may have induced the recurrence in this patient.

1. Hommel B, Galloula A, Simon A, Buffet P. Hyposplenism revealed by Plasmodium malariae infection. Malaria Journal [Internet]. 2013 Aug 2;12(1)
2. Tsuchida H, Isao Ebisawa, Yamaguchi K, Yamamoto S. Quartan Malaria Following Splenectomy 36 Years after Infection *. American Journal of Tropical Medicine and Hygiene. 1982 Jan 1;31(1):163–5.
3. Vinetz JM, Li J, McCutchan TF, Kaslow DC. Plasmodium malariae infection in an Asymptomatic 74-Year-Old Greek Woman with Splenomegaly. New England Journal of Medicine. 1998 Feb 5;338(6):367–71.

# Minimising Unnecessary Blood Orders: A Cost Saving QIP in Respiratory Departments at Leeds University Hospital

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The Leeds Teaching Hospitals NHS Trust

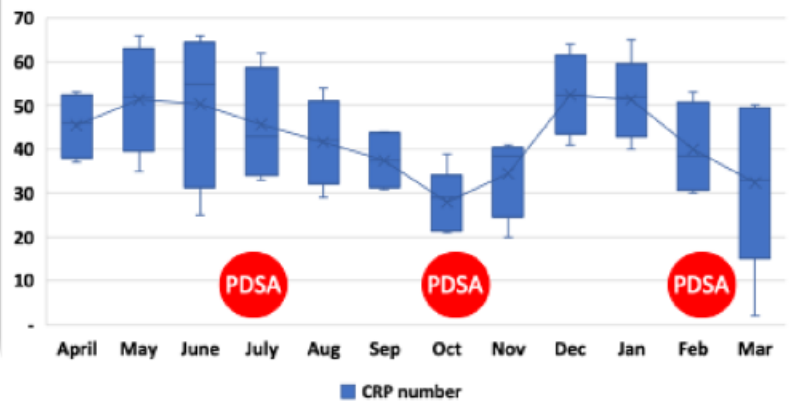
## Introduction

Blood test investigations are central to health care services, contributing to 70-80% of the medical decisions affecting diagnoses and patient care. Nearly 800 million pathology tests are performed annually.[1] According to the Carter of Coles Review, pathology services in England cost about £2-3 billion per annum. It is estimated that about 25% are unnecessary repeat tests having no impact on patient care.[2]

## Aims

To study the costs of repeated blood tests and implement interventions with the aim of reducing unnecessary blood investigations to the minimum clinically indicated, reducing the inappropriate repetition of costly specialist tests and saving financial resources.

**Figure 4 :Mean Volume of Repeated CRP tests per week 23-24**




## Materials and methods

This project included both retrospective and prospective studies. The retrospective analysis of the repeated blood test costs from 2022-2023 focused on routine tests (high frequency, low cost) and specialist tests (low frequency, high cost), with data sourced from the electronic systems. A series of interventions including presentations and posters were implemented in 2023-2024 while the data were monitored during the same period.

**Figure 1: Cost of Repeated routine tests**

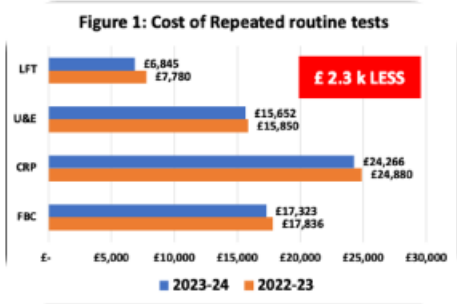



**Figure 2: Cost of Repeated specialist tests**

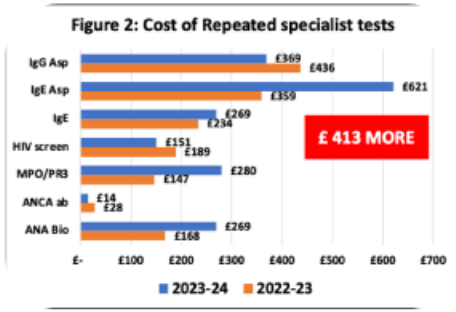
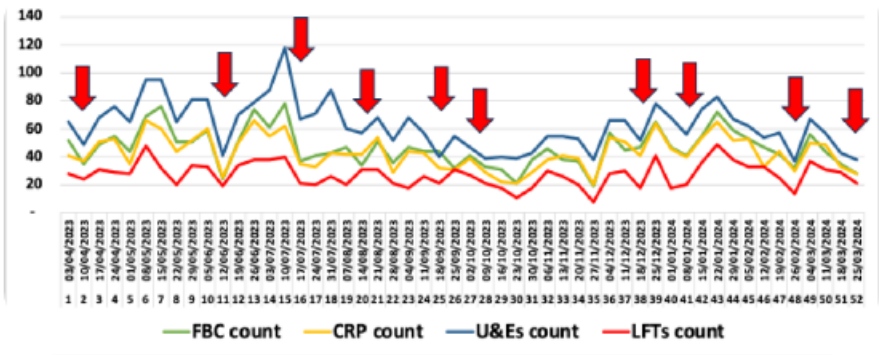



**Figure 3: Number of repeated tests during JD Strikes 2023-2024**




## Results and discussion

- The total approximate cost of the blood tests in 2022/23 was £213,000, with repeated blood tests accounting for about 31% (£68,000) of this amount.
- Although the specific indications for each repeated test were not studied, it was observed that CRP tests were often repeated inappropriately, potentially without effecting patient management. - The mean CRP volume reduced after intervention but increased again with a new batch of junior doctors. (Fig 4)
- Duplicate requests for specialist tests frequently occurred, particularly during ward transfers when it was unclear if the necessary blood samples had already been taken. For instance, 3 HIV tests were taken in 3 patients over 3 days, and 6 patients had duplicate vasculitis screenings on the same day.
- The junior doctors' strikes led to a noticeable reduction in the number of routine blood test requests during the strike periods. (Fig 3)
- In 2023-2024, the cost of repeated routine tests decreased by £2,300 compared to the previous year, while the cost of specialist tests increased by £400. (Fig 1&2)

## Conclusion

This project highlighted the significant financial impact of unnecessary repeated blood tests. Implementation of routine and repeated educational interventions and promoting best practices resulted in a reduction of the cost of routine blood tests. However, ongoing efforts are needed to address the rise in specialist test costs and ensure sustainable improvements in test ordering practices.

Scan for poster

SCAN ME

**References**

[1] Royal College of Pathologist. *National Pathology Programme Digital First: Clinical Transformation through Pathology Innovation.* https://www.england.nhs.uk/wp-content/uploads/2014/02/pathol-dig-first.pdf. [Accessed 31 August 2024]

[2] Lord Carter of Coles. *Report of the Review of NHS Pathology Services in England.* https://www.bipsolutions.com/docstore/pdf/14047.pdf. [Accessed 31 August 2024]

# QUALITY IMPROVEMENT PROJECT TO IMPROVE MEDICAL HANDOVER IN A BUSY DISTRICT GENERAL HOSPITAL

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## Introduction

Handover requires a transfer of immediate and ongoing care's responsibility between healthcare professionals. Changing work pattern means that establishing standards for handover "should be a priority".

## Aims

To improve the structure and standardization of handover at Shrewsbury and Telford Hospital NHS Trust in concordance with Royal College of Physicians (RCP) recommendations for good clinical handover.

## Materials and methods

Quality improvement project (QIP) methodology was adopted with plan, do, study, act (PDSA) cycle. An initial survey was conducted to assess the current situation followed by 2 cycles of QIP, with each cycle lasting 4 weeks. In the first cycle attendees followed the format of handover and following analysis a second cycle was introduced with some changes to the initial format followed by analysis of results.

## PLAN

The interventions were guided by the RCP acute care handover toolkit[1]. It was planned to create a medical handover template that included all essential components to ensure a safe and efficient handover process. Interventions included introduction of a fixed venue, IT facilities, attendance board and document enlisting the format of handover, which required to be completed at each handover session (Figure 1). Key actions included:

- Disseminate the handover structure to the team
- Testing a sign-in sheet with roles and bleep numbers to enhance communication
- Developing a whiteboard in the handover room for update
- Improving IT resources available during handover
- Ensuring handovers start promptly, and enforcing punctuality among all team members
- Involving consultants in the process
- Improving communication regarding staffing shortages

**References:**

1. Royal College of Physicians. Acute care toolkit 1: Handover. RCP, 2011. https://www.rcp.ac.uk/media/5q5hqwbx/acute-care-toolkit1-handover.pdf [Accessed 6 September 2024]

## DO

A sign-in sheet was introduced, emails were sent outlining the expectations for handovers, including time, location, and process. A structured handover document was provided to be completed at each session. Initially, handovers were held in a library room due to a lack of clinic space. Later, A handover room was available, which became the designated space for 9am and 5pm weekday handovers. Laminated copies of the handover template were distributed for use during sessions.

## STUDY

An attendance board and document enlisting the format of handover, was required to be completed at each handover session.

| Medical Handover Structure | Tick |
|---|---|
| 1. Was the handover stared on time? (09:00/21:00) | |
| 2. Allocate a leader – Acute Physician/GIM Consultant/ Take Registrars | |
| 3. Introductions – names and roles | |
| 4. Complete the roles and contacts on sign-in sheet | |
| 5. Complete attendance registry sheet | |
| **Acute Med Floor & ED Handover** | |
| 1. RED patients | |
| 2. AMBER patients | |
| 3. Potential discharges / SDEC appropriate | |
| 4. Outstanding jobs from GREEN patients | |
| 5. Identify learning opportunities during handover(Teaching) | |
| 6. Summarise the patients waiting to be seen | |
| 7. Summaries the situation in SDEC | |
| 8. Patients under non-medical specialties (eg: Ortho/Gen Surg) | |
| 9. Highlight the following: , Urgent Scans, Upper GIT bleed, Procedures (LPs),Pregnant patients. | |
| **Medical Wards Handover** | |
| 1. RED patients | |
| 2. AMBER patients | |
| 3. Potential discharges / SDEC appropriate | |
| 4. Outstanding jobs from GREEN patients | |
| 5. Identify learning opportunities during handover(Teaching) | |
| 6. Patients under non-medical specialties (eg: Ortho/Gen Surg) | |
| **Cardiac Arrest Team** | |
| 1. All members except the cardiac arrest team can leave handover | |
| 2. Complete the cardiac arrest team role allocations | |
| **Other** | |
| 1. Escalate operational issues of concern to the operational team e.g. staffing, patient safety or gaps in procedural competencies. | |
| 2. Was the handover finished on time? (09:30/21:30) | |

**Figure 1. Copy of handover document to be completed**

## ACT

The new process will be adopted as it has made an improvement to the handover.

## Results

The survey had 30 responses constituting 30% consultants, 27% specialty doctors/registrars, 27% senior house officers and 16% advanced clinical practitioners. Half of HCP's participated in medical handover at least 1-2 times per week. On a scale of 1 to 10 (with 1 being highly ineffective and 10 being highly effective), 70% rated the overall effectiveness of current medical handovers as 6 and above. 60-80% felt satisfied with different types of information exchanged during handovers. 75% identified lack of ideal handover location as an obstacle and nearly 2/3rd responded that standardized protocols and IT tools were lacking. Documentation and record keeping was of reasonable standards in just above half of responders while remaining rated it as poor. The results after the two cycles are tabulated in Table 1.

| | PSDA 1 | PDSA 2 |
|---|---|---|
| Leader allocation | 100% | 100% |
| Sign in sheet completion | 81% | 96% |
| 'Red' and 'Amber' patient handover from acute take | 96% | 96% |
| Summary of patients waiting to be seen | 71% | 79% |
| Highlighting urgent scans, procedures, upper GI bleeds, antenatal cases | 68% | 92% |
| 'Red' and 'Amber' patient handover from medical wards | 93% | 100% |
| Unwell patients from non-medical specialties | 75% | 88% |
| Cardiac arrest team allocations | 84% | 96% |
| Learning point discussion at handover | 59% | 58% |
| Operational issues for escalation | 50% | 83% |

**Table 1. Comparison of results from PDSA 1 and PDSA 2 cycles.**

## Conclusion

**Overall, the results demonstrated a positive improvement in several key areas of the handover process in line with RCP guidance following our interventions. We will continue to improve the learning outcomes from the handover process in the near future.**

# A Battle Against Muscle Necrosis: A Case of Autoimmune Myopathy

**Nehal Yemula[1], Dalia Yousif[1]**

[1]Birmingham City Hospital

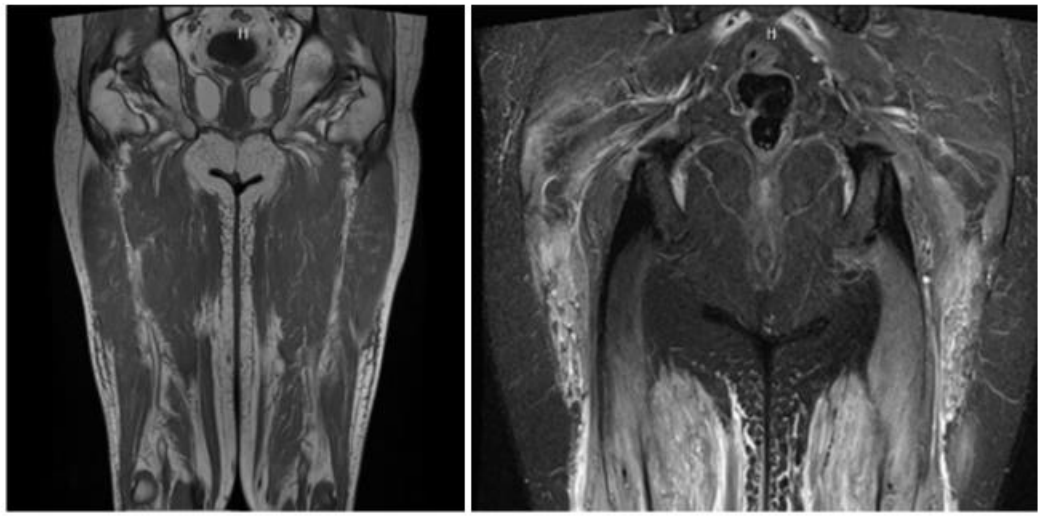
## History

- 50M, admitted to AMU with 2/52 progressive myopathy, localised to lower limbs and later extended into upper limbs
- No rashes, haematuria or viral illnesses
- Symptoms affected daily function → washing, dressing, climbing stairs
- Weight loss → 89kg to 76kg
- Otherwise, fit and well
- Physical Examination:
  - 4/5 Power Upper Limbs
  - 3/5 Flexors Lower Limbs
  - No sensory changes
- **Creatine Kinase: 13,872 U/L**

## Investigations

- Full blood count, renal function and liver function tests → NAD
- Viral Serologies: +ve Hepatitis B Core Antibody
- Autoimmune Screen:
  - **Positive ANA and ENA (Anti Ro-52)**
  - Negative Anti-DsDNA, Rheumatoid Factors and Vasculitis and Complement levels
- Myositis Panel:
  - **Positive anti-SRP**
  - Negative HMGCoAR, paraneoplastic antibodies (IIF panel), serum protein electrophoresis and acetylcholine receptor antibodies ECG – Sinus Rhythm, no conduction blocks
- CT Abdomen Pelvis – No features of primary malignancy
- EMG - **consistent with significant inflammatory myopathy**

## MRI Femurs



MRI consistent **extensive polymyositis** affecting both thighs and the lower pelvis

## Biopsy

- Muscle biopsy showed necrotic myocytic cells → **confirming diagnosis** of **necrotising autoimmune myopathy (NAM)**

## Management

- Commenced on Methotrexate 15mg O.W and tapering dose of Prednisolone (60mg) O.D
- No further systemic organ involvement → negative lung function tests + echo
- **Significant improvement in muscle strength** → 4/5 in both upper and lower limbs, and distal strength reaching 5/5 in the upper limbs.

## Discussion

- NAM → **rare inflammatory disorder** (incidence 9 to 14 cases per million), typically affecting ages 40 and 50[1-2]
- Involves muscle fibre necrosis and specific autoantibodies **e.g. anti-SRP**
- Diagnosis incorporates clinical evaluation, serological testing, imaging and muscle biopsy
- Management focuses on **immunosuppressive therapies**, including corticosteroids and DMARDs
- Significant **proportion of patients** may **achieve satisfactory outcomes** with immunotherapy within **four years**[3]

## Key Points

- Ensure creatine kinase is performed for all patients with proximal myopathy
- Consider early specialist input for better patient outcomes

## References

1. Pinal-Fernandez I, Casal-Dominguez M, Mammen AL. Immune-Mediated necrotizing myopathy. Current Rheumatology Reports [Internet]. 2018 Mar 26;20(4).
2. Ma X, Bu BT. Anti-SRP immune-mediated necrotizing myopathy: A critical review of current concepts. Frontiers in Immunology [Internet]. 2022 Oct 13;13.
3. Pinal-Fernandez I, Parks C, Werner JL, Albayda J, Paik J et al. Longitudinal course of disease in a large cohort of myositis patients with autoantibodies recognizing the signal recognition particle. Arthritis Care & Research [Internet]. 2016 Dec 31;69(2):263–70.

# Reticular Pigmentation as First presentation of Systemic Sclerosis in an Afro-Caribbean Patient

Nehal Yemula[1], Husnain Abid[1], Kashini Andrew[2],
[1]Birmingham City Hospital, [2]Warwick University Hospital

## History and Examination

- 40-year-old Afro-Caribbean female
- 2-year history of fatigue and **generalised hyperpigmentation** post Covid
- No systemic symptoms or weight loss
- PMH: Migraines -> Paracetamol
- SH: Non-smoker, non-drinker
- **Reticular hyperpigmentation** on both lateral breasts, thighs, axilla, central abdomen, dorsal hands and forearms.

## Investigations

- FBC: Microcytic anaemia – Hb 114, MCV 72
- Viral Serology: Hepatitis subtypes, Varicella Zoster, HTLV1, Syphilis and HIV negative
- Autoimmune screen: **+ve ANA (speckled/nuclear 1:1280)** but –ve RF,
  Anti SCL-70, Anti Jo-1, Anti-RNP, Anti-Sm, Anti Ro and Anti La
- Extended myositis screen: Raised Creatine Kinase (412U/L), ESR (18mmol/h)
- **Strong positive for Anti-Ro52 and RNA polymerase 3 antibodies**
- Biopsy right forearm: Minimal hyperkeratosis with a slightly acanthotic epidermis (see image 1 and 2)

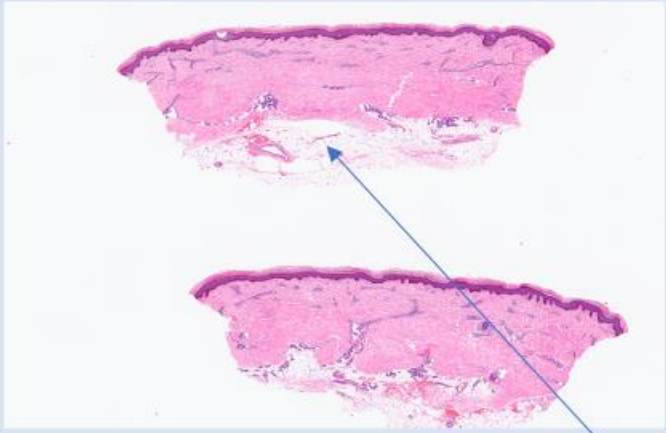


**Image 1:** Low power view (x2) bisected incisional biopsy. Showing dense collagenised stroma in mid dermis with a few strands extending into the subcutis.

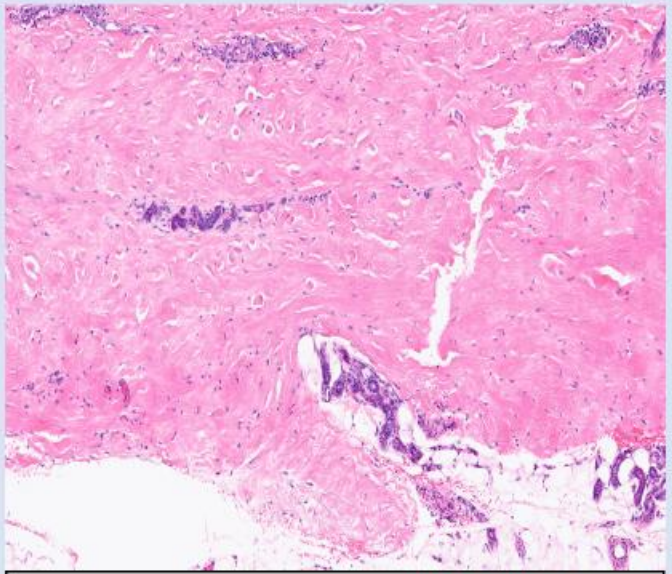


Image 2: Medium power view (x10). Collagen bundles can be seen in longitudinally cross-cut section. Entrapped adnexal structures (eccrine ducts) can be seen with reduced periadnexal fat.

## Management

- **Diagnosis - anti-RNAP3 Systemic Sclerosis**
- Referred to local Rheumatology team → initiated on mycophenolate mofetil and hydroxychloroquine
- Skin treated with Elocon and Cetraben ointment
- **Gross improvement in skin condition** – no underlying systemic organ involvement with further investigations

## Discussion

- Atypical presentation
- No **previously documented case studies**[1-,3] on **reticular pigmentation in patients of Afro-Caribbean** ethnicity
- Prompt referral for specialist opinion should be sought to improve patient outcomes

## References

1. Solanki KK, Hor C, Chang WSJ, Frampton C, White DHN. Clinical utility of hypo- and hyperpigmentation of skin in diffuse cutaneous systemic sclerosis. Int J Rheum Dis. 2017 Jun;20(6):767-773. doi: 10.1111/1756-185X.13049. Epub 2017 Mar 6. PMID: 28261995.
2. Chuamanochan M, Haws AL, Pattanaprichakul P. Reticulate hyperpigmentation in systemic sclerosis: a case report and review of the literature. J Med Case Rep. 2015 Sep 28;9:219. doi: 10.1186/s13256-015-0697-2. PMID: 26412076; PMCID: PMC4584480.
3. Jawitz JC, Albert MK, Nigra TP, Bunning RD. A new skin manifestation of progressive systemic sclerosis. J Am Acad Dermatol. 1984;11:265–8. doi: 10.1016/S0190-9622(84)70163-0.

# OPTIMISING FREQUENCY OF INPATIENT BLOOD TESTS IN CARE OF THE ELDERLY WARDS

Tarcar Pednekar Nichil, Balireddy Raja SRK, Azmat Wagma, Yousaf Sara, Abutu Stephanie, Kusangaya Ranganai, Albrahem Yosif, Mehmood Yasir, Onwuanokwu Ashiedu, Hameed Aima

Kettering General Hospital NHS Foundation Trust

## Introduction

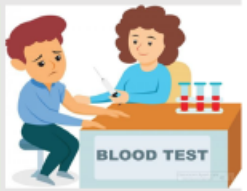
- Blood tests are frequently used by clinicians to help clinical decision making.
- Given the disparity between the cost of healthcare and the resources available it is important to be cost effective to ensure that we use our resources efficiently and avoid unnecessary distress to patients.
- There are NHS England guidelines published in 2021 that sign post to best practice guidance and practical advice for optimising use of blood testing while maintaining clinical standards.

## Materials and Methods

- We randomly included 100 patients admitted to the Geriatric wards NasebyA, NasebyB, and Twywell retrospectively.
- Total number of blood tests (FBC, U&E, CRP, LFT and bone profile) done during the hospital stay were analysed.
- Hospital notes were reviewed to determine if the blood tests were appropriate in specific clinical context and if it adheres to NHS guidance.
- Clinical decisions to repeat blood tests outside the guidance were **NOT** recorded as inappropriate.
- A poster was displayed in the wards and WhatsApp group to inform clinicians of the NHS guidance (Figure 1)
- After 3 months another 100 patients were analysed to look for any improvement.
- Prism Graphpad software used for statistical analysis and graphs.

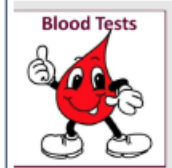
**Optimizing blood testing in secondary care(Elderly wards).**

Does your patient really need the blood test you are about to request? / Does it change your management?
Try to avoid unnecessary blood tests to prevent distress to the patient and will also be cost effective!
(This poster does not supplant your clinical judgement.)




Think twice, Check twice, Order once.

| Bloods Tests: | National Minimum Retesting Interval (MRI): NHS Guidance + GMC Good practice (managing resources effectively) |
|---|---|
| FBC | - No repeat within 4 days in a stable patient/clinically improving patient.<br>- Once daily in unstable patient / when receiving cytotoxic meds. |
| U&E | - No repeat within 4 days for stable patients.<br>- Daily once if on IV furosemide.<br>- On admission and daily in AKI patients until AKI resolves with IV. Fluids. |
| CRP/ Procalcitonin | - Tested at interval of 48-72 hours if needed. |
| Bone Profile | - No need to repeat if normal.<br>- May be more frequently in low/high Calcium / Phosphate/ magnesium )<br>- Vitamin D – do not re-test. |
| LFT | - Not more than 72 hourly (apart from poisoning cases)<br>- GGT done weekly if needed. |




Let's follow above Guidance and be more efficient and Cost Effective!
**Please avoid requesting routine bloods on weekends / public holidays.**

Figure 1: Poster

## Results and Discussion

### FBC

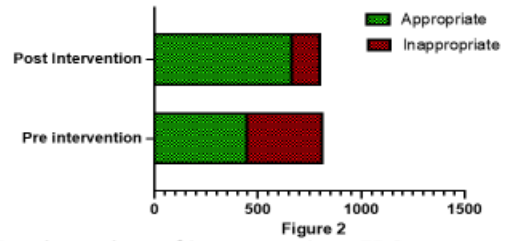



Figure 2

Total number of inappropriate FBC tests decreased to 16.9% from 44.62% (figure 2)
P value <0.0001 by Chi-square test

### U&E

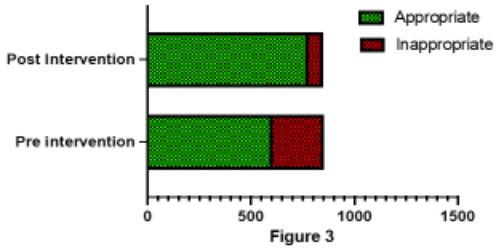



Figure 3

Total number of inappropriate U&E tests decreased to 8.15%& from 28.7% (figure 3)
P value <0.0001 by chi-square test

Significant difference was seen when FBC and U&E were compared (P <0.0001) suggesting that FBC are unnecessarily ordered along with U&E (when only U&E is needed)

CRP, LFT and Bone profile tests also showed reduction in inappropriate tests by 22.5%, 17.7% and 16.1% respectively.

### Total tests

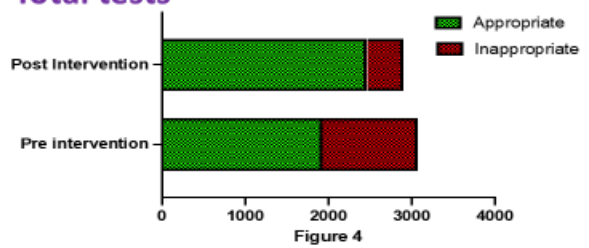



Figure 4

Total number of inappropriate tests reduced to 15% from 37.34% (figure 4). P value <0.0001 by Chi-square test. Post intervention cohort had higher hospital stay by 507 days compared to previous.

## Conclusion

- We were able to reduce the total inappropriate blood tests ordered by informing our colleagues about NHS guidance via a poster and WhatsApp group reminders.
- We will be implementing this strategy in other department in our hospital.

1. Optimising blood testing in secondary care 2021 NHS England https:www.England.nhs.uk/wp-content/uploads/2021/09/B0960-optimising-blood-testing-secondary-care.pdf (Accessed 28/02/2024)
2. Lewis S, Young B, Thurley P, et al. Does cost feedback modify demand for common blood tests in secondary care? A prospective Controlled intervention study. Future Healthc J. 2019 Oct;6(3):204-208
3. Akhtar W, Chung Y. Saving the NHS one blood test at a time. BMJ Quality Improvement Reports 2014.

# Interpreting thyroid function tests: treating the patient and not the blood test

*Nidhi Manoj*,[1] Prerna Misra,[1] Irene Jacob,[2] George I Varughese,[1] Ananth U Nayak.[1] (1) University Hospitals of North Midlands NHS Trust, Stoke-on-Trent, (2) University of Leicester Medical School, UK

University Hospitals of North Midlands NHS Trust

**Introduction:**

Thyroid hormone resistance (THR) and familial dysalbuminaemic hyperthyroxinaemia (FDH) are rare conditions often discovered incidentally during thyroid function tests. Patients may present with non-specific symptoms, leading to diagnostic dilemmas, particularly in primary care. This abstract discusses two patients, offering insights into their fluctuating hormone levels over time and the management of these clinical conundrums.

**Case reports:**

**Patient X:** 32-year-old male

The patient was referred for abnormal thyroid function tests and symptoms including mood fluctuations, energy changes, and sleep disturbances. A history of obstructive sleep apnoea and previous injuries was noted. Initial tests indicated hypothyroidism, leading to levothyroxine treatment. Six months later, tests showed hyperthyroidism, prompting a switch to carbimazole.

Nuclear medicine thyroid uptake scan revealed a mildly hyperfunctioning thyroid with a hypo-functioning nodule, later confirmed as benign by ultrasound. Thyroid autoantibodies (TRAb and TPO) were negative, and carbimazole was discontinued.

Despite normalisation of thyroid functions after a year, the patient experienced wide fluctuations in thyroid function over time (Table 1),[1] and genetic testing confirmed a diagnosis of FDH.[2]

**Patient Y**: 19-year-old male

The patient was referred to the endocrine clinic for abnormal thyroid function tests and symptoms, including fatigue, low mood, palmar sweating, occasional palpitations, and elevated blood pressure, with no known comorbidities. Initial tests showed elevated TSH with normal fT3 and fT4 levels.

A year later, TSH increased further (Table 2), and fT3 was also elevated.[3] Thyroid function interference assays were negative,[4] alpha subunit levels were normal, and genetic testing for THR was negative, acknowledging that approximately 15% of THR cases may not have detectable genetic mutations.[5]

The working diagnosis is THR. The patient is not on any medications but is being monitored for new symptoms or changes in thyroid function.

**Conclusion:**

Patients with THR and FDH often present with symptoms and thyroid hormone levels that do not align with clinical expectations, leading to potential misdiagnosis and overtreatment.[6,7]

For example, they can mimic hyperthyroidism, resulting in unnecessary and possibly irreversible treatments such as thyroidectomy or radioactive iodine therapy,[8] despite these interventions being unwarranted. Careful interpretation is required.

Awareness of these conditions is prudent, particularly when managing patients with abnormal thyroid function tests who are clinically well.[9]

The autosomal dominant inheritance pattern in FDH suggests that more patients may carry latent forms of the condition, underscoring the importance of accurate diagnosis and appropriate management to prevent unnecessary treatments and ensure optimal patient outcomes. Clinical corelation is warranted.

It is pertinent to have a high index of suspicion for these well-recognised but less commonly perceived conditions and it is crucial not to act on test results.

| Table 1 (FDH) Patient X | March 2017 | November 2017 | June 2018 | December 2019 | July 2023 |
|---|---|---|---|---|---|
| TSH (0.3-5) mIU/L | 22.4 | 0.01 | 0.01 | 2.07 | 2.1 |
| Free T4 (8-19) pmol/L | 16 | 36 | 30 | 25 | 22 |
| Free T3 (2.1-6) pmol/L | - | 12.9 | 9.1 | 9.1 | - |
| Treatment | Thyroxine | Carbimazole | Carbimazole | Not on medications | Not on medications |
| Intervention/Event | Continue Thyroxine | Stopped Thyroxine, commenced on Carbimazole | NM Thyroid scan, USG thyroid. Stopped Carbimazole. Anti-TSH receptor and Anti-TPO antibodies negative | Genetic screening, thyroid interference studies | Routine follow up |

| Table 2 (THR) Patient Y | June 2022 | October 2022 | April 2024 | June 2024 |
|---|---|---|---|---|
| TSH (0.3-5) mIU/L | 14.96 | 6.3 | 35.98 | 23.75 |
| Free T4 (8-19) pmol/L | 17 | 16 | 12 | 13.5 |
| Free T3 (2.1-6) pmol/L | - | 7.6 | 6.7 | 5.7 |
| Treatment | Not on any medications | Not on any medications | Not on any medications | Not on medications |
| Intervention/Event | Repeat thyroid function tests | Thyroid interference studies, anti-TPO antibodies, genetic screening | Repeat Thyroid function tests | Continue to follow up regularly with TFTs |

**References:**


1. Petitpas et al. Structural basis of albumin-thyroxine interactions and familial dysalbuminemic hyperthyroxinemia. Proc Natl Acad Sci U S A. 2003 May 27;100(11):6440-6445.
2. Dieu X et al. Familial Dysalbuminemic Hyperthyroxinemia: An Underdiagnosed Entity. J Clin Med. 2020 Jul 3;9(7):2105.
3. Dumitrescu AM et al. The syndromes of reduced sensitivity to thyroid hormone. Biochim Biophys Acta. 2013 Jul;1830(7):3987-4003.
4. Favresse J et al. Interferences With Thyroid Function Immunoassays: Clinical Implications and Detection Algorithm. Endocr Rev. 2018 Oct 1;39(5):830-850.
5. S Gonçalves AP et al. A case of thyroid hormone resistance: a rare mutation. Arq Bras Endocrinol Metabol. 2014 Dec;58(9):962-966.
6. Sun H et al. Update on resistance to thyroid hormone syndromeβ. Ital J Pediatr. 2020 Nov 11;46(1):168.
7. Ting MJM et al. Familial Dysalbuminemic Hyperthyroxinemia as a Cause for Discordant Thyroid Function Tests. J Endocr Soc. 2021 Feb 1;5(4):bvab012.
8. Rivas AM et al. Thyroid hormone resistance and its management. Proc (Bayl Univ Med Cent). 2016 Apr;29(2):209-11.
9. Khoo S et al. Familial dysalbuminemic hyperthyroxinemia confounding management of coexistent autoimmune thyroid disease. Endocrinol Metab Case Rep. 2020 Feb 26;19-0161

# FAST-PACED MEDICINE, FOCUSED LEARNING:
# LEARNING OF THE DAY (LOD) APPROACH

The Shrewsbury and Telford Hospital NHS Trust

**Delivering Quality Teaching in the Dynamic Environment of Acute Medicine Based on a Quality Assessment Recommendation for Junior Doctors**

## OBJECTIVES

- Provide focused, relevant, and accessible teaching in acute medicine.
- Increase knowledge, confidence, and clinical skills of junior doctors and physician associates.
- Promote a sustainable teaching model within a busy hospital setting.

## METHODOLOGY

### LoD Structure:

- Bite-sized sessions (20-30 minutes).
- Scheduled around lunch or late afternoon.
- Conducted twice weekly by consultants or registrars.
- Topics on general and acute medicine discussed.
- Use of whiteboards for interactive teaching.

### Survey Data Collection:

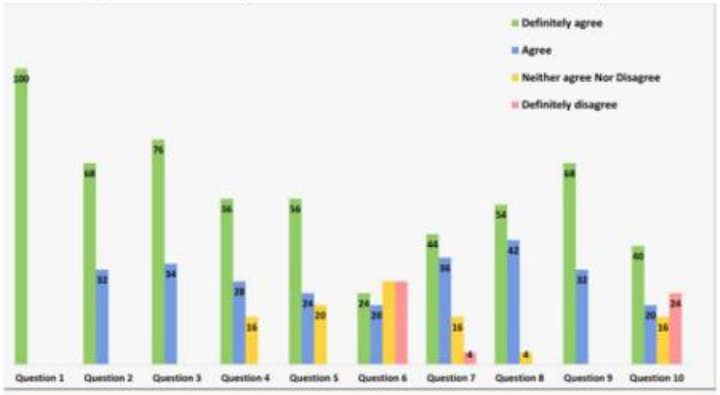
Paper-based anonymous survey of junior doctors and physician associates.
10 questions assessing the program.

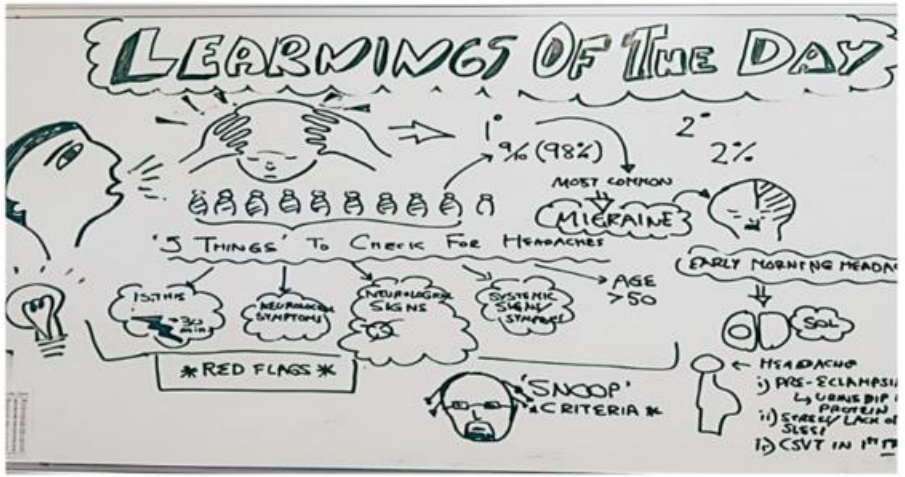
| | |
|---|---|
| Q1 | Are you aware of the learning of the day? |
| Q2 | The topics discussed at the learning of the day are important to my practice? |
| Q3 | The topics discussed at the learning of the day have provided new knowledge or improved my existing knowledge |
| Q4 | Learning of the day sessions have increased my confidence in managing specific conditions ? |
| Q5 | Learning of the day delivers learning in a format that is easy to understand? |
| Q6 | Learning of the day is an interactive session and allows me to contribute? |
| Q7 | Learning of the day is an innovative way to provide bite size learning and should be done on all medical wards? |
| Q8 | I consider learning of the day as a replacement for ward round teaching? |
| Q9 | Learning of the day at the end of ward rounds is an ideal time? |
| Q10 | Learning of the day should be facilitated by registrars or consultants only? |

## KEY FINDINGS

### Survey Response Rate:

25 respondents (61% of clinical workforce)




## ANALYSIS

The LoD initiative demonstrates that structured, bite-sized teaching sessions are feasible and effective in a busy acute medicine setting. The program's success in improving knowledge and clinical confidence highlights its potential for broader implementation across hospital departments.

## CONCLUSION

LoD is an innovative, effective teaching method.
Enhances knowledge and confidence of clinical staff.
Should supplement, not replace, ward round teaching.

Dr. Nipun Gupta Dr.Gordon Wood Dr.Nawaid Ahmad

# Ovarian cancer mortality in the European region (1992–2021): an age–period–cohort analysis from the Global Burden of Disease Study

Pincheng Luo; Yanxue Lian

School of Medicine, University of Galway

## Introduction

Ovarian cancer (OC) is one of the most common gynecological cancers, posing a significant health burden for women worldwide. In Europe, OC ranks as the sixth most common cancer among females. Given the substantial burden OC imposes, it is critical to provide a comprehensive understanding of mortality trend over the past 30 years across European countries, along with the associations between the trend and factors such as age, period, and birth cohort, to address the current research gap.

## Materials and Methods

Data was extracted from the Global Burden of Disease 2021, an age-period-cohort model was employed to calculate the overall annual percentage change in mortality rate (net drifts), as well as the annual percentage change across age groups from 15-19 to 95+ years (local drifts), and the relative risks associated with periods and cohorts from 1992 to 2021. This method facilitates the analysis and distinction of age, period, and cohort effects in mortality trends.

## Conclusion

OC-related mortality in the European region remains a significant concern, despite progress made between 1992 and 2021, with a net drift of -0.97%. This suggest the critical need for continued investment in prevention, early detection, and advanced treatment strategies to further lower mortality rates, with particular focus on women entering perimenopause and menopause (aged 40 and above).

## Results

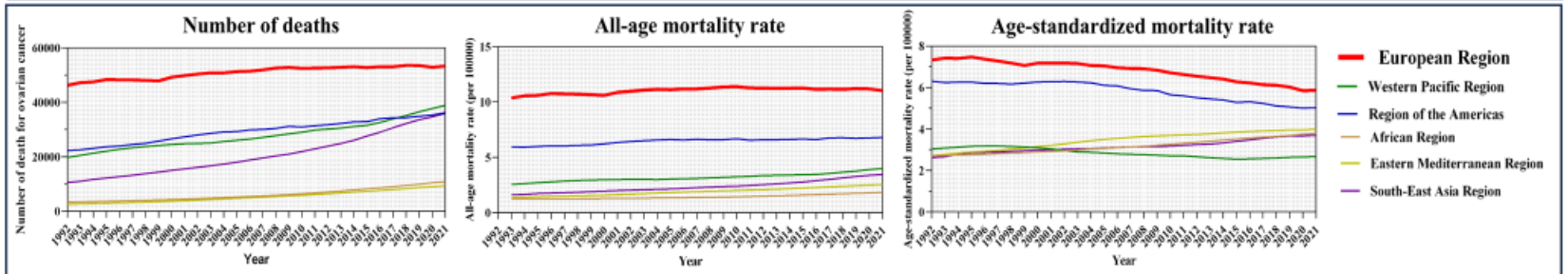



**Fig 1. Temporal trends of OC mortality among the six WHO regions from 1992 to 2021.** From 1992 to 2021, the European region consistently recorded the highest OC death number, mortality rate, and age-standardized mortality rate among all six WHO regions.

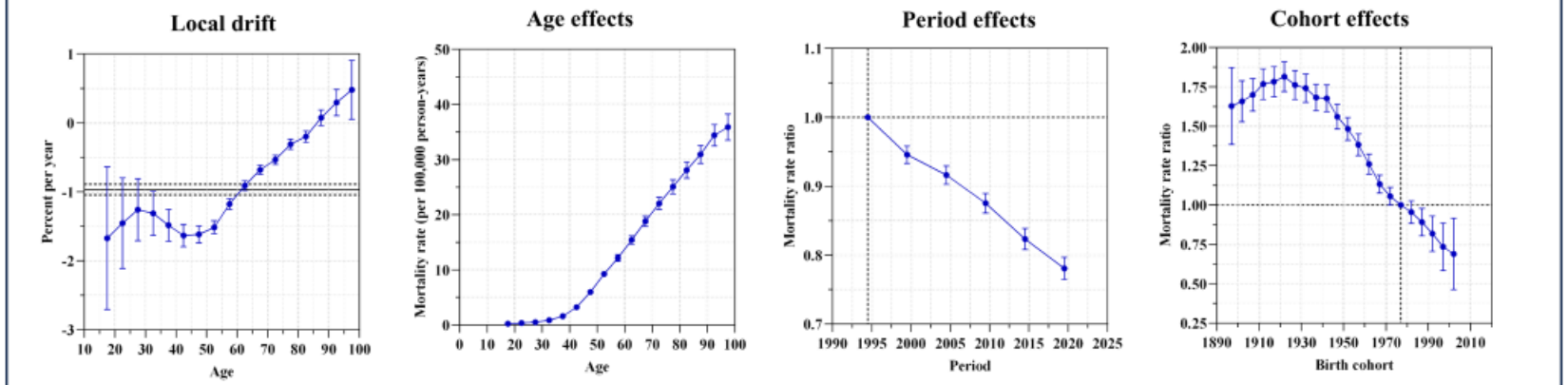



**Fig 2. The local drifts, age effects, period effects, and cohort effects of OC mortality in the European Region from 1992 to 2021.** The net drift of OC mortality in the European region was -0.97%. The increase in local drift with age suggested that the mortality rate for OC was rising faster in older age groups compared to younger ones. Longitudinal analysis showed that OC mortality risk accelerated significantly after the 40-44 age group. Moreover, a sharp decline in OC-related mortality was observed in association with period effects, along with improvements across successive birth cohorts.

ESNEFT

# DOXYCYCLINE CAUSING IDIOSYNCRATIC DILI LEADING TO ACUTE LIVER FAILURE AND LIVER TRANSPLANTATION

Dr P Loganathan
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Dr A Shenoy

## An Unexpected culprit affecting the liver

### CASE PRESENTATION :

- 24-year-old male presented with a 4-day history of jaundice, epigastric discomfort and fatigue.
- Two months before the onset of symptoms, he had been prescribed a 7-day course of doxycycline by his GP for a suspected pilonidal sinus infection.
- No significant past medical, social, travel or family history.
- Non-Alcoholic, No OTC/Herbal medications, No tattooing, No I.V drug abuse
- On examination: Scleral icterus ++, No other features of liver decompensation.

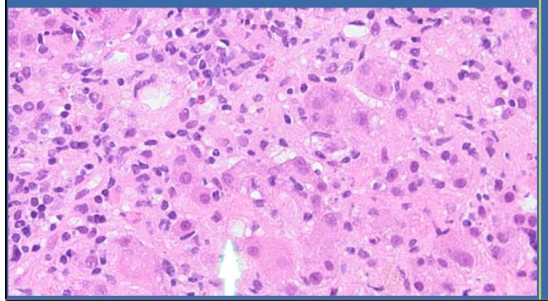
### INVESTIGATIONS :

Non- invasive liver screen:

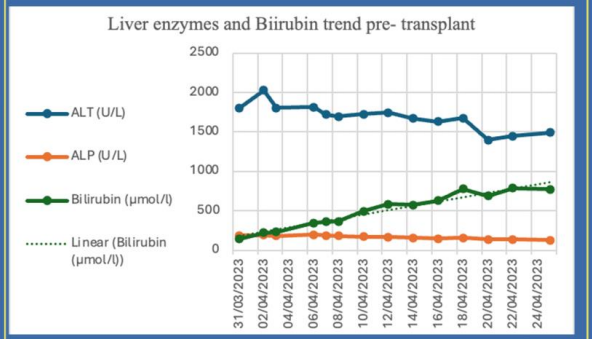
Viral serology (Hep A,B,C,E,CMV,EBV,VZV)- Negative
Liver Autoantibodies- Negative
Immunoglobulins- Normal
Copper and Ceruloplasmin- Normal
Alpha-1 antitrypsin- Normal
Iron studies- suggestive of inflammatory picture

USS Abdomen: Normal liver,GB,CBD and patent portal vein.

### HISTOPATHOLOGY :



### TREND OF LFT's BEFORE LIVER TRANSPLANT:




### CLINICAL COURSE :

- A liver biopsy was done, in view of persistently elevated liver enzymes along with a rising prothrombin time. The biopsy revealed cholestasis and presence of eosinophils, which suggested a possible drug toxicity.
- After rigorously ruling out other possible aetiologies, a diagnosis of doxycycline induced idiosyncratic DILI was made based on the clinical picture, suggestive biopsy findings and temporal correlation with doxycycline use.
- He was transferred to tertiary liver unit after 25 days of admission in view of non-resolving severe hepatitis though he was clinically stable. Two weeks later, he developed subacute liver failure and underwent super urgent liver transplantation. Following liver transplantation, he improved, and his liver functions recovered.
- On routine follow up- currently his transplant is functioning well and is on maintenance immunosuppressants.

### COURSE OF LFT's PRE AND POST TRANSPLANT

| | (31/03/2023) | transfer to tertiary liver unit (25/04/2023) | transplant (26/06/2023) | Outpatient follow up (17/06/2024) |
|---|---|---|---|---|
| ALT (0-41 U/L) | 1797 | 1491 | 71 | 32 |
| ALP (30-130 U/L) | 186 | 127 | 125 | 66 |
| Bilirubin (0-21 µmol/L) | 141 | 772 | 20 | 8 |
| Albumin (35-50 g/L) | 46 | 35 | 36 | 40 |
| Prothrombin time (10-15 seconds) | 12 | 17.3 | 14.3 | 13.4 |
| Platelet count (135-450x10*9/L) | 296 | 231 | 289 | 174 |

### DISCUSSION :

- Diagnosing DILI is often challenging and should be considered only after excluding all other potential causes.
- The latency period for idiosyncratic DILI is highly variable and for doxycycline it ranges from days to months (often within 60 days).
- The pattern of liver injury from doxycycline is commonly, a combination of hepatocellular and cholestatic [1].
- It recovers generally within six months, however in some individuals, it can cause prolonged and severe liver injury.
- Cholestatic DILI is less severe and might lead to chronic hepatitis, whereas hepatocellular DILI is more likely to be fatal and/or result in liver transplantation, which is evident from this case [2].

### LEARNING POINTS :

- Drug history is mandatory in patients with deranged liver function tests to identify DILI which is often overlooked.
- Appropriate referral to tertiary liver unit is crucial, especially in patients with persistent severe hepatocellular injury.
- Hepatocellular DILI leading to acute liver failure can develop more gradually unlike paracetamol where it develops more rapidly [3].

1 Varma S, Nathanson J, Dowlatshahi M, et al. Doxycycline-induced cholestatic liver injury. Clin J Gastroenterol. 2021 Oct;14(5):1503-1510.
2 Chalasani NP, Maddur H, Russo MW, Wong RJ, Reddy KR; Practice Parameters Committee of the American College of Gastroenterology. ACG Clinical Guideline: Diagnosis and Management of Idiosyncratic Drug-Induced Liver Injury. Am J Gastroenterol. 2021 May 1;116(5):878-898.
3 Reddy KR, Ellerbe C, Schilsky M, et al. Acute Liver Failure Study Group. Determinants of outcome among patients with acute liver failure listed for liver transplantation in the United States. Liver Transpl. 2016 Apr;22(4):505-15.

# Disentangling Complex Endocrinology: A Case of Misdiagnosed Adrenocortical Carcinoma

Prerna Misra, Jovito James, Cosmina Schiteanu, Arun Vijay, Biju Jose, Nidhi Manoj. (1) University Hospitals of North Midlands NHS Trust, Stoke-on-Trent

## Introduction:

- Adrenocortical carcinoma (ACC) is a rare and aggressive endocrine malignancy, often challenging to diagnose due to its overlapping features with other neoplasms. It typically presents with either hormone overproduction or mass effects, but non-specific symptoms can lead to delays in diagnosis [1]. This case highlights the complexities in accurately diagnosing ACC, especially when initial symptoms and imaging suggest alternative pathologies.

## Case Presentation:

- This case report details the diagnostic and therapeutic journey of a young female patient who initially presented with non specific symptoms like general fatigue, cognitive dysfunction and palpitations which worsened on standing and walking upstairs. Diagnosed with autonomic dysfunction and inappropriate sinus tachycardia after extensive cardiological work-up, she was commenced on Ivabradine. Despite the medication, her symptoms continued to evolve. A year later, the patient was admitted with chest pain, fever, abdominal pain, shortness of breath and bouts of sweating. An initial workup included blood tests (D-dimers, CRP, LFTs, LDH, U/Es) and an abdominal ultrasound, which showed splenomegaly (18.9 cm) and a hyperechoic lesion.

| | |
|---|---|
| D – Dimers | 6682 ng/mL |
| CRP | 29 mg/L |
| LDH | 532 U/L |

- The raised D-dimers prompted a subsequent CT pulmonary angiogram which ruled out pulmonary embolism, however, revealed hepatosplenomegaly and a large left-sided retroperitoneal mass, measuring 12.4 x 11.6 cm, anteriorly displacing the spleen. An MRI further characterised this mass as a left retroperitoneal/suprarenal lesion with necrosis and haemorrhage. Further testing, including FDG PET scan and plasma metanephrines, ruled out pheochromocytoma. Biochemical tests, such as serum cortisol levels, were within normal range.
- A CT-guided biopsy initially indicated a diagnosis of pleomorphic sarcoma. Following surgical resection, which entailed a left adrenalectomy and nephrectomy, the lesion was confirmed as a high-grade myxoid pleomorphic sarcoma.
- Her postoperative phase was complicated by septicaemia and acute kidney injury, necessitating an extended ICU stay and intermittent haemodialysis.

## Revised Diagnosis:

- Immunohistochemistry and molecular tests revised the diagnosis to Adrenocortical carcinoma. The tumour was characterised by a high Ki-67 proliferation index of 10-40% [3]. Histopathological analysis showed poor differentiation, extensive necrosis, and a high mitotic rate, all indicators of an aggressive phenotype. Despite adjuvant treatment with Mitotane and the initiation of palliative chemotherapy (Etoposide, Doxorubicin, and Cisplatin), follow up CT scans confirmed relapse with metastases to the liver, lymph nodes, and lungs.

## Discussion:

- These findings highlight the diagnostic challenges of ACC, particularly when the patient demographic and imaging may suggest alternative diagnoses such as sarcoma [2]. Non-specific early symptoms, such as dysautonomia, were likely a manifestation of paraneoplastic syndromes, contributing to the diagnostic delay. Advanced molecular diagnostics such as immunohistochemical markers and genetic profiling were essential in arriving at the final diagnosis, emphasising the importance of a multidisciplinary approach in endocrine oncology. This case demonstrates the importance of continuous vigilance and follow-up in patients with ACC due to the high likelihood of recurrence and metastasis.

## Conclusion:

- The patient's current involvement in a immunomodulatory drug clinical trial offers a promising treatment avenue. This case provides valuable insight on ACC and underscores the need for ongoing research into early detection, diagnostic accuracy and various novel treatment options.

## References:

1. Else T, Kim AC, Sabolch A, Raymond VM, Kandathil A, Caoili EM, Jolly S, Miller BS, Giordano TJ, Hammer GD. Adrenocortical carcinoma. Endocr Rev. 2014 Apr;35(2):282-326. doi: 10.1210/er.2013-1029. Epub 2013 Dec 20. PMID: 24423978; PMCID: PMC3963263.
2. La Rosa S. Diagnostic, Prognostic, and Predictive Role of Ki67 Proliferative Index in Neuroendocrine and Endocrine Neoplasms: Past, Present, and Future. Endocr Pathol. 2023 Mar;34(1):79-97. doi: 10.1007/s12022-023-09755-3. Epub 2023 Feb 17. PMID: 36797453; PMCID: PMC10011307.
3. Dobrindt EM, Saeger W, Bläker H, Mogl MT, Bahra M, Pratschke J, Rayes N. The challenge to differentiate between sarcoma or adrenal carcinoma-an observational study. Rare Tumors. 2021 Dec 10;13:20363613211057746. doi: 10.1177/20363613211057746. PMID: 34917301; PMCID: PMC8669116.

University Hospitals of North Midlands NHS Trust

# Sleep Tight, Survey Right: Improving Sleep Apnoea Outcomes, One Questionnaire at a Time

**Priyanka Asodaria[1], Claire Wood[2], Marcus Pittman[2], Amit S Patel[2], Rajiv Madula[2], Kai K Lee[2,3]**

[1]GKT School of Medicine, King's College London; [2]Department of Respiratory Medicine, King's College Hospital NHS Foundation Trust; [3]School of Immunology & Microbial Sciences, Faculty of Life Sciences and Medicine, King's College London.

## Purpose

Patients with vigilance critical occupations or other key comorbidities should be prioritised for rapid assessment of suspected obstructive sleep apnoea[1]. Pre-clinic patient-completed questionnaires provide triaging clinicians key information to aid clinical decision-making. However, questionnaires are often not fully completed, limiting this process and delaying assessments for patients.

This project aimed to increase capture of patient occupation and completion of a pre-clinic sleep questionnaire in use at a tertiary sleep centre in London. Input from key stakeholders; physiologist and respiratory consultants, formed our hypothesis: improved questionnaire structure and guidance for patients on importance of the questionnaire could improve the completion rate.

Project targets:

i. Increase completion rate of the occupation section of the sleep clinic questionnaire.
ii. Achieve a target of 85% completion rate of the sleep clinic questionnaire in all sections.

## Methods

Patients who attended the sleep clinic and completed the questionnaire were included. Data collection occurred between September 2023 and March 2024. Data collected: completion status of the Occupation, Weight and Height, STOP, Parasomnia, Epworth, Daily Routine, Driving and Dental sections of the questionnaire.

Interventions for Plan-Do-Study-Act (PDSA) 1:

- Inclusion of a reasoning statement to educate patients about the importance of the questionnaire
- Reformatting the questionnaire to highlight the occupation section

Interventions for PDSA 2:

- Inclusion of a frequently asked questions guide attached to the clipboard patients use to complete the questionnaire

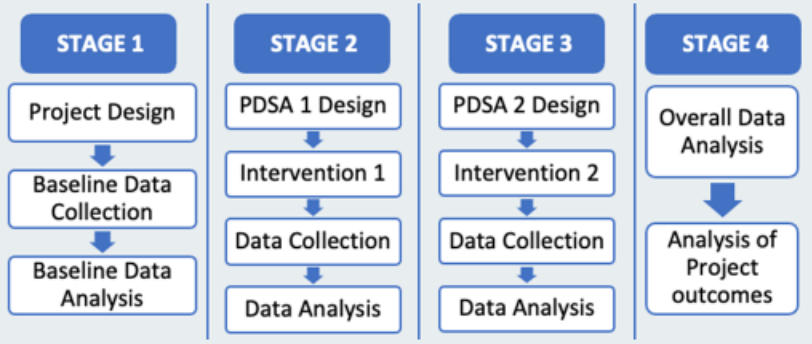



Figure 1: diagram depicting planned workflow for the project.

## Results

Baseline, PDSA1 and PDSA2 data collection resulted in 37, 27 and 93 questionnaires, respectively. Our results demonstrated a significant increase in occupation completion rate from 59% at baseline to 97% post-PDSA2 ($p<0.01$). All sections individually achieved a completion rate 85% or higher by PDSA2. Overall average completion rate increased by 7% between baseline and PDSA2 ($p<0.01$) (Table 1).

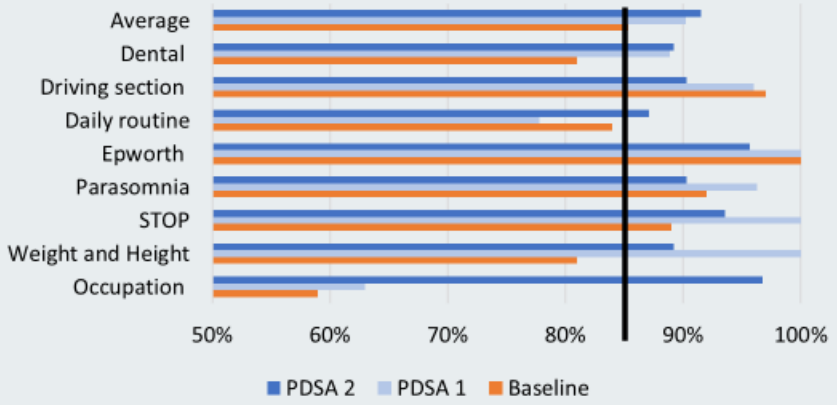



Figure 2: demonstrating change in percentage completion (x axis) of the sections of the Sleep Clinic Questionnaire (y axis) between Baseline, PDSA1 and PDSA2. Black line denotes target 85% completion.

| Section of Questionnaire | Baseline to PDSA 1 | PDSA1 to PDSA2 | Baseline to PDSA 2 |
|---|---|---|---|
| **Occupation** | NS | **<0.05** | **<0.01** |
| **Weight and Height** | **<0.05** | NS | NS |
| STOP | NS | NS | NS |
| Parasomnia | NS | NS | NS |
| Epworth | NS | NS | NS |
| Daily Routine | NS | NS | NS |
| Driving | NS | NS | NS |
| Dental | NS | NS | NS |
| **Overall** | NS | NS | **<0.01** |

Table 1: reports p values comparing change in completion rate between Baseline, PDSA1 and PDSA2. Fischer's exact tables tested the presence of a statistical difference in completion before and after initiation (NS – not significant).

## Conclusion

In this cohort of patients, our interventions significantly increased completion rate of the sleep questionnaire. The project successfully achieved both aims. The project has been embedded into the department, however, there is scope to "spread" and "scale" these interventions across the speciality and to other departments (Figure 2). Future work should include patient focus groups to assess other areas for improvement.

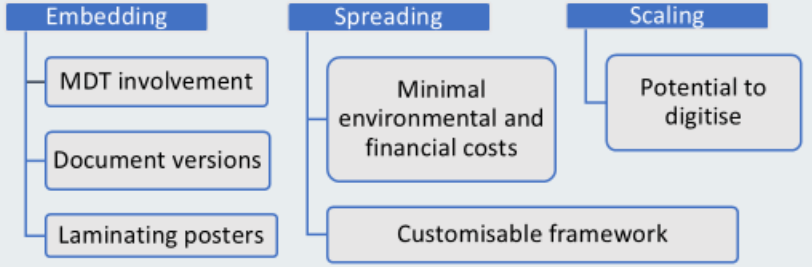



Figure 3: assesses factors related to embedding (ensuring sustained interventions), spreading (sharing insights with other sectors), and scaling (expanding the work's potential) this work.

1. Obstructive sleep apnoea/hypopnoea syndrome and obesity hypoventilation syndrome in over 16s. https://www.nice.org.uk/guidance/ng202 [Accessed 21 August 2024].

# Hepatopulmonary syndrome (HPS) – 'A vascular enigma in MASLD with unexplained hypoxia'

The Royal Wolverhampton NHS Trust

## Authors : Purva Potdar[1] , Shilpi Shukla[1] (Newcross hospital, RWT)

### Background:

HPS is a rare, underdiagnosed condition often associated with advanced liver disease or portal hypertension. It results in reduced arterial oxygen saturation due to IPVDs (Intrapulmonary vascular dilatation), presenting challenges in both diagnosis and management. This case highlights the complexity of diagnosing HPS, emphasizing the importance of increased awareness amongst clinicians to improve patient outcomes.

### Case:

The patient, a woman in her late 60s, non-smoker, had a history of MASLD with cirrhosis (metabolic dysfunction-associated steatotic / formerly non-alcoholic fatty liver disease NAFLD), type 2 diabetes mellitus and hypertension. Admitted with abdominal pain and vomiting due to constipation.

During her hospital stay, she was noted to be hypoxic requiring supplemental oxygen 2L via nasal cannula. Despite treatment for constipation and deemed medically suitable for discharge, saturations dropped to 86-88% whenever the supplemental oxygen was tried to wean off.

Examination revealed chronic liver disease stigmata - spider naevi, mild clubbing, and an ejection systolic murmur in the aortic area.

Her oxygen saturation was 84% in an upright position, prompting to consider to possibility of orthodeoxia, a hallmark of HPS.

Due to persistent hypoxemia, orthodeoxia and platypnoea, she was worked up for suspected HPS.

Investigations summarized in Table 1. Of note was the significantly raised arterial alveolar gradient in the arterial blood gas and bubble contrast Echo confirmed the diagnosis.

**Table 1:**

| Investigations: | Interpretation: |
|---|---|
| Bloods: | Normal inflammatory markers, mildly deranged LFTs keeping in with cirrhosis. |
| D-Dimer: | 3893 ng/ml |
| Chest X-ray: | NAD |
| CTPA: | No PE |
| Calculated A-a (Alveolar-arterial) gradient from arterial blood gas: | 4.0 kPa (is increased indicating impaired gas exchange.) |
| Bubble contrast TTE (transthoracic echocardiogram): | Presence of an intrapulmonary shunt and delayed appearance of bubbles in the left atrium, confirming diagnosis of HPS. |

### Conclusion:

HPS remains underdiagnosed because of its rarity and complex pathophysiology. Early recognition and management are crucial, as liver transplantation is the only definitive treatment. This case highlights the importance of a multidisciplinary approach in diagnosing and treating HPS, mainly in patients with unexplained hypoxemia and chronic liver disease.

Patient outcome: Outcome: Hepatologist opinion, not considered suitable for liver transplantation and was referred to palliative care for symptom management. She has been enrolled in the NAFLD BioResource research study.

### Discussion:

HPS is a serious pulmonary complication of chronic liver disease, with a prevalence of 5-32% among those awaiting liver transplantation.

- It is caused by an imbalance between vasodilators and vasoconstrictors, leading to IPVDs and ventilation-perfusion mismatch.
- HPS can be classified into 2 types, depending on the size and location of the dilated vessels.
- Type I involves precapillary vessel dilations and typically responds to supplemental oxygen, as seen in this case.
- Diagnosing HPS can be challenging due to its nonspecific symptoms and the need for specialized tools such as contrast-enhanced echocardiography.
- Liver transplant is the main treatment.

### References:


- Wijaya IP. Chronic Hypoxemia Inadvanced Liver Diseases: Hepatopulmonary Syndrome. International Journa of Medical Science and Clinical Research Studies. 2023 Sep 5;3(9):1817-21.
- Porther R, Ross G, Nagasayi S. Breathlessness in liver disease: A case of hepatopulmonary syndrome. Clinical Medicine. 2019 May 1;19(3):250-1.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# Lumbar Puncture Safety and Competency Amongst Junior Clinical Fellows

*Rachel Lai, Chinechem Okoyeuzu, Prajakta Pradhan*
*Acute Medicine Department, Royal Derby Hospital*

## INTRODUCTION

- Lumbar puncture (LP) is a common procedure performed in Acute Medicine to exclude subarachnoid haemorrhage and central nervous system infections.
- Lumbar punctures are invasive and complications post-procedure are common.

## AIMS

- To improve documentation of consent and procedure.
- To increase knowledge and LP practical competency
- To establish a one-stop LP equipment trolley

## METHODS

***Figure 1*: PDSA CYCLES**

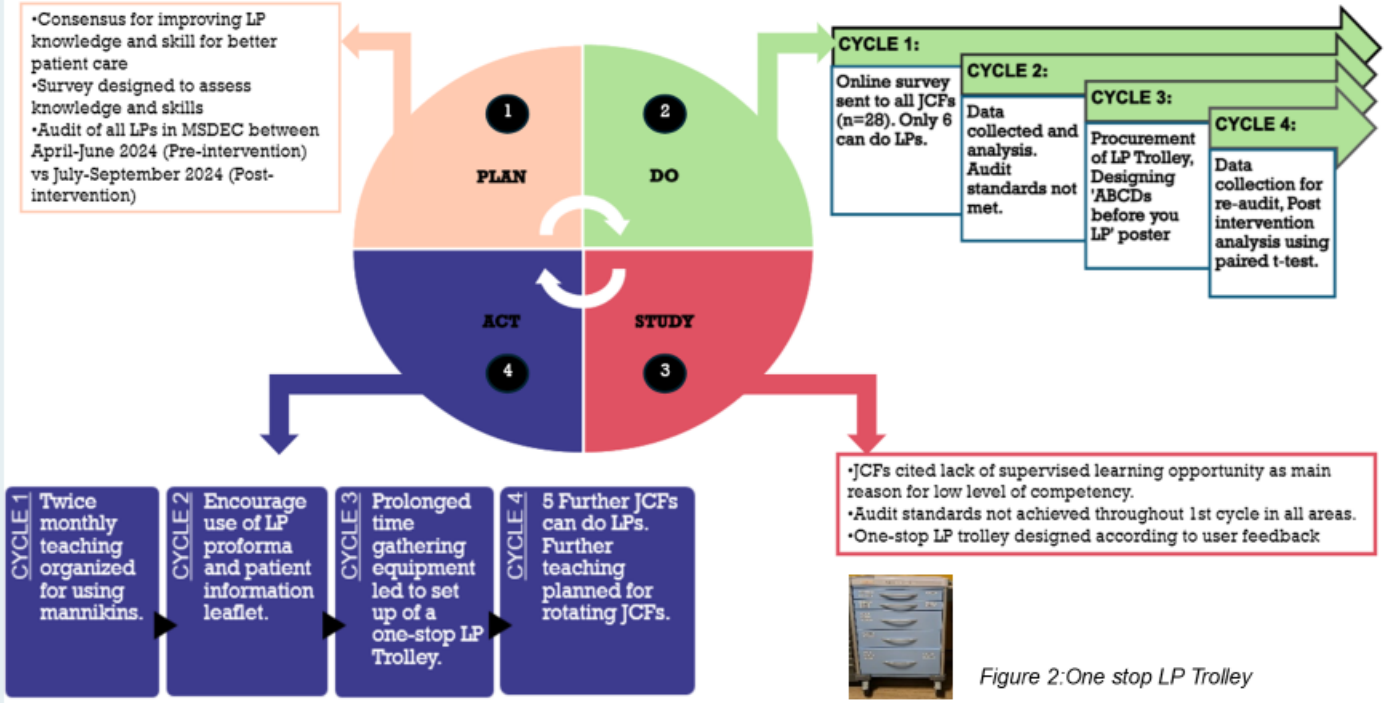




*Figure 2:One stop LP Trolley*

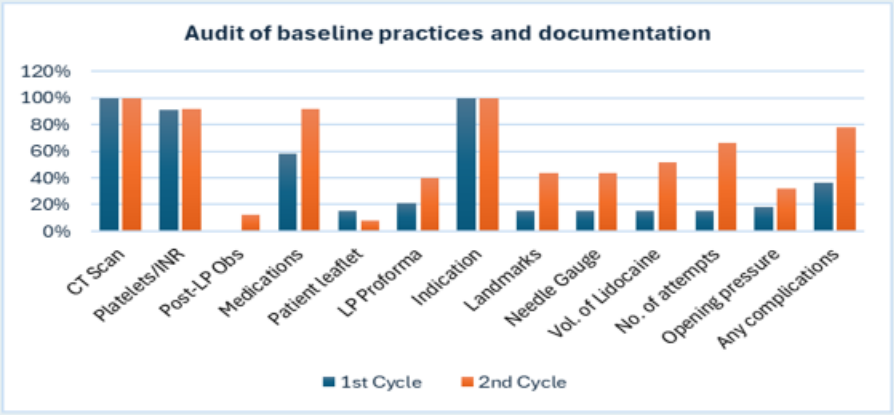


*Figure 3: Audit cycles and results*

| JCF Teaching Survey | Pre- | Post - | P value |
|---|---|---|---|
| LP Indications | 3.33 | 4.3 | 0.0004 |
| LP Contraindications | 3.63 | 4.53 | 0.0003 |
| Interpreting CSF | 3.47 | 4.47 | 0.0009 |
| Consenting patients | 4.2 | 4.53 | 0.0002 |
| LP Practical Skills | 2.33 | 4.27 | 0.008 |

*Figure 4: JCF pre and post teaching survey*


*Figure 5: ABCDs poster*

## CONCLUSION

- Improved post teaching knowledge reported by JCFs in all domains
- 5 JCFs became LP competent within 4 months
- Ease of procedure set up
- Further room for improvement, particularly in documentation and use of leaflets.

## REFERENCES

1. Lumbar Puncture : 2023 Standard Operating Procedure Leicester Hospital
2. Dodd, Katherine Claire, Emsley, Hedley C A, Desborough, Michael J R and Chhetri, Suresh (2018) Periprocedural antithrombotic management for lumbar puncture: Association of British Neurologists clinical guideline.Practical Neurology. ISSN 1474-7758

# Chlorine-Induced Lung Injury From Hot Tub Exposure

Rafid Mustafa, Mohamed Gadallah, Alaeldin Elfaki, Bassey Asuquo

## Introduction

Chlorine is a green-yellow gas with moderate water solubility that can cause severe respiratory issues, including airway damage, alveolar injury, and pulmonary edema with high exposure. Chronic exposure may lead to bronchiolitis obliterans, reactive airway dysfunction syndrome (RADS), and respiratory upper airway distress (RUDS) [1]. In contrast, hot tub lung (HTL) results from inhaling aerosols contaminated with Mycobacterium avium complex (MAC) from poorly maintained hot tubs [2]. This report describes a case initially diagnosed as HTL, later revised to chlorine-induced lung injury based on the patient's history and investigations.

## Case Presentation

A 65-year-old male presented with a six-month history of worsening shortness of breath, cough, and yellowish phlegm. He had type 1 respiratory failure (oxygen saturation 89% on 3 liters of oxygen) and physical examination revealed bilateral expiratory wheezes and faint basal crepitations, more pronounced on the left.

The patient had been hospitalized 14 days earlier for similar symptoms and diagnosed with bilateral pneumonia and discharged later with oral Antibiotics.

During this admission, a high D-dimer level of 1623 ng/mL raised suspicion of pulmonary embolism (PE). A CT pulmonary angiography (CTPA) showed diffuse ground-glass changes consistent with hypersensitivity pneumonitis (HP) (Figure 1), prompting an exposure history review.

He reported frequent use of a hot tub in an unventilated room with excessive chlorine for seven months. Suspecting hot tub lung (HTL), the respiratory team advised him to stop using it and prescribed 40 mg of prednisolone daily. Sputum cultures showed light yeast growth and no Mycobacterium species. He improved with treatment and was discharged with a tapering steroid regimen.

After discharge, he abstained from the hot tub and remained symptom-free. Pulmonary function tests were normal, and a follow-up CT showed significant resolution of the ground-glass opacities and nodularity (Figure 2). The likely diagnosis was either chlorine-induced bronchiolitis obliterans or chlorine-induced hypersensitivity pneumonitis-like reaction, supported by a normal prior CT scan from a year ago.

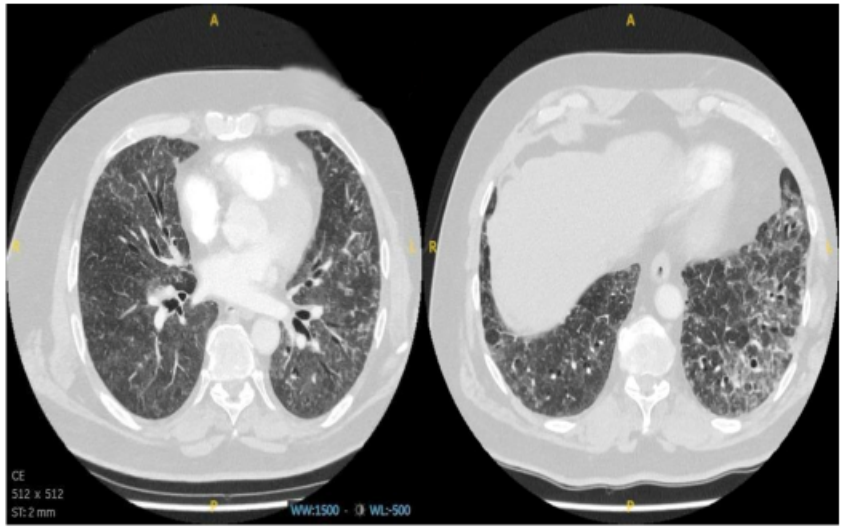


**Figure 1: CTPA from current admission**

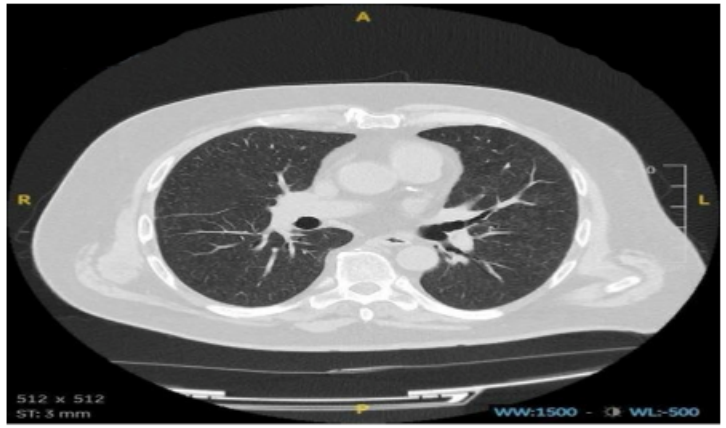


**Figure 2: Repeat chest CT three months post-admission**

## Conclusion

This case underscores the diagnostic complexities of distinguishing between HTL and chlorine-induced lung injuries. Despite the lack of a lung biopsy, the clinical evidence supports a diagnosis of chlorine-related lung injury, highlighting the need for careful consideration of exposure history and diagnostic criteria in respiratory conditions.

## References

1. Hoyle GW, Svendsen ER. Persistent effects of chlorine inhalation on respiratory health. Ann N Y Acad Sci. 2016 Aug;1378(1):33-40. doi: 10.1111/nyas.13139. Epub 2016 Jul 6. PMID: 27385061; PMCID: PMC5063681.
2. Falkinham JO 3rd. Mycobacterial aerosols and respiratory disease. Emerg Infect Dis. 2003 Jul;9(7):763-7. doi: 10.3201/eid0907.020415. PMID: 12890314; PMCID: PMC3023421.

# RENAL CORTICAL NECROSIS (RCN) IN ACUTE PANCREATITIS – A CASE REPORT

Dr Raniya Palliyedath, Dr Pusapati Uma Sirisha
Dr Ram Prabahar , Dr Jayanivash Jayam

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## INTRODUCTION

Renal cortical necrosis (RCN) is a catastrophic condition characterised by patchy to total necrosis of renal cortex leading to irreversible renal impairment in most cases.[1] The pathophysiology is due to prolonged hypoxia of the cortical tissue, the aetiology including sepsis, pancreatitis, snake bite and obstetric complications (eclampsia, and Anti partum haemoorahage.[2] This is a case report presents a 24-year-old male with acute pancreatitis complicated acute kidney injury (AKI) progressing to Dialysis dependent CKD secondary to Renal cortical Necrosis.

## CASE PRESENTATION

A 25-year-old male presented with severe abdominal pain, multiple episodes of vomiting, reduced urine output, and occasional loose stools. He had a prior history of acute pancreatitis (AP) and acute kidney injury (AKI) from a previous hospitalisation, where the cause was undetermined. On admission to our tertiary care center, he was diagnosed with AP and AKI (KDIGO Stage 3), with a creatinine level of 14.49 mg/dL. Due to anuria, he underwent urgent haemodialysis. Imaging studies, including USG and CT abdomen, confirmed AP . The patient was managed with antibiotics, supportive care, and dialysis and he symptomatically improved, remained anuric. In view of anuric renal failure for more than 4 weeks while renal biopsy revealed renal cortical necrosis (RCN).

One month later, he was readmitted with similar symptoms, and repeat imaging showed bulky pancreas. Ultrasound detected gallstones and cholecystitis features. The possibility of biliary pancreatitis was considered and he eventually ERCP and laparoscopic cholecystectomy. However, the next few months, he had several readmissions for recurrent episodes of pancreatitis. The work up of genetic causes of pancreatitis was negative. He was diagnosed as idiopathic acute pancreatitis. He continues to require maintenance hemodialysis support.

| Lab Investigations | Patient Values | Biological Reference |
|---|---|---|
| Hemoglobin (Hb) g/dL | 8.3 g/dL | 13.8-17.2 g/dL (Male) |
| Urea mg/dL | 129 mg/dL | 7 – 20 mg/dL |
| Creatinine mg/dL | 14. 49 mg/dL | 0.7–1.3 (mg/dL) |

**Table 1: Laboratory Findings of Case Report**

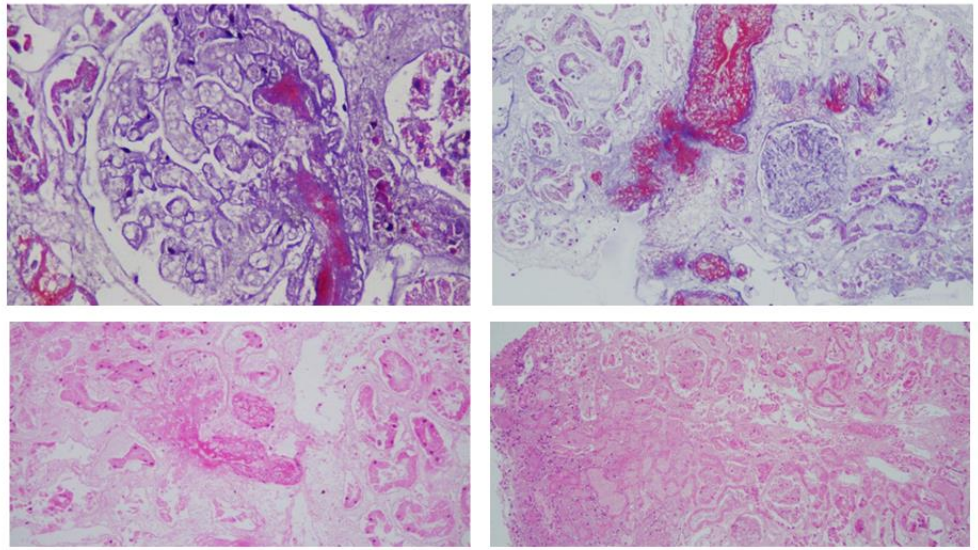

**Figure 1: BIOPSY:** Under light microscopy: There are six glomeruli in the necrotic cortex. Fibrin thrombus occludes the efference arteriole in one glomerulus. Fibrin thrombi occlude the interlobular arteries. Final diagnosis: Renal Cortical Necrosis.

## DISCUSSION

Renal cortical necrosis (RCN) is a rare but severe complication of hypoxic renal injury, secondary to ischemic damage of the renal cortex due to systemic hypoperfusion. Based on renal histology, renal necrosis can be classified into (1) Diffuse cortical necrosis: The columns of bertin are affected by confluent global cortical deterioration. (2) Patchy cortical necrosis: Up to one-third to half of the total cortical tissue may be affected by a contiguous region of cortical necrosis. Idiopathic pancreatitis (IAP), where no clear cause is identified, accounts for 10-30% of pancreatitis cases. Potential causes include undetected microlithiasis, genetic mutations, or sphincter of Oddi dysfunction. (6) In severe pancreatitis, systemic inflammatory response syndrome (SIRS), hypovolemic shock, and microthrombi formation can contribute to renal ischemia, leading to RCN. This case highlights the complexity of managing AP, emphasizing early detection of high-risk patients and timely intervention to prevent multi-organ failure and severe complications like RCN.

## CONCLUSION

RCN is a rare histopathological entity, often leading to irreversible renal injury. Our patient developed extensive cortical necrosis secondary to 1st episode of acute pancreatitis and progressed to dialysis dependent renal failure. In view of recurrent episodes of pancreatitis even after a year of primary diagnosis, he continues to on hemodialysis being unfit for renal transplantation.

**Keywords:** Renal Cortical Necrosis (RCN), Acute Pancreatitis, Acute Kidney Injury.

# CASE REPORT ON HYPERTRIGLYCERIDEMIA INDUCED ACUTE PANCREATITIS

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2Senior Consultant and Head - Nephrology, SIMS Hospitals, Chennai, India

3Consultant Interventional Nephrology - SIMS Hospitals, Chennai, India

## INTRODUCTION

Hypertriglyceridemia-induced acute pancreatitis (HTG-AP) is an unusual cause of pancreatitis secondary to hypertriglyceridemia and represents roughly 1-3% of the total number of acute pancreatitis cases.[1] HTG-AP is frequently linked to genetic predispositions, obesity, diabetes, and specific drugs.[2] Swift diagnosis and treatment with lipid lowering modalities including extra corporeal therapy is crucial are complications of this illness with high mortality rates.[3]

## DISCUSSION

A rare yet dangerous illness that can have a major morbidity is hypertriglyceridemia-induced acute pancreatitis (HTG-AP). Increased amounts of triglycerides cause free fatty acids to be released, which causes inflammation and necrosis in the pancreas.[4] For the best results, early diagnosis and intensive treatment including lipid-lowering modalities are essential.[5]

## CONCLUSION

Overall, hypertriglyceridemia-induced acute pancreatitis though rare has high degree of morbidity and mortality. Early identification and management with extra corporeal therapy helped in complete recovery in our patient. The patient continues to be in our surveillance and has not had a recurrent episode of pancreatitis since lowering of triglyceride levels.

## CASE PRESENTATION

A 53-year-old male, known case of type II diabetes mellitus, alcoholic, with one episode of acute pancreatitis 3 months prior, presented to emergency room (ER) with abdominal pain followed by giddiness and excessive perspiration. On arrival he was found to have severe hypotension and was immediately resuscitated with fluids and ionotropic supports. Preliminary evaluation revealed severe metabolic acidosis, anemia, leukocytosis, renal failure, hepatitis with elevated serum amylase & lipase levels. Ultrasound abdomen showed normal sized kidneys with gaseous shadow around pancreas. Patient's general condition deteriorated, he went on to require triple ionotropic supports and invasive ventilation. He was shifted to intensive care unit for further care.

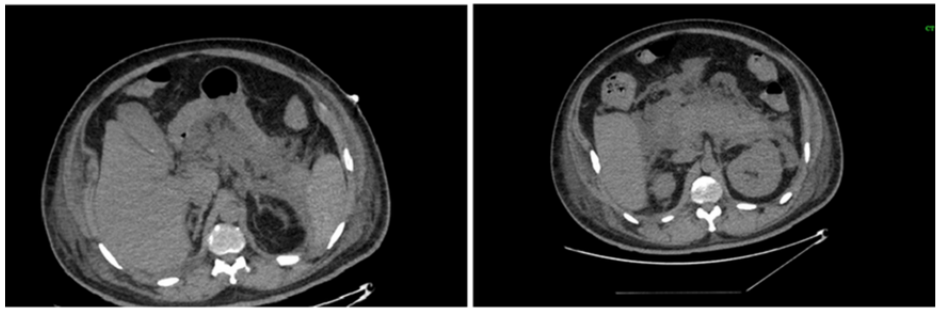

***Figure 1: CT Abdomen***

CT abdomen imaging showed features suggestive of acute pancreatitis. Further evaluation revealed serum triglyceride levels of more than 6000mg/dl. In view of severe metabolic acidosis and oliguric renal failure patient was started on CRRT. Once diagnosis of hypertriglyceridemia was made, he underwent therapeutic plasma exchange together with CRRT. After 3 sessions of therapeutic plasma exchange, his triglyceride levels improved to less than 1000 mg/dl and from then on, he was switched to oral statin therapy. Patient's GCS and renal failure gradually improved and he was weaned of ventilatory support and CRRT. He had complete recovery of kidney function. He was gradually started on oral medications. Patient was subsequently discharged and currently on outpatient follow up.

| Laboratory Investigations | Patient Values |
|---|---|
| **Liver Function Test (LFT)** | |
| • **Total Protein** | 5.77 |
| • **Serum Albumin** | 2.51 |
| • **A/G Ratio** | 0.77 |
| **Serum Amylase** | 2320 |
| **Serum Lipase** | 1990 |
| **Basic Renal Package** | |
| • **Urea** | 164 |
| • **BUN (Blood Urea Nitrogen)** | 76.64 |
| • **Creatinine** | 9.44 |
| **Blood Sugar** | |
| • **Fasting Blood Sugar** | 156 |
| • **Post Prandial Blood Sugar** | 295 |
| **Lipid Profile** | |
| • **VLDL Cholesterol** | 235 |
| • **Triglycerides** | 6225 |

**Table 1: Laboratory Findings of Case report**

Genetic work up for hypertriglyceridemia was negative.

**Serology C/S:** Positive Candida albicans (<1000000 CFU/ml) susceptible to Fluconazone and Voriconazole

**Key words:** Hypertriglyceridemia, Acute Pancreatitis, Therapeutic Plasma Exchange, Oral Statin Therapy.

Presented at Med+ 2024 Conference - Poster Competition. Theme: Navigating the path of Clinical Progress. Presenting Author: Dr Raniya Palliyedath.

MED+ 21 - 22 November

# Identifying Barriers to Clinical Academic Careers: Results of the National Evaluation of Research Teaching in UK medical Students (NERTS)

R.V. KUMAR[1], C. COLE[1], J. VINCENT[1], P.R. KUMAR[2,3], N.R. EVANS[1,4]
[1]University of Cambridge [2]University Hospital Coventry & Warwickshire [3]Warwick Medical School
[4]Department of Clinical Neurosciences, University of Cambridge

*Funded by Academy of Medical Sciences INSPIRE grant*

## INTRODUCTION

- There is a critical **shortage** of **academic clinicians** in the UK.
  - Between 2010 and 2022 the number of senior clinical lecturers fell by 25%[1].
- This issue is compounded by a **lack of diversity**.
  - Women and ethnic minorities make up only 25% and 13% of UK professors respectively[1].
- The root of these issues can be tracked to the **attitudes** of **medical students** towards **engagement in research**.

## AIM

To identify students' **perceived barriers** to **engagement in research**, and understand the impact of **demographic characteristics** on these perceptions.

## METHOD

A 59-item structured questionnaire was nationally distributed between November 2023 - January 2024 amongst all UK medical schools.

## RESULTS

**144 students**, representing 14 ethnicities, responded from six UK medical schools.


Figure 1

Students admitted to **poor engagement in research**.


Figure 2

Students identified **4 key barriers**:

79.2% supported that **national research teaching** could help overcome these obstacles, preparing them for research and their future academic career.

### 1

Poor **knowledge** of research types


Figure 4

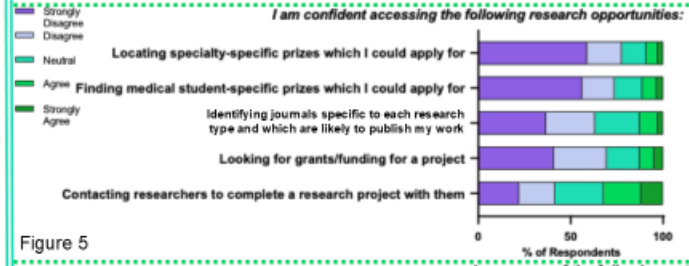


Figure 5

### 2

Lack of awareness of **opportunities** to get involved in research

### 3

Insufficient **understanding** of research as a career

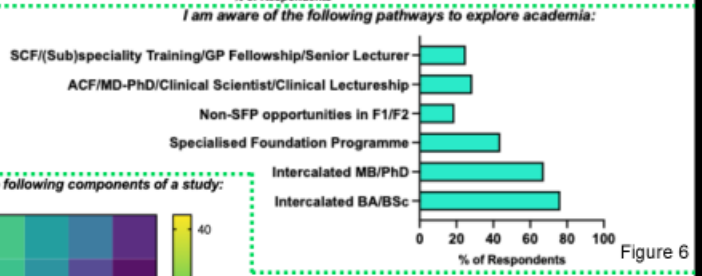


Figure 6

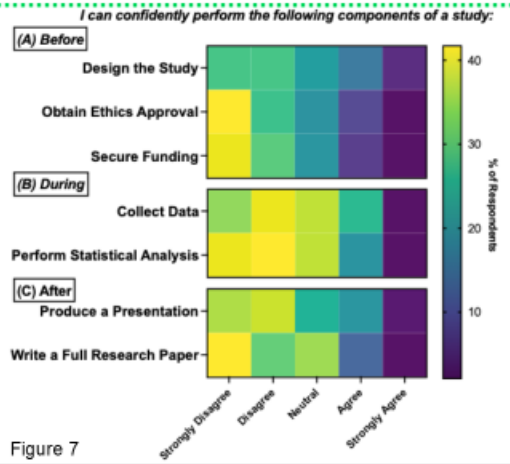


Figure 7

### 4

Inadequate research **skills**

**Non-Caucasians** reported **stronger obstacles** preventing them from getting involved in research, compared to Caucasians (B= 6.1%, 95% CI: 0.03-12.14%).

## CONCLUSION

- Students widely report insufficient research **understanding**, **knowledge**, **skills**, and **opportunities** as **barriers** preventing their engagement in research.
- These feelings are **heightened** in those of **non-Caucasian** ethnicity.
- There is a high level of demand amongst students for **national standardised training** in clinical research.

## FUTURE WORK

Develop, deliver and evaluate a **standardised high quality teaching programme** to address the gap in research teaching in core medical school curricula.

**References**
1. *Medical Schools Council*. Clinical academic survey. https://www.medschools.ac.uk/clinical-academic-survey.

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# Arteriovenous Malformation Presenting as Chronic Cough and Progressive Dyspnoea in a 69-yer old Male

Dr Razan Ghareeb MBBS, MD[1,2]; Dr Sobia Chaudhary MBBS, MD[1]; Dr Evangelos Skondras, MBBS[1]; Dr Jaymin Morjaria[1,3]

1. Dept of Resp Medicine, Harefield Hospital, GSTT; 2. AlBalqa Applied University, Salt, Jordan; 3. University of Brunel, London

**Abstract**

Pharyngeal arteriovenous malformations (AVMs) are rare vascular anomalies that can present with a variety of symptoms. This case details a 69-year-old male with chronic cough and progressive dyspnea. Despite initial management, further investigations led to the discovery of a large pharyngeal AVM. This highlights the need for a thorough diagnostic evaluation and interdisciplinary collaboration in managing such complex cases.

## Clinical History

### Patient Background

- 69-year-old male, non-smoker.
- History of ischemic heart disease, dyslipidemia.
- Chronic cough (6 months), progressive dyspnea.
- Cough exacerbated by deep breathing, exertion, eating, and talking.
- Occasional chest tightness, wheezing, reduced exercise tolerance.

## Initial Investigations

### Physical Exam

- Mild rhinorrhea but no sinusitis symptoms.
- No significant abnormalities detected in initial clinical evaluation.

### Cardiac Findings

- Initial cardiac workup showed cardiomegaly.

### Symptoms Progression

- Persistent cough and worsening dyspnea despite management.
- No red flag symptoms such as weight loss, hemoptysis, or night sweats.

### Imaging - Sinus CT Findings (Figure 1)

- Partial opacification of ethmoid cells.
- Deviated bony nasal septum.
- Important Finding: Soft tissue density lesion in the right parapharyngeal space extending into the oropharynx and nasopharynx.

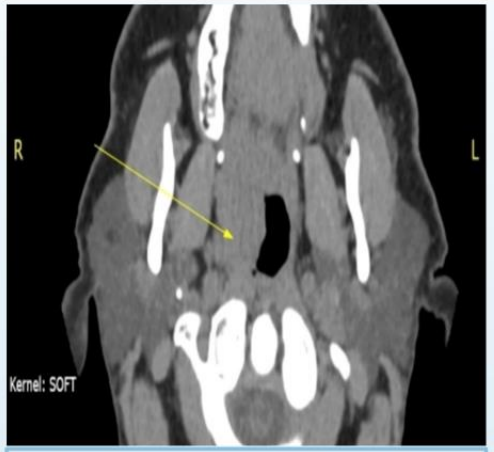



**Figure 1 presents a computed tomography (CT) scan of the paranasal sinuses**

Impression:

- Suspicion of a sinister lesion based on soft tissue mass.
- Further evaluation needed for precise diagnosis.

### Imaging - CT Chest Findings

- Interstitial lung abnormality (ILA) changes detected.
- No significant explanation for persistent symptoms.
- V/Q Scan: No pulmonary embolism detected.

### Functional Assessment

**6-Minute Walk Test**

- Distance walked: 363 meters.
- No desaturation during the test.
- Patient reported subjective breathlessness.

- **Arterial Blood Gas**
- pH: 7.42 pCO2: 4.97 kPa
- pO2: 13.2 kPa O2 Saturation: 96.1%

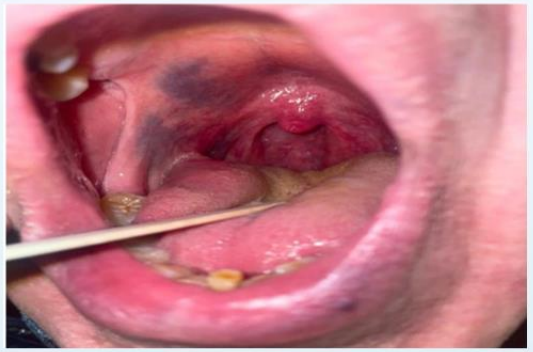


Figure 2 illustrates the gross appearance of the oropharynx.

### ENT Examination

**Referral to ENT**

- Identified a mass in the right posterior nasal cavity.
- Dilated blood vessels suggestive of a vascular malformation (Figure 2).

**Diagnosis**

- Pharyngeal AVM confirmed.

**MRI/MRA (Magnetic Resonance Angiography) (Figure 3). Findings:**

- Confirmed the presence of an AVM in the pharyngeal region.
- Clear visualization of the lesion and its vascular involvement.

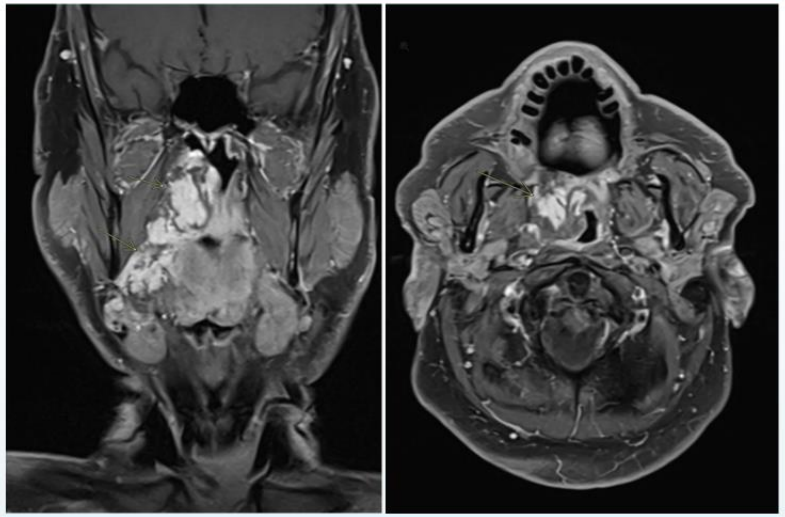


Figure 3 displays a T2 FLAIR MRI scan.

### Treatment:

- Initiated on Sirolimus therapy.
- Mechanism: Inhibits PI3K/AKT/mTOR pathway, reducing lesion size and symptoms

### Key Points:

- Early identification and comprehensive work-up are essential in managing rare conditions like pharyngeal AVMs.
- Interdisciplinary collaboration leads to better outcomes.
- Ongoing follow-up required to monitor response to therapy, complications and persisting symptoms.

# Improving Advance Care Planning in a geriatrician led community service

**Authors: Muhammad Zaid Kureeman, Rena Kaur, Eleanor Warren, Ania Barling, Mary Ni Lochlainn**

Guy's and St Thomas' NHS Foundation Trust

## Introduction:

- Advance care planning (ACP) is the discussion of future care plans with patients usually approaching their last year(s) of life.
- ACP gives opportunity to discuss a patients prognosis and understand what's important to them, addressing their wishes including preferred place of care/death.
- Despite awareness of ACP, opportunities are often missed. We aimed to assess whether ACP rates could be improved in our community via our geriatrician-led outreach "@ Home" service.

## Methods:

**Dec 2023**

We defined those appropriate for ACP as those with a Clinical Frailty Score (CFS) of ≥ 6, or a comorbidity that carried a likely prognosis of less than a year.

**Intervention**

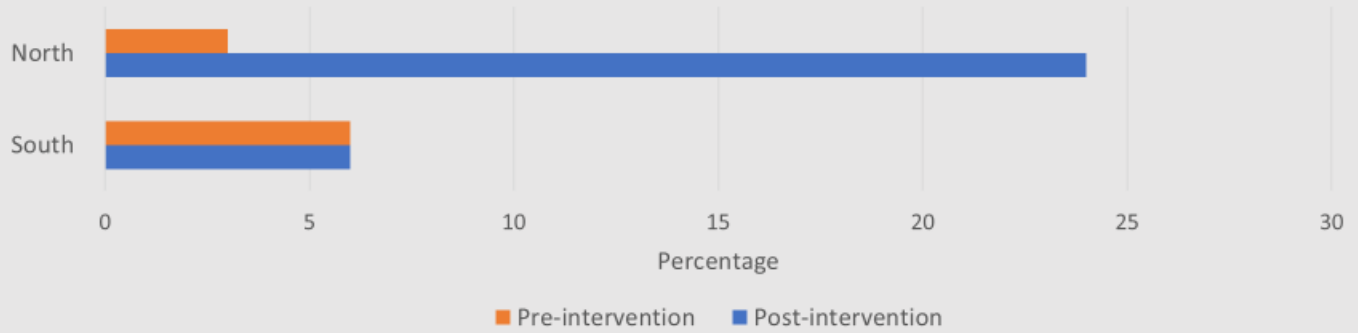
Structured teaching programme, posters and a lanyard to prompt clinicians on visits to discuss ACP with appropriate patients. Consultants would champion ACP discussions and prompt/encourage staff to do them where appropriate.

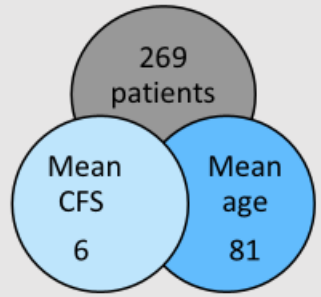
**June 2024**

The @Home service is split into a North and South service. Interventions were only implemented in the North. The South was used as a control.

## Results:

Figure 1: ACP rates pre- and post-intervention




- There were 136 and 133 patients for December '23 (pre-intervention) and June '24 (post-intervention) respectively. Excluding those not appropriate for ACP leaves n=93 at both time points.
- ACP increased from 5% to 24% (p<0.001) for the intervention area, and there was no significant change for the South (6% to 6%, p=0.54)
- CFS was significantly associated with having ACP (OR 1.50; p=0.003), while age was not (OR 0.99; p=0.766).

## Conclusion:

- Our simple and low-cost intervention significantly improved ACP engagement.
- We aim to continue these measures in the North service and then expand to implementing these measures in the @Home South Service.
- We hope to achieve a culture shift amongst our community services, so that ACP is routinely considered in appropriate patients.

# Introduction of resuscitation team meetings

Dr Robert Hurwitz Bremner, Dr Caroline Yeldho, Dr Anne Williamson, Dr Greta Economides, Lauren Welsh (tACP) - Guy's and St Thomas' NHS Foundation Trust, London. *Correspondence: Robert.Bremner@gstt.nhs.uk*

**Introduction**

Effective communication is crucial to team performance, safety, and outcomes. Resuscitation huddles are recommended at the beginning of each period of duty (Resuscitation Council UK 2023).

We established twice-daily resuscitation huddles at Guy's and St Thomas, attended by emergency bleep holders. Previously, team members would meet at the bedside of unwell patients. This gave no opportunity for team members to meet; establish competencies; assign roles; and discuss staffing and equipment. Ultimately, there was no cohesive team response to arrests.

**Methods**

Resuscitation huddles were established twice-daily at Guy's and St Thomas. A proforma was filled out to check staffing, equipment issues, awareness of equipment locations, plan for simultaneous arrests, skills mix, and identify development objectives. Anonymous surveys were conducted across staff undertaking emergency on-call shifts, prior to, and 2 months after, implementation. We asked about leadership, perceived preparation, and recent experiences in emergencies on a 5-point Likert scale.

**Results**

*i) Attendance proforma:* Proformas were consistently filled in, with good attendance across both sites. There was more variability in attendance at STH, and anaesthetics were not always able to attend across both sites. Leadership, role allocation, staffing/IT/equipment issues, and skill mix were discussed consistently.

*ii) Survey;* We received 39 survey responses pre and 32 responses post resuscitation huddle implementation. There was significant improvement in the establishment of a leader (5.1 to 81.3%); clinician confidence in their roles (30.8 to 96.9%); and perception of leadership (60 to 71.9%). Other outcomes including clarity of communication, clarity of equipment location, and number of team members, remained approximately constant. Development goals were frequently identified. 84% of survey responders felt that huddles provide learning opportunities. Educational benefit, particularly for junior clinicians, was commented on.

**Discussion**

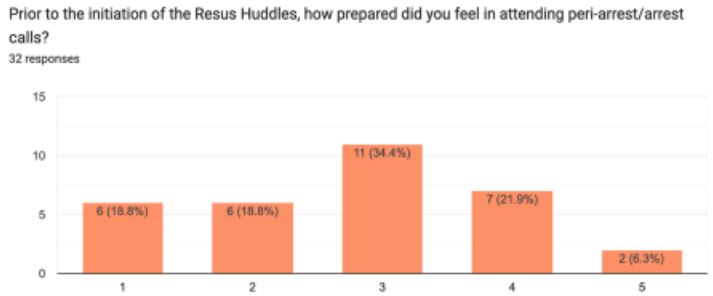
Implementation of resuscitation huddles has had a positive impact for members of the emergency team. Areas of improvement included introductions, identifying a leader and increased confidence of team members in their role during emergencies. Although this did not translate into marked improvement in communication during arrests, overall clinicians feel more prepared when attending arrests. There is also a significant benefit in the identification of educational opportunities within the arrest team, in particular for junior clinicians.

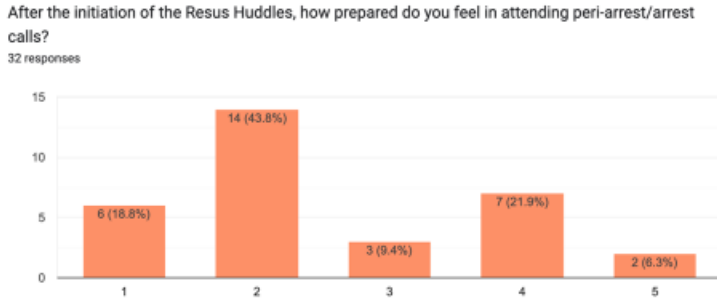
**Conclusion**

Implementation of resuscitation huddles has led to measurable benefits for confidence, leadership and development. Next steps will be: further development ensuring huddles are sustained and remain relevant; exploring how to make them more useful for attendees; formalising a debrief process; and considering routes to measure the impact on patient outcomes.

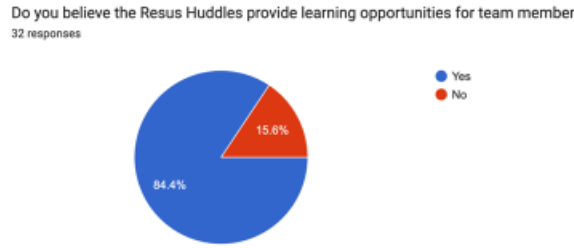
**References:** Adult advanced life support Guidelines. Resuscitation Council UK. 2021: *https://www.resus.org.uk/library/2021-resuscitation-guidelines/adult-advanced-life-support-guidelines1*.

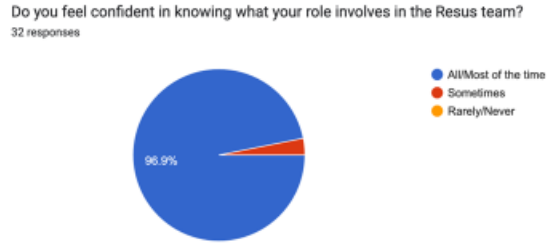
Guy's and St Thomas' NHS Foundation Trust



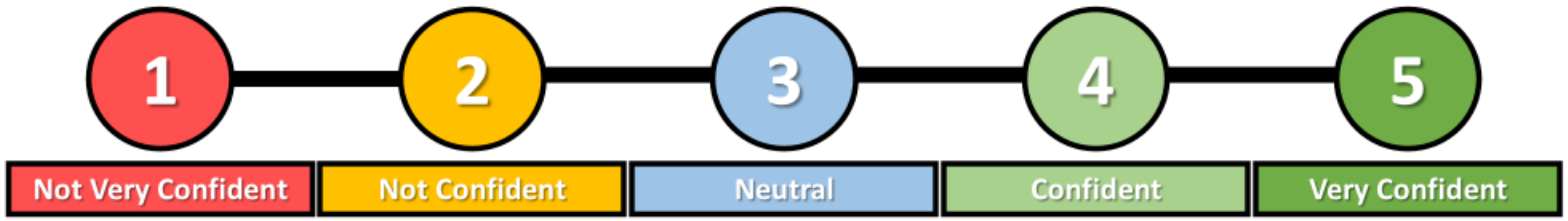

Post-intervention survey; 1 = very prepared; 5 = not very prepared at all



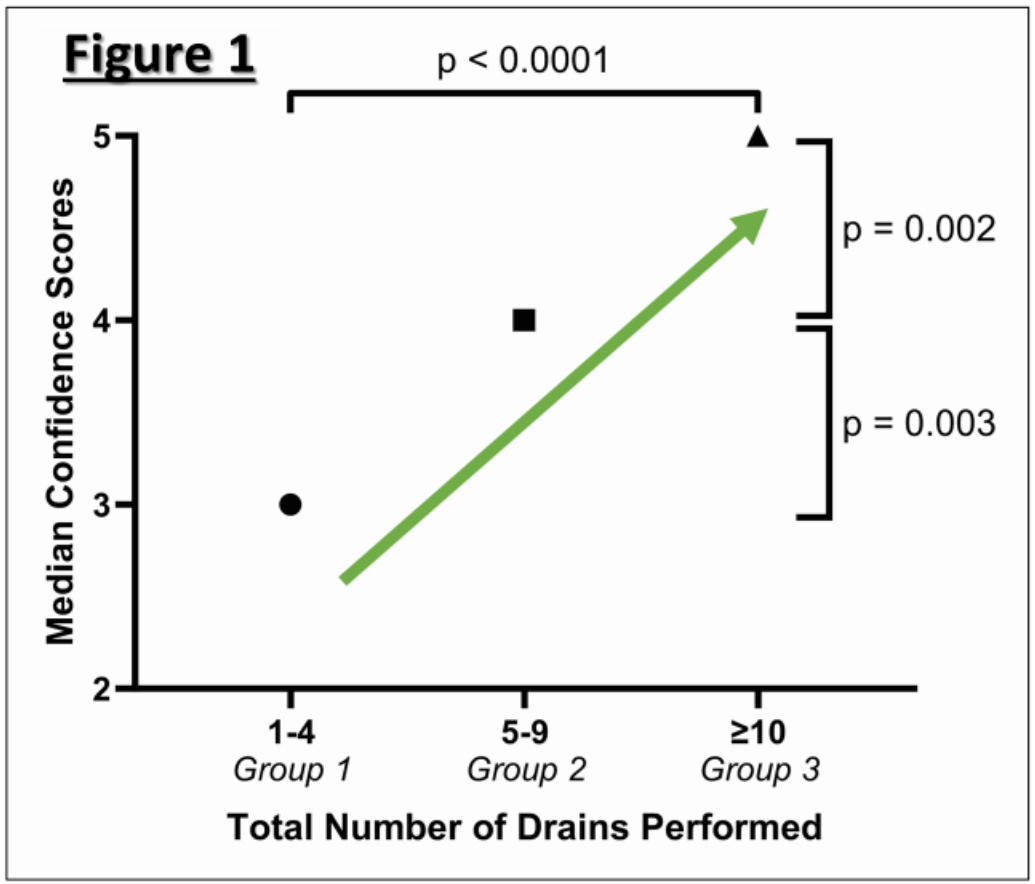
# Therapeutic Paracentesis

## **Doctors' Procedural Confidence** and its relationship with **Minimum Number of Procedures Performed (MNPP)**, and **Implications for Trainee Assessment**.




51 survey responses.
41 included.
10 excluded.

**Figure 1**




**IMPORTANT TAKEAWAYS**

**The more drains performed the more confident the operator**

**The confident operator has performed at least 5 drains**

**MNPP can be a useful tool in trainee procedural assessment**

Author: Dr Rohan Butt ( rohan.butt@nhs.net )

# From Skin to Heart: Staphylococcus Lugdunensis and Its Unexpected Role in Endocarditis

**Drs Katharine Powell, Rose Ameli and Tina Ameli**

Lewisham and Greenwich NHS Trust

## INTRODUCTION

Infective endocarditis (IE) caused by *Staphylococcus lugdunensis* is rare but aggressive, often leading to severe complications such as valve destruction, heart failure, and embolic events.

This case details a 24-year-old previously healthy female who developed *S. lugdunensis* endocarditis, complicated by aortic regurgitation, abscess formation, and arterial thrombi.

## CASE PRESENTATION

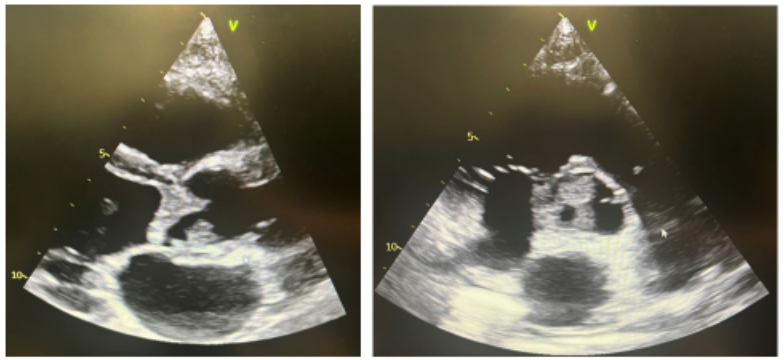
24 F, nil PMHx, nil regular medications, nil recreational drugs use. Multiple presentations over a two-month period:

- July 2024 –swelling and erythema of the left mid-foot. Treated for cellulitis with flucloxacillin.
- August 2024 – persistent fevers, suprapubic tenderness. Treated for UTI with nitrofurantoin.
- September 2024 – admitted with persistent fevers, lower abdominal pain and shortness of breath.

**O/E:** Tachycardic, hypotensive, high-grade pyrexia. Loud systolic and holodiastolic murmurs.

**Initial blood tests:** WCC 14.2, CRP 233, HIV negative.

**US abdomen:** hepatosplenomegaly



Initial TTE revealed an AV cusp vegetation measuring at least 1.5 cm, severe AR, with a normal left ventricular (LV) size and an ejection fraction (EF) of 58%.

## FINDINGS AND COMPLICATIONS

**Blood and Abscess Culture:** Staphylococcus lugdunensis

Despite high dose flucloxacillin, she developed acute heart failure necessitating non-invasive ventilation.

**Emergency mechanical aortic valve replacement and repair of interventricular septal abscess** was performed. Extensive vegetations on the aortic leaflets and perforations in the non-coronary and right coronary cusps were seen.

Developed worsening left leg weakness post-operatively.
**CT head and spine**: Nil spinal or intracranial abscesses.
**CT angiogram left leg**: multifocal arterial thrombus in left common femoral artery.

## DISCUSSION

**Diagnostic Challenges:**

- Initial presentations of cellulitis and UTI delayed the recognition of IE. In patients representing with persistent fevers, consider IE.

**Under-recognised and Aggressive Pathogen:**

- *S. lugdunensis* is part of normal skin flora but is rarely a contaminant. It is associated with large vegetations, abscess formation, rapid valvular destruction, and poor prognosis, often necessitating surgery. A positive blood culture should prompt immediate evaluation for IE and early surgical consideration for those with left-sided valvular involvement.

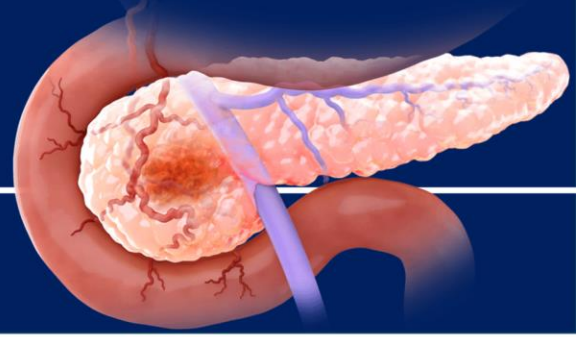
**Thromboembolic Complications:**

- Septic emboli can lead to multifocal arterial thrombi. Neurological symptoms should prompt investigation for septic emboli.

## REFERENCES

1. Patel R. Frequency of isolation of Staphylococcus lugdunensis among staphylococcal isolates causing endocarditis: a 20-year experience. J Clin Microbiol 2000; 38: 4262–4263.
2. Bieber L. Staphylococcus lugdunensis in several niches of the normal skin flora. Clin Microbiol Infect. 2010;16:385e388.
3. Liu PY. Staphylococcus lugdunensis infective endocarditis: literature review and analysis of RFs. J Microbiol Immunol Infect. 2010 Dec;43(6):478-84.
4. Heilbronner S. Staphylococcus lugdunensis: a skin commensal with invasive pathogenic potential. Clin Microbiol Rev. 2020;34(2)
5. Non LR. The occurrence of infective endocarditis with Staphylococcus lugdunensis bacteremia: a retrospective cohort study and systematic review. J Infect. 2017 Feb;74(2):179-186.

# Does Adjuvant Chemotherapy Provide a Survival Benefit in Elderly Patients (≥70 years) with Pancreatic Cancer? A Retrospective Cohort-study



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## INTRODUCTION

- Pancreatic cancer most commonly affects elderly patients ≥ 70 years.
- Standard of care is curative surgical resection and adjuvant chemotherapy (AC). Elderly patients have historically been considered too frail to benefit from AC[1]. Emerging research suggests they can tolerate AC, and it benefits their overall survival (OS) and relapse-free survival (RFS), similarly to how it benefits younger patients[2].
- Research question: are elderly patients in a tertiary hepatobiliary centre receiving AC, and do they benefit from its use, like younger patients?

## METHODS AND MATERIALS

- Retrospective data collection from electronic records: all pancreatic ductal adenocarcinoma patients at Manchester Royal Infirmary, UK (January 2015 to December 2020).
- Information included baseline characteristics, preoperative assessment, histopathology, postoperative complications and course, and adjuvant chemotherapy use.
- Statistical analysis was performed using Jamovi 2.3 .

## RESULTS

- Total identified patients = 151
- Two patients excluded due to incorrect histopathological diagnosis.
- Total included patients = 149
- Overall AC = 105/149, AC rate = 70.5%
- No difference in baseline characteristics or histopathological features..

**Young vs Elderly patients**

| | <70 (n=82) | ≥70 (n=67) | P-value |
|---|---|---|---|
| **Received AC Y (%)** | 60 (73) | 45 (67) | 0.42 |
| **RFS mean months (sd)** | 16 (18.1) | 20.2 (21.5) | 0.19 |
| **OS mean months (sd)** | 25 (19.8) | 26.3 (20.3) | 0.74 |
| **Complications (Yes) n (%)** | 44 (54) | 31 (47%) | 0.38 |
| **Recurrence (Yes) n (%)** | 64 (78) | 51 (76) | 0.78 |

| Reason patients did not receive adjuvant chemotherapy | N=44 (%) |
|---|---|
| Recurrence | 13 (30) |
| Post-Op Complication | 9 (20) |
| Died | 8 (18) |
| No Record | 5 (11) |
| Declined Chemo | 5 (11) |
| Frailty | 3 (7) |
| No Malignancy | 1 (2) |

**Elderly patients**

| ≥70 | Yes AC (N=45) | No AC (N=22) | P-value |
|---|---|---|---|
| **RFS mean months (sd)** | 23.8 (21.1) | 12.9 (20.7) | 0.05 |
| **OS mean months (sd)** | 31.4 (18.9) | 15.9 (19.4) | <0.01 |
| **Complications n (%)** | 19 (43) | 12 (55) | 0.38 |
| **Recurrence** | 37 (82) | 14 (64) | 0.09 |

## CONCLUSIONS

- Like younger patients, elderly patients should receive adjuvant chemotherapy (AC) as they benefit from its use.
- In our trust, AC use was equal in younger and elderly. Elderly patients treated with AC had OS benefit compared to those without AC.
- Retrospective results should be interpreted with caution.
- The most common reason for not receiving AC was recurrence.
- A large, prospective randomised trial is needed to clarify clinical benefits and health economic benefits.

## REFERENCES

1. Nagrial AM, Chang DK, Nguyen NQ, Johns AL, Chantrill LA, Humphris JL, et al. Adjuvant chemotherapy in elderly patients with pancreatic cancer. British Journal of Cancer. 2014;110(2):313-9.
2. Malik AK, Lamarca A, Siriwardena AK, O'Reilly D, Deshpande R, Satyadas T, et al. The Influence of Patients' Age on the Outcome of Treatment for Pancreatic Ductal Adenocarcinoma. Pancreas. 2020;49(2).

# Standardisation of Lymph Node Station Labelling in Pancreaticoduodenectomy: Findings from a Two-Stage Clinical Audit and Quality Improvement Project (QUIP)

NHS Manchester University NHS Foundation Trust

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## INTRODUCTION

- Pancreatic cancer is 5th most common cause of cancer death in the UK[1]. Increased lymph node (LN) spread of pancreatic ductal adenocarcinoma (PDAC) indicates worse prognosis[2]. It is vital to label LN stations according to JPS classification[3] (Figure 1) during surgery to identify pattern of spread. Our previous clinical audit found LN station labelling was suboptimal at Manchester Royal Infirmary , UK. An educational QUIP was undertaken.
- Research question: are LN stations being labelled according to JPS classification after an educational QUIP?

## METHODS AND MATERIALS

- Retrospective data collection (January 2015 to December 2020) PDAC patients at Manchester Royal Infirmary. Baseline characteristics, preoperative assessment, histopathology, postoperative complications and course.
- Statistical analysis performed using Jamovi 2.3.
- QUIP: interactive educational seminar for HPB MDT (24 attendees) and JPS LN labelling classification system was printed and stuck to surgical theatre walls.
- Second stage retrospective data collection (September 2023 to March 2024) and analysis.

## RESULTS

- Total LN collected: Audit Stage 1 = 152, Stage 2 = 76
- Total patients: Audit Stage 1 = 151, Stage 2 = 28
- No difference in baseline characteristics or histopathological features in Stage 1 or Stage 2

| | Audit Stage 1 | Audit Stage 2 |
|---|---|---|
| **Total patients (n)** | 151 | 28 |
| Patients with lymph node stations separately labelled n (%) | 87(58%) | 24(86%) |
| Patients with ≥15 lymph nodes excised | 119(79%) | 27(96%) |

| | Audit Stage 1 | Audit Stage 2 |
|---|---|---|
| **Total labelled lymph nodes (n)** | 153 | 76 |
| Lymph nodes labelled correctly n (%) | 126 (82%) | 76(100%) |

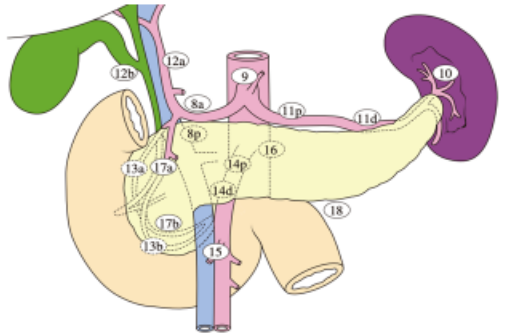


**Figure 1** Japanese Pancreas Society (JPS) Lymph Node Station Labels

## CONCLUSIONS

- In our trust, LN station labelling improved after the introduction of our educational QUIP.
- A large, multicentre trial is required to assess whether LN station labelling is suboptimal nationally and whether a similar QUIP may be appropriate.
- LN station mapping may be able to identify a pattern of spread of pancreatic cancer, further assisting management and prognosis of patients.

## REFERENCES

1. Cancer Research UK. Pancreatic cancer statistics [Available from: https://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/pancreatic-cancer#heading-Zero.
2. Tol JA, Gouma DJ, Bassi C, Dervenis C, Montorsi M, Adham M, et al. Definition of a standard lymphadenectomy in surgery for pancreatic ductal adenocarcinoma: a consensus statement by the International Study Group on Pancreatic Surgery (ISGPS). Surgery. 2014;156(3):591-600.
3. Japanese Pancreas Socitey. Classification of Pancreatic Carcinoma Fourth English Edition: Kanehara& Co Ltd; 2017 [Available from: http://www.suizou.org/pdf/Classification_of_Pancreatic_Carcinoma_4th_Engl_ed.pdf.

# Femoral Neck Stress Fractures and Relative Energy Deficiency in Sport (RED-S)

AUTHORS
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## INTRODUCTION

**Relative energy deficiency in sport (RED-S)** : occurs when athletes have energy availability imbalances either due to low input or excessive expenditure.

→ disrupts physiological mechanisms, including bone metabolism
→ increasing the risk of fractures

Femoral neck stress fractures are one type of injury RED-S athletes are pre-disposed to, especially if their main discipline is endurance based.

Femoral neck stress fractures represent 5% of all stress fractures.

Femoral neck stress fractures

**Compression sided** *(figure 1)*

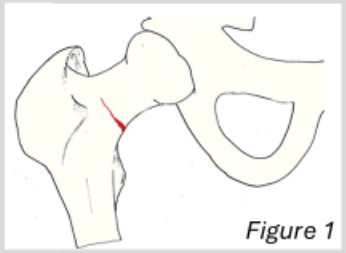


*Figure 1*

- Low risk for complication
- Most successfully managed with relative offloading and gradual return to sport with appropriate rehabilitation.

**Tension sided** *(figure 2)*

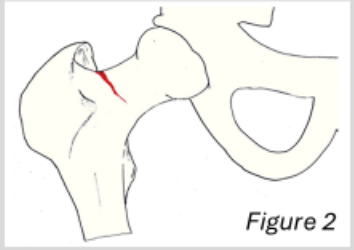


*Figure 2*

- High risk due to limited blood flow
- Potential for progression to a complete fracture and/or malunion if not managed carefully.

This risk particularly applies to adolescent athletes therefore it is essential for proactive diagnostic evaluation, enabling optimal treatment.

## CASE STUDY

34yo F amateur marathon runner developed insidious left hip pain.

Investigations in the community did not identify a cause.

A few months later the patient attended SEM clinic with worsening global hip pain and difficulty weight bearing without crutches.

The patient described a period of significant weight loss and irregular periods a few years ago, which has since normalised.

| **Examination of left hip:** | **Investigations** |
|---|---|
| - Diffuse pain<br>- Tenderness over greater trochanter<br>- Pain on internal rotation<br>- FADIR test positive<br>- Fulcrum test positive<br>- Hop test positive | - Left neck of femur Z score: -0.7<br>- Low ferritin and oestradiol<br><br>- MRI pelvis *(figure 3)*<br>Compression sided incomplete femoral neck stress fracture |

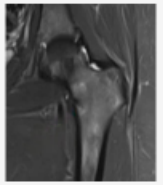


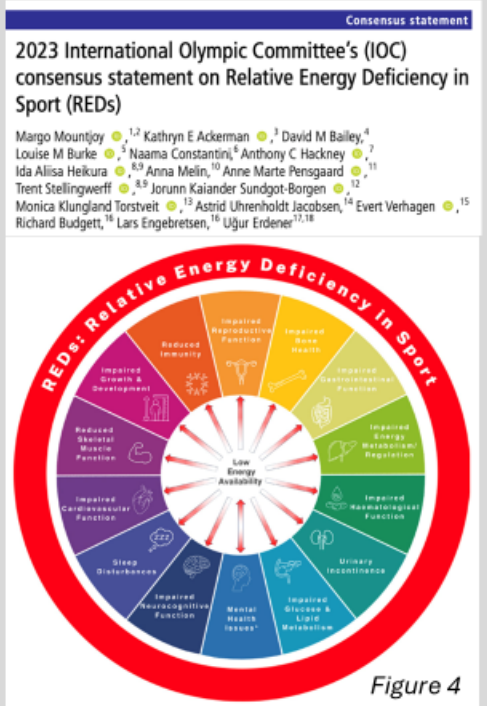
*Figure 3*

*Mild to moderate volume of joint effusion. High-grade marrow oedema is shown in the femoral neck medially extending to the subtrochanteric region.*
*Centred within the marrow oedema there is linear low signal consistent with an established stress fracture. There is mild subperiosteal fluid at this site.*

## CONCLUSION

There are various differential diagnoses (such as genetic, malabsorption diseases and medications) that can predispose patients to developing stress fractures, however, this case report is to highlight the following:

Given the **non-specific presentation** there should be increased clinical suspicion in **high-risk patients** and these patients should have **early imaging beyond plain radiographs** to avoid potential complications.


Consensus statement

2023 International Olympic Committee's (IOC) consensus statement on Relative Energy Deficiency in Sport (REDs)

Margo Mountjoy [1,2] Kathryn E Ackerman [3] David M Bailey [4] Louise M Burke [5] Naama Constantini [6] Anthony C Hackney [7] Ida Aliisa Heikura [8,9] Anna Melin [10] Anne Marte Pensgaard [11] Trent Stellingwerff [8,9] Jorunn Kalander Sundgot-Borgen [12] Monica Klungland Torstveit [13] Astrid Uhrenholdt Jacobsen [14] Evert Verhagen [15] Richard Budgett [16] Lars Engebretsen [16] Uğur Erdener [17,18]



*Figure 4*

The contribution of RED-S increasing the likelihood of stress fractures has also been recognised by the International Olympic Committee. (figure 4)

This has been proven by the negative correlation between energy availability (which leads to decreased IgF-1 and bone formation markers and bone mineral density.

# Implementation of the RCP Acute Care Toolkit for Oncology:

## Evaluating SDEC and A&E Practices across two acute NHS Trusts

Mullen, Ruby; MacArthur, Ailsa; Arinze-Nkwocha, Nnamdi; Wilson, Caroline; Chung, Emerald; Ramanayake, Sahasya; Raizada, Avaya

## Introduction

**Background**: The RCP acute care toolkit released in November 2023, recommends Same Day Emergency Care (SDEC) facilities for managing specific acute oncology presentations.

**Challenge**: Lack of national guidelines for ambulatory management leads to patients being treated in Accident and Emergency (A&E) rather than SDEC.

**Objective**: To evaluate the implementation of the toolkit recommendations in two acute NHS trusts and gather staff opinions on the optimal location for oncology-SDEC.

## Materials and Methods

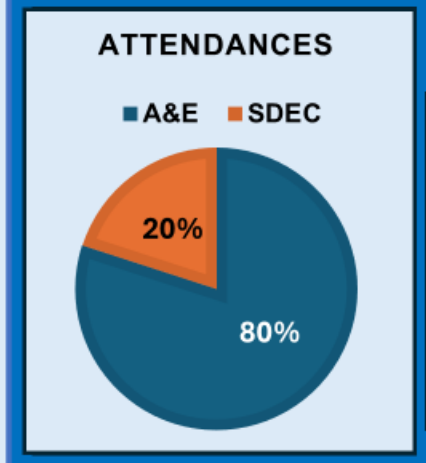
**Data Collection**: Jan-March 2024 across two acute NHS trusts.

**Eligibility Criteria**: Patients registered with The Christies (local cancer centre) within six weeks of anti-cancer therapy (ACT) with emergency presentations due to cancer complications or ACT toxicity.

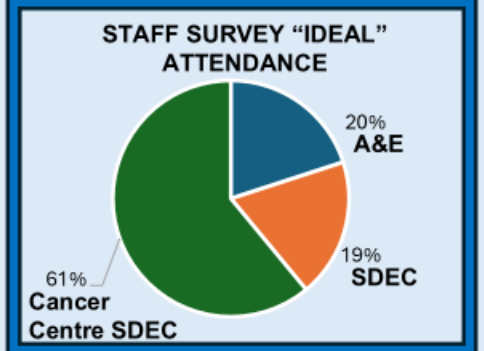
**Data Points**:
Reason for admission | Admission rate | Length of stay | Type of ACT and cancer subtype

**Staff Survey**: Conducted via SurveyMonkey among acute care staff and distributed via email.

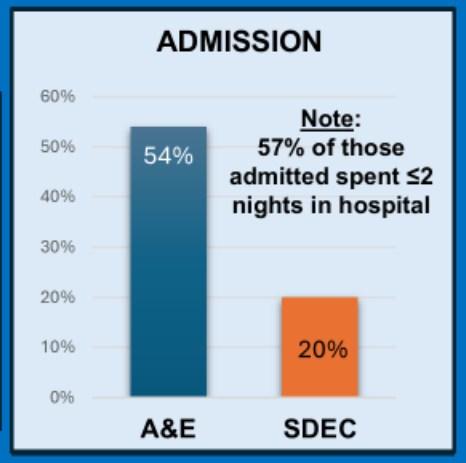
## Results




Graph 1

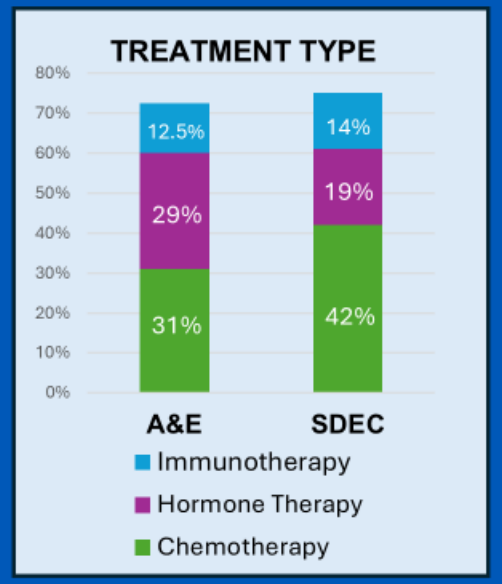



Graph 2

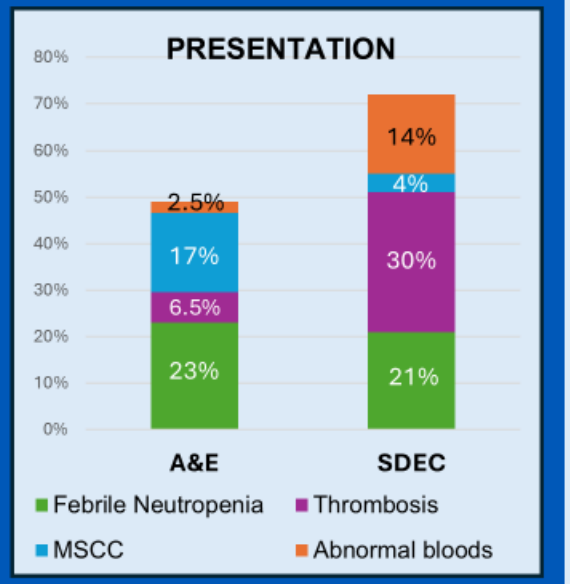



Graph 3

## Results Continued




Graph 4




Graph 5

## Conclusions

**Current Gaps**:
- ❖ No national streaming process from cancer hotlines, A&E or GP referrals to SDEC.
- ❖ A&E must identify patients for SDEC & triage to SDEC

**Recommendations**:
- ❖ Develop national clinical guidelines and pathways for ambulatory cancer presentations
- ❖ Enhance collaboration between oncology services and SDECs.
- ❖ Improve education on acute oncology complications.

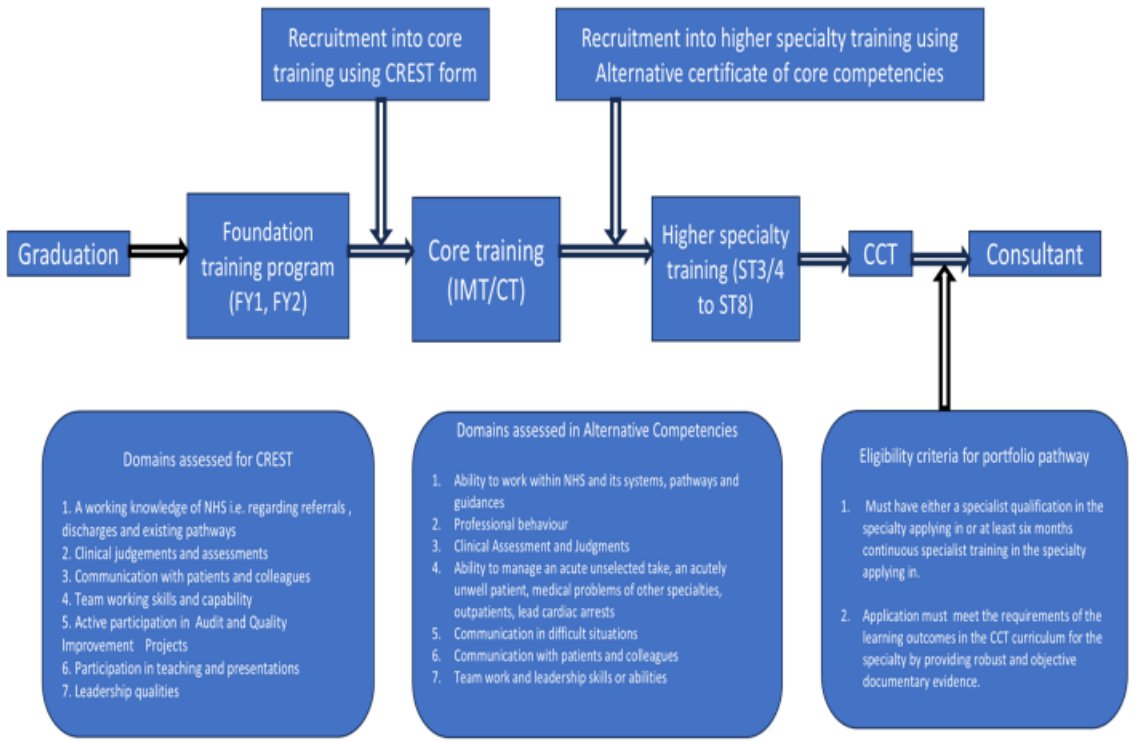
**Next Steps:**
- ❖ Advocate for development of national clinical guidelines.
- ❖ Pilot education programmes for acute oncology care.
- ❖ Continue gathering data on patient outcomes in SDEC vs A&E for ongoing evaluation.

**References**
1. Royal College of Physicians. Acute care toolkit 7, Acute oncology on the acute medical unit. 2023; https://www.rcp.ac.uk/media/lbylqdni/acute-care-toolkit-7-oncology.pdf [Accessed 1 September 2024]

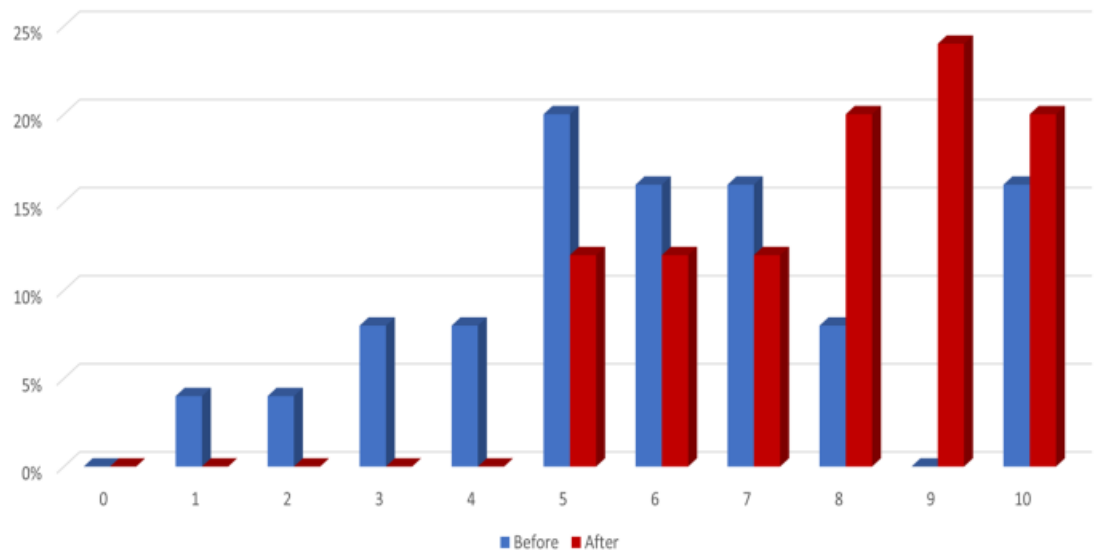
# IMG Success Compass: Navigating towards Training Journey with Confidence

This document was written with the aim to help IMGs to navigate their way towards career progression by entering the National Training Pathway through alternative routes available to them. It simplifies the NHS complexities while offering guidance and access to support services for successful integration and advancement within the NHS.

*Authors: Dr Sadia Tareq, Dr Usman Zahid*




IMGs were asked to rate this document on a scale of 0-10 on how well informed they felt before and after reading the document



# Mycophenolate mofetil Induced colitis – is it more about clinical diagnosis?

Saikat Mandal* [1,2], Yoghini Nagandran[3], Ayuni Zahirah Zahar[3]

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## Background

- Mycophenolate mofetil (MMF) is an immunosuppressant commonly used for treating autoimmune diseases, bone marrow transplant and solid organ like kidney, liver transplants.
- MMF is usually tolerated well by the patients compared to other immunosuppressive medications but it is noted to be associated with gastrointestinal side effects like nausea, vomiting, diarrhoea.[1,2,3]
- Here we describe a case of diagnostic challenge due to MMF induced colitis in a patient after 3 years of initiation of therapy.

## Case Details

- 76-years-old Caucasian female
- Past Medical History: Chronic inflammatory demyelinating polyneuropathy (CIDP)
- Medication for CIDP: Mycophenolate mofetil 1 gram three times daily
- Presentation: 7-weeks history of watery diarrhoea and crampy abdominal pains
- Investigations: C-reactive protein and complete blood count and other initial blood investigations like renal function tests, liver function tests were within normal limit.
- Initial investigation of stool samples was found negative for *Clostridium difficile* toxin by polymerase chain reaction (PCR)
- Faecal viral PCR tests like Norovirus, Astrovirus, Adenovirus 40, Enterovirus, Rota virus were negative on 2 occasions.
- Stool microscopy and as well PCR did not show evidence of parasites like *Entamoeba histolytica*, *Giardia intestinalis*, *Cryptosporidium* spp, *Blastocystis hominis*, *Dientamoeba fragilis*
- Stool culture was negative for bacterial growth on 3 occasions.
- Coeliac screening tests were found negative
- Faecal elastase was found within normal limits
- Thyroid function tests, vitamin B12 and folate level were within normal limits
- PCR testing for Cytomegalovirus DNA was also performed to look for alternative causes of diarrhoea and it was noted negative.
- Contrast enhanced CT Scan of Abdomen: There was no evidence of any gaseous distension, intraperitoneal free fluid or signs of intestinal obstruction. The liver, kidney, pancreas, spleen and colon were all normal in appearance.
- Flexible sigmoidoscopy: Normal looking mucosa without any evidence of pseudomembrane or signs of inflammation.
- Full length colonoscopy: Within normal limits and random biopsy samples were taken.
- Finally reduction of MMF dose to 750 mg three times a day caused cessation of diarrhoea.
- Patient was discharged home following cessation of diarrhoea for consecutive days
- Patient was clinically well and no further re-hospital admission till next 2 months.
- The histology report revealed – fragments of large intestine mucosa with occasional bifid crypts and lamina propria was markedly oedematous and foamy macrophages were present but there was no granulomata.
  - These features may represent effects of ischaemia.
  - This supports our provisional diagnosis of MMF induced colitis.

## Discussions

- Diagnosing MMF induced colitis can be challenging as the patient is receiving immunosuppressive medications - so different infectious causative agents have to ruled out initially.
- Long latency period, non-specific colonoscopic and histopathologic changes add diagnostic dilemma.
- A colonoscopy with biopsy is often required for reaching the confirmed diagnosis.
- Most common colonoscopic appearance in MMF colitis - normal looking mucosa and injurious effects of MMF can include mucosal changes ranging from oedema, erythema, erosions, and ulcerations.[4]
- For our indexed case the full length colonoscopy revealed normal looking mucosa.
- Spectrum of changes on colonic histopathological appearance - associated with MMF induced colitis: [3,4,5]
  - **More common**: Nonspecific colitis-like changes (31–50%),
  - Inflammatory bowel disease (IBD) like changes (25–36%),
  - Graft versus host disease (GVHD) like pattern (8–19%),
  - Normal or near normal pattern (18–31%), and
  - Ischemic like changes (3–12%).
- For the indexed case, we noted **ischaemic like changes** on histopathology
- The latency period between initiation of MMF therapy and onset of symptoms of enterocolitis ranges from 6 months to 15 years with a mean of 3 years.[5]
- The **latency period was 3 years** for our index case.

## Conclusions

- We report a case of adverse drug reaction related to MMF and their approach of management in a patient with CIDP who presented with diarrhoea.
- This case reminds us that **mycophenolate induced diarrhoea should be a part of clinician's differentials** and sometimes **histopathological appearance and colonoscopic findings may not be analogous**.
- Regardless of the duration that the patient has been using MMF, a vast majority of patients respond to cessation of MMF or dose reduction within a few weeks.

## References

1. Calmet FH, Yarur AJ, Pukazhendhi G, Ahmad J, Bhamidimarri KR. Endoscopic and histological features of mycophenolate mofetil colitis in patients after solid organ transplantation. Annals of gastroenterology: quarterly publication of the Hellenic Society of Gastroenterology. 2015 Jul;28(3):366.
2. Maes BD, Dalle I, Geboes K, Oellerich M, Armstrong VW, Evenepoel P, et al.. Erosive enterocolitis in mycophenolate mofetil-treated renal-transplant recipients with persistent afebrile diarrhea. *Transplantation* 2003. Mar;75(5):665-672. 10.1097/01.TP.0000053753.43268.F0
3. Davies NM, Grinyó J, Heading R, Maes B, Meier-Kriesche HU, Oellerich M. Gastrointestinal side effects of mycophenolic acid in renal transplant patients: a reappraisal. *Nephrol Dial Transplant* 2007. Sep;22(9):2440-2448. 10.1093/ndt/gfm308
4. Lee FD. Importance of apoptosis in the histopathology of drug related lesions in the large intestine. Journal of Clinical Pathology. 1993 Feb 1;46(2):118-22.
5. Prajwal Dhakal, Rakesh Gami, Smith Giri, Vijaya R. Bhatt; Mycophenolate Mofetil (MMF)-Induced Colitis. *Blood* 2016; 128 (22): 4795. doi: https://doi.org/10.1182/blood.V128.22.4795.4795

# Is It Important To Add Transfusion Training In Mandatory Induction Training List Of Junior Doctors And Nurses ?

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## Introduction

- Junior doctors and registered nurses should work within their level of competency and this applies to blood and blood product administration.
- They must also be proficient in monitoring for potential adverse reactions.
- Despite this, a lack of fundamental skill and knowledge relating to blood transfusion practice is putting patients at significant risk.[1]
- The majority of errors can be attributed to inadequate patient identification, blood being stored incorrectly and, lastly, wrong blood group being transfused.
- To prevent this type of errors it is crucial to involve junior doctors and registered nurses at transfusion teaching so that their knowledge and skills are up to date.

## Aim

- To evaluate the impact of the induction teaching of transfusion medicine among newly joined junior doctors and nurses and if the skill lab-based sessions were effective in increasing confidence and interest among the participants

## Methods

- The junior doctors and nurses who joined the hospital during the study period (March 2021 to March 2022) had to attend the mandatory sessions of transfusion medicine induction programme.
- In this quality improvement project the participants were given a pre-assessment questionnaire related to the entire transfusion chain followed by interactive training of the participants and post-training re-assessment.
- The training was delivered in 2 sessions - 1st brief theory discussion and 2nd skill lab-based demonstration and laboratory visit and escalation method in case of transfusion reaction.
- The data, thus collected, was recorded on a pre-designed and pretested Performa, and was then arranged in an excel spreadsheet.
- Statistical analysis was then carried out using SPSS Inc. According to type of data and distribution, parametric test like t test or non-parametric test like Wilcoxon signed rank test was applied.

## Results

- The mean score in the pre-training assessment was 63.9 while in the post-training assessment the mean score was 95.7; the difference was statistically significant (t-value is -4.9112; p value = 0.000042).
- There were significant differences in knowledge pertaining to storage temperature, shelf life of red cells and platelets, identification of transfusion reaction.
- All participants mentioned in the feedback skill lab-based sessions boosted their confidence and interest in the training session. Details of scores are here in table 1.

**Table 1:** Comparison of scores achieved pre and post training

| Topic of questions | Pre-induction training score | Post-induction training score | p value |
|---|---|---|---|
| Decision making on platelet transfusion | 62 | 97 | 0.000042 |
| Decision making on packed red blood cells transfusion | 84 | 104 | |
| Storage of platelets in interval between issue and transfusion | 21 | 82 | |
| Storage of packed red cell in interval between issue and transfusion | 54 | 97 | |
| Thawing of fresh frozen plasma and its indication | 37 | 102 | |
| Pre-transfusion checklist | 72 | 101 | |
| Vitals monitoring during transfusion | 88 | 103 | |
| Rate of transfusion | 82 | 94 | |
| Proper consent & documentation | 67 | 91 | |
| Identification of transfusion reaction | 62 | 93 | |
| Immediate management of transfusion reaction | 74 | 89 | |

## Discussions

- Adequate knowledge in Transfusion Medicine especially the clinical transfusion chain like indications, requisition, handling, storage, and transfusion of blood components is an important to ensure safe transfusion to the recipient.
- Very few studies have assessed the adequacy of knowledge of resident doctors involved in blood transfusion practices specifically from Indian scenario; however, data is available for nurses.[2,3]
- These findings agreed with other reference studies[2,3] who concluded that, before the educational intervention, most of the nurses as well as doctors had insufficient knowledge, however, it improved significantly in the post-intervention phase, and this applies to all relevant areas of knowledge.

## Limitations

- The number of training sessions were limited.
- All practicing resident doctors and nursing staffs working at the institution could not be included in the study.

## Conclusions

- Education and training are fundamental to ensuring health professionals have the knowledge and skills to provide high-quality, safe and effective patient care.
- Our study suggests that educational session on blood transfusion practices should be included in induction training of junior doctors and staff nurses of all healthcare organization. This gives them confidence to work in the new clinical environment.

**References**

1. Haspel, R.L., Lin, Y., Fisher, P., Ali, A., Parks, E. (2014) Development of a validated exam to assess physician transfusion medicine knowledge. Transfusion, 54, 1225–1230.
2. Vaghar MI. The impact of an educational program on blood and blood products transfusion on nurses' level of knowledge and performance. Journal of medicine and life. 2018 Jul;11(3):238.
3. Kaur P, Kaur G, Kaur R, Sood T. Assessment of impact of training in improving knowledge of blood transfusion among clinicians. Transfusion Medicine and Hemotherapy. 2014 Jun 1;41(3):222-6.

# A Quality Improvement Project (QIP)—Improving the induction process for new doctors in the hospital's local department.

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1. Dudley Group NHS FT.
2. Dudley Group NHS FT and University of Birmingham.

NHS
The Dudley Group
NHS Foundation Trust

## Introduction:

- A structured induction is essential for doctors entering specialized fields like Cardiology.
- Gaps in our current program have impacted adaptation and patient care.
- Studies show that structured programs improve doctor preparedness and safety, but issues like information overload and limited hands-on training can hinder effectiveness.

- To address these, we launched a Quality Improvement Project to build a more comprehensive, interactive induction program.

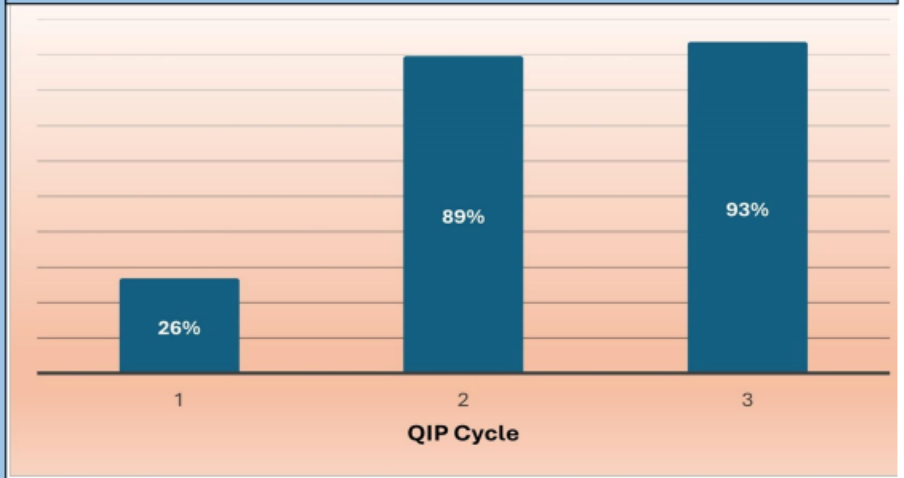
## Methods:

- **Cycle 1:** A retrospective survey gathered feedback from doctors who had recently completed induction, highlighting needs for more hands-on training and better coverage of cardiology-specific protocols.
- Initial changes included streamlining presentation content and adding more practical training elements.

- **Cycle 2:** Conducted prospectively with new doctors, revealing persistent gaps in protocol retention and clinical skills application, which led to the creation of a detailed induction booklet and video. Materials made accessible on the education website and Connect application.

- **Cycle 3:** Assessed the impact of the revised induction program.

## Results:




Doctors feel ready for their first day in the department post-induction.

## Conclusion:

An enhanced induction program with iterative interventions—such as an induction booklet, video, and digital updates—improved doctors' preparedness, confidence, and engagement, supporting better patient care and ongoing adaptability through regular audits.

# Giant Primary Cutaneous Nodular Melanoma of the Forehead: a Case Report

University Hospital Southampton NHS
NHS Foundation Trust

*Samantha Montandon [1], Charles Jefferson-Loveday [1], Matthew Sommerlad [2], Harnish P Patel [1,3,4]*

1. Medicine for Older People, University Hospital Southampton, 2. Department of Histopathology, University Hospital Southampton, 3. NIHR Southampton Biomedical Research Centre, University of Southampton, 4. Academic Geriatric Medicine, University of Southampton.

## Introduction

In the UK, malignant melanoma accounts for 4% of all new cases of cancer. Melanomas occurring in the skin of the head and neck represent 13% and 23% of cases in women and men respectively and are often associated with a poorer prognosis[1]. Prognostic indicators include presence of nodal or distant metastasis, ulceration and Breslow thickness[2]. Giant melanomas, a term applied to melanomas larger than 5-10cm, are rare and often have a very poor prognosis[3].

## Case Synopsis

In February 2022, PF, an 82-year-old Caucasian woman with fair skin was referred to the emergency department by her GP with confusion, urinary retention and a large fungating mass obscuring her forehead (Figure 1). A year prior to admission she had presented to her GP with a 1cm growth on her forehead but had declined further investigation due to concerns and heightened anxiety over contracting Covid-19. She lived on her own, did not drink excess alcohol and did not smoke. She did not have a personal or family history of any skin cancer.

### Initial investigations

An urgent shave biopsy confirmed a diagnosis of malignant melanoma. A CT scan of the head, neck and chest with contrast showed no evidence of erosion of the tumour into the frontal bone or distal metastasis (Figure 2). However, it did reveal bilateral pulmonary emboli for which she was treated with a direct oral anticoagulant.

### Excision and histology

A palliative excision of the melanoma down to the pericranium, with a 2mm radial margin and 0.1mm deep margin, and a full thickness skin graft from the right iliac fossa was performed in March 2022. Histological examination of the tumour revealed a 120 x 80 x 30mm exophytic tumour confirmed as an ulcerated nodular melanoma with a Breslow thickness of at least 30mm, vertical invasion and pathological staging of pT4b N0 M0. Mitotic count was 4/mm2. Importantly, there was no lymphovascular or perineural invasion. Histology revealed atypical epithelioid cells with pleomorphic nuclei, prominent nucleoli and occasional intranuclear inclusions (Figure 3).

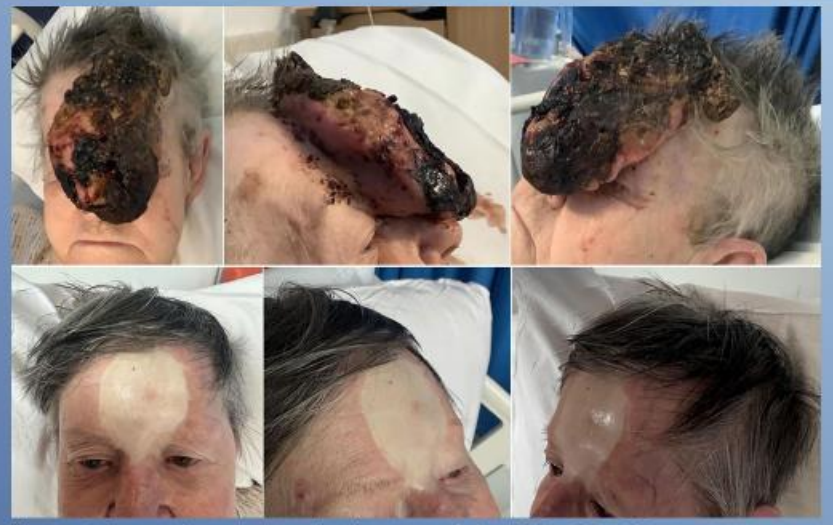


Figure 1 Pre and post operative images of the 120 x 80 x 30mm Melanoma. Post operative skin graft, 2 years after the procedure.

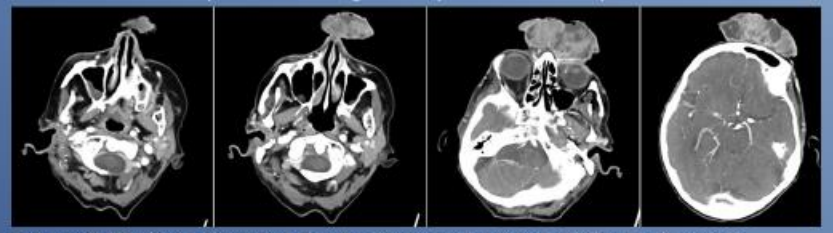


Figure 2 CT slices showing the position and extent of the melanoma.

There was absence of an underlying dysplastic naevus. There were focal in-situ components consisting of single atypical melanocytic cells along the dermoepidermal junction. Mutation analysis revealed the presence of wild type BRAF gene.

### Clinical outcome

Although palliative radiotherapy was considered, one year post excision, PF was asymptomatic and therefore she was discharged to the care of her GP. PF was admitted for a minor infection in March 2024, two years after the excision. She had no evidence of tumour recurrence, and the skin graft was intact (Figure 1).

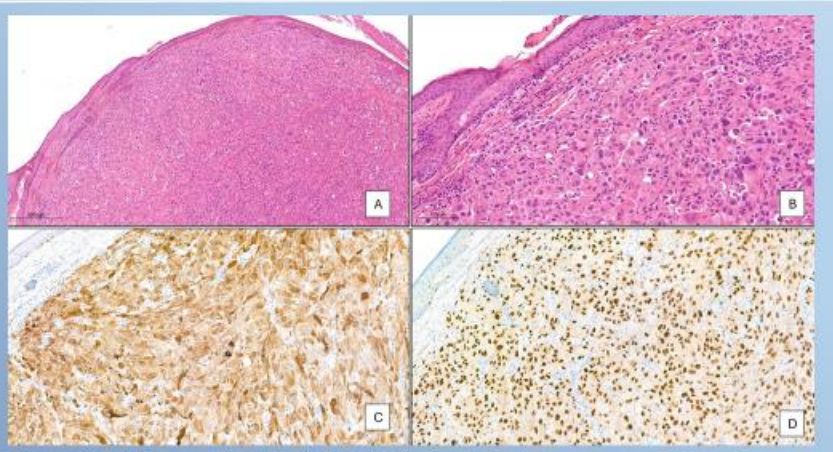



Figure 3 A (·5 magnification) & B (·20). Part of a tumour consisting of atypical epithelioid cells with pleomorphic nuclei, prominent nucleoli and occasional intranuclear inclusions. Immunohistochemistry revealed positive expression of the melanocytic markers Melan A (C), SOX10 (D) (·20), S100 and HMB45 (not shown).

## Conclusions and Learning Points

- Giant malignant melanoma predominantly refers to melanoma ≥ 5-10cm in size. Most patients present with stage III to IV disease.
- To the best of our knowledge, this is the largest case of malignant melanoma of the face to date.
- PF did not need any systemic anticancer therapy nor radiotherapy. She was well after 2 years follow up without any signs of recurrence
- It is important to be cognisant to underlying psychological factors that have influenced delayed presentation.
- Management strategies will need to account for psychological, social and physical factors, as part of a comprehensive assessment.

***Consent:*** *PF gave written informed consent for the publication of this case report including use of their clinical data and images.*

**References**

1. Melanoma skin cancer incidence statistics, Cancer Research UK
2. Gershenwald JE, et al. CA Cancer J Clin. 2017 Nov;67(6):472–92.
3. Kamińska-Winciorek G, et al. Dermatol Ther (Heidelb). 2022 Dec;12(12):2851–62.

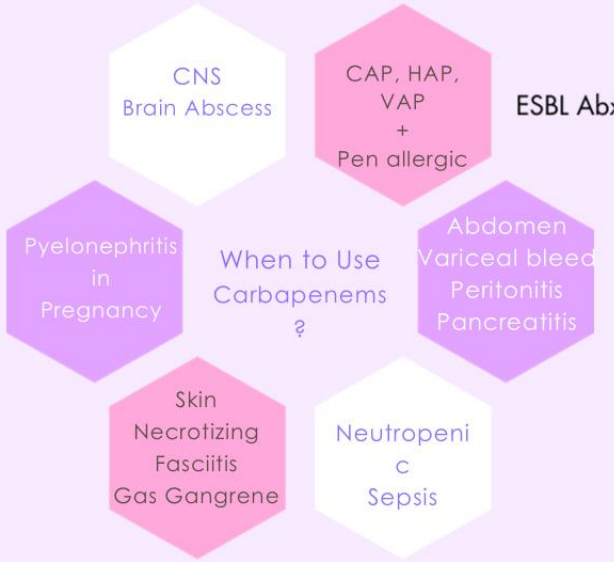
# Judicious Use of Carbapenems

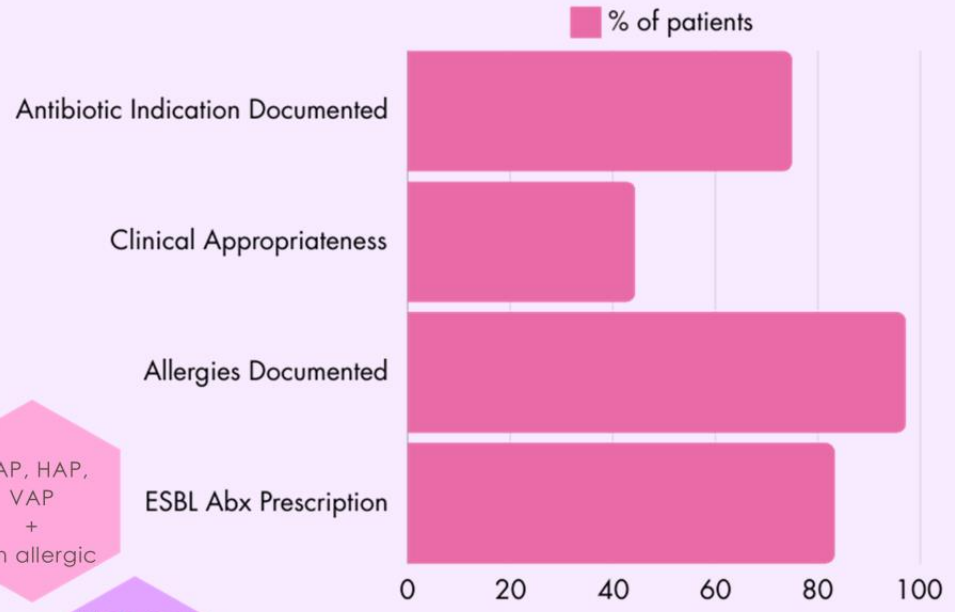
## An Audit of Appropriate Prescribing Practices

### Introduction

This was an audit looking into the judicious use of meropenem and ertapenem in our Trust, which is a district general hospital catering to a population of 350,000 people.

Meropenem is a broad-spectrum antibiotic, & must be used appropriately, to curb the development of carbapenem resistant organisms.




### Action Plan

- It is vital to calculate the CURB score for pneumonia.
- Use local antibiotic guidance before prescribing for infections.
- Document allergies including type of allergy
- Patients should not be started on carbapenems directly unless clinically indicated or discussed with a microbiologist.
- Document indications and reasoning behind the choice of antibiotic.


Dr Samia Dilrus Syeda | Dr Y Joel Suvarna Raju | Dr Sabbir Sifat | Dr Rida Suleman

Dr Safi Sadiq | Dr Shah Bano | Dr Moniza Kiran | Dr Aisha Zaheer

Supervising consultant: Dr Samita Majumdar

# A Descriptive study on the proportion of Sensorineural Hearing loss among Vitiligo patients

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Post MD trainee, Dermatology, National Hospital of Sri Lanka, Colombo, Sri Lanka.

## Background

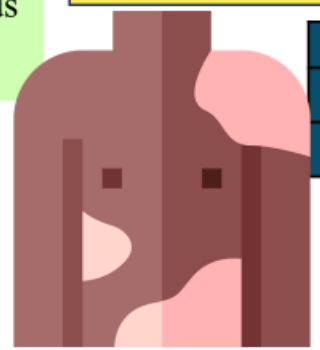
- Vitiligo is a depigmentary disorder due to auto immune melanocytic destruction.
- Extracutaneous melanocytes may get affected by the same mechanisms.
- Cochlear melanocytes are important for the normal hearing and protecting cochlea from ototoxic agents.
- Patients with vitiligo might develop extracutaneous manifestations including sensorineural hypoacusis.

## Objective

- The main objective of the study is to measure the proportion of sensorineural hearing loss and its associations among Sri Lankan patients with vitiligo

## Methodology

- A case control study was carried out including 45 patients with vitiligo and 45 control subjects
- A skin examination and an audiometric assessment was done in each subject.
- The average hearing thresholds were calculated in both groups.
- Proportions of sensory neural deafness were compared between the two groups.



## Results

- There was a significant difference in the odds of having sensorineural hearing loss between the patients who had vitiligo compared to the control group.
- Odds Ratio (OR) = 3.083, (95% CI = 1.17 – 8.129)
- The average hearing threshold in the vitiligo group was significantly higher than that of the control group (p value 0.014, 95% CI -8.13 to -0.45).

| | Normal hearing | Sensorineural hearing loss |
|---|---|---|
| Vitiligo group | 25 (55.6%) | 18 (40%) |
| Control group | 39 (86.6%) | 6 (13.3%) |

Table. Proportion of sensory neural deafness among cases and controls

## Conclusion

Vitiligo patients have a higher tendency of developing some degree of sensorineural-type hearing impairment compared to the normal population.

References

1. T.S. Anbar et al, Extracutaneous Melanocytes, Vitiligo 2019:103-113
2. T. Passeron et al, Genetic disorders of pigmentation, Clinics in Dermatology 2005 ;23:56-67
3. Prabha et al, Audiological Abnormalities in Vitiligo Patients, Int Arch Otorhinolaryngol 2020;24:75-79

# Improving senior medical workforce retention at a large Teaching Hospital trust

Dr Sarah Longwell, SpR in Palliative Medicine, Leeds Teaching hospitals trust, Dr Hamish McLure, Medical Director Professional Standards and Workforce, NHS England, Mr Sunjay Jain Associate Medical Director Professional standards and Workforce, Leeds Teaching hospitals trust
Contact: Sarah.longwell@nhs.net

## Background

With the NHS facing more pressure than ever to deliver high quality care to an aging and increasingly complex patient population it's biggest asset, the skilled workforce, needs to be robust.

We know that the workforce is aging and this particularly applies to the medical workforce who, in addition are choosing to retire early.
The NHS long term plan has ambitious aims to expand the workforce over the next 15 years, of which, retention of current staff is an important component.

## Method

**Aim: To understand in more detail senior clinician's current thinking regarding retirement, the reasons behind this and develop strategies the trust can employ to improve retention of these valuable staff.**

Following on from an online survey which had a response rate of 65.1% we invited respondents to attend a focus group. This was a 2 hour in person session where we facilitated conversations around reasons for retiring and ideas of what the trust could do to encourage them to remain at work for longer.

A thematic analysis was performed. These, and the results of the survey were combined to identify a series of recommendations for the trust.

## Results

Eight senior clinicians attended the focus group.
Some examples of their thoughts are reproduced below:

"I almost think at times [...] has a view. Oh, it doesn't matter if people go off the top because we'll just get some new trainees at the bottom."

"Just to hear once. You are really valued. We'd love to keep you. What can we do to keep you? I'd have probably binned nine out of ten of my whinges and if you could have tweaked, my one whinge I might have stayed."

"I'm aware to some extent of the rule changes, but I'm not aware of what work pattern I could work, could I have an annualised contract... information like that will be helpful."

Following analysis, the main themes that came out of the focus group were:


## Discussion

Our project identified a number of reasons why clinicians are considering taking retirement with a major theme of feeling valued underpinning their decisions and strategies the trust can employ.
Following on from this, we complied a report for the trust including 6 recommendations covering wellbeing and formalising the mentoring role. We also focused on the provision of accurate information to clinicians and individualised retirement conversations when clinicians are starting to consider their options.
These strategies would have a wider reaching impact to more junior medical staff as they think about their own late-stage careers. They are also applicable and could when considering retention of other skilled professionals within the trust

Moberly T. Doctor's early retirement has trebled since 2008. *BMJ*. 2021;373:1594.
NHS. The NHS long term plan. 2019. https://www.longtermplan.nhs.uk/

# Understanding Senior Clinicians' reasons for retiring at a large Teaching Hospital trust

Dr Sarah Longwell, SpR in Palliative Medicine, Leeds Teaching hospitals trust, Dr Hamish McLure, Medical Director Professional Standards and Workforce, NHS England, Mr Sunjay Jain Associate Medical Director Professional standards and Workforce, Leeds Teaching hospitals trust
Contact: Sarah.longwell@nhs.net

## Background

- NHS workforce data demonstrates that around 22% of medical staff (consultants and speciality doctors) are aged 50 and over and 12% over the age of 55.
- Average retirement age for doctors: Men- 61.9, Women- 61. *(March 2022)*
- Average retirement age across UK economy: Men- 65.4, Women- 64.3


***"Growing the NHS workforce will partly depend on retaining the staff we have."***

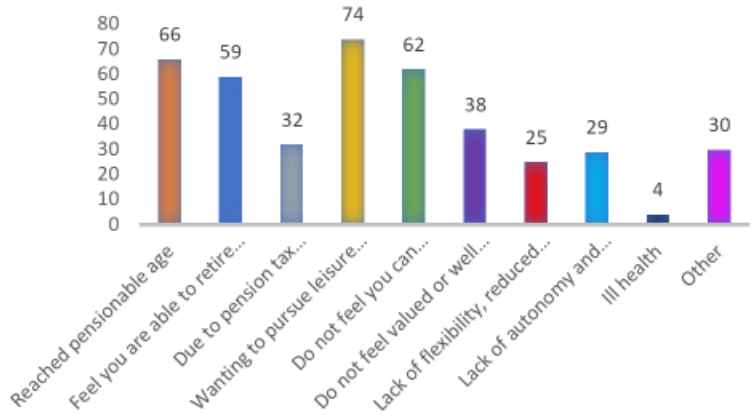
## Method

**Aim: To understand senior clinician's current thinking regarding retirement and if anything would impact these decisions.**

- Using LTHT workforce data identified 200 senior doctors and 15 consultants who had retried in the preceding 12 months to ask to complete a survey
- Questions included:
  - Current retirement age plans
  - Reasons for retiring
  - Anything that would encourage you to remain at work
  - Considering retiring and returning

## Results

Figure 1




- Survey response rate: **65.1%** (140 out of 215)
  Planned age of retirement ranged from 55-75, **median planned age of retirement: 60**
  41% of respondents were considering taking up the retire and return option and 71% of those recorded as being retired had taken this up.
  For those who had not yet taken retirement, the commonest reasons were wanting to pursue leisure interests and spend time with family, 55.6%, reaching a pensionable age, 49.6%, and feeling unable to sustain their current workload, 46.6%. 28.6%, also cited that they did not feel valued or supported.

  Figure 1 shows the reasons clinicians are considering retiring

- The commonest comments regarding factors that would encourage respondents to remain at work included increased flexibility, reduced hours and ability to come off on call rotas.

## Discussion

Our survey identified common reasons for senior clinicians' decisions regarding retirement, there was also an underlying suggestion of clinician's wellbeing within the trust being a concern. Following on from this we decided to run a focus group to try and understand more of these issues in detail and develop strategies with senior clinicians directly.

Using the results of the focus group and survey we are aiming to develop a workforce retention strategy to be employed by the trust.

NHS England (2023). Retaining doctors in late stage career guidance.
NHS. The NHS long term plan. 2019. https://www.longtermplan.nhs.uk/

# Developing understanding of person-centred practice and complex multimorbidity in foundation doctors

Sarah Foot (1), Aiden McGowan (2)

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enhance

## Background

In EoE four half-day hubs were designed to introduce learners to Person-Centred Practice (PCP) and Complex Multi-morbidity (CMM), as well as encouraging enthusiasm for further learning, through fun, interactive workshops.

These workshops comprised of:

- Enhance overview talk
- VR session immersing doctors in a visit to A&E
- Elderly care simulation utilising simulation suits
- Shared decision-making workshop.

## Aims

To evaluate the effectiveness of our hub Day in changing practice, and to discover which elements of the day were most useful in achieving this.

## Methodology

- Participants were given a pre- and post-hub case study and asked to give their three top priorities for their management plans.
- Participants answered feedback questionnaires following the post-hub case-study, including scoring how useful each session was from 1 (most helpful) to 4 (least helpful).

The case study was analysed by comparing the frequency of PCP or CMM in the management plans of participants pre- and post-hub. An analysis of the free text answers to the feedback questionnaire was also conducted.

## Results

49 completed case studies and questionnaires were analysed.

15% of pre-hub plans included PCP, and only 1% included CMM. Post-hub this had increased to 33% for PCP, and 9% for CMM. (Chart 1)

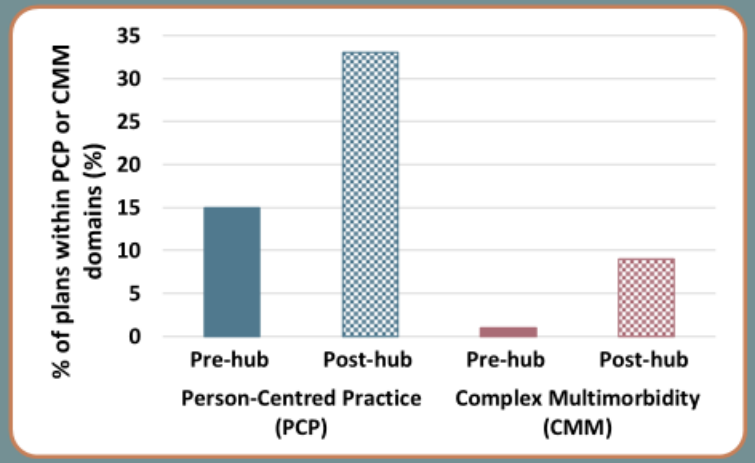



Chart 1 –showing percentage of pre- and post-hub plans that included elements of PCP or CCM.

The shared decision-making session scored most successfully with a mean score of 1.98, with the best possible score 1 and lowest possible score 4. (Chart 2)

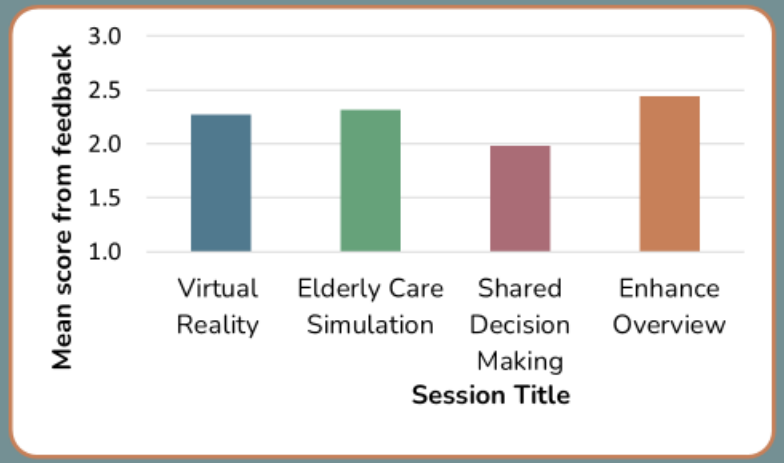



Chart 2 – Bar chart showing mean feedback scores for each session within the hub day.

***"Treat the patient, not just the disease"***

Participant quote

## Conclusion

The hub days were a success, and participants had fun. Participants' treatment plans demonstrated a shift towards person-centred care that blended well with clinical plans such as considering how antibiotics were delivered and the best location of care.

Surprisingly, the more technologically innovative sessions, namely VR and elderly care simulation, were less well received despite contributing to their changed practice. Technical difficulties were cited as the main reasons for this.

Future ideas include a senior-led polypharmacy workshop, inviting patients to share their experiences and improving usability of technology.

# Pulmonary ANCA Vasculitis Induced by Carbimazole

Authors: Selena Yang, Su-Ann Yeoh, Sam Faber, Jack Callum

## Background

ANCA positive vasculitis has been associated with the use of antithyroid medication in treatment of Graves' disease. Previous studies suggest only a small number of patients with positive ANCA develop symptoms of vasculitis. [1] Fewer than ten cases are associated with carbimazole. [2] We discuss challenges in diagnosing and managing carbimazole associated ANCA vasculitis.

## Case presentation

A 77-year-old Caucasian woman presented with new atrial fibrillation on a background of known Graves' disease.
PMH: Graves' disease since 2008 on lifelong carbimazole therapy 5mg OD as declined definitive thyroid management. Previous TIA, hypertension, chronic kidney disease.
She was started on edoxaban and carbimazole dose was increased. She developed breathlessness and serial CXR showed unresolving consolidation. CT chest showed ground glass opacification and she was referred for VATS biopsy of ground glass changes. At biopsy blood seen at vocal cords and firm lung noted
Histopathology reported as suggestive of capillaritis
She later developed haemoptysis with xray changes showing alveolar haemorrhage. Interval autoimmune screens were negative until two months later, when it was positive for anti-MPO and PR3.

## Histological findings

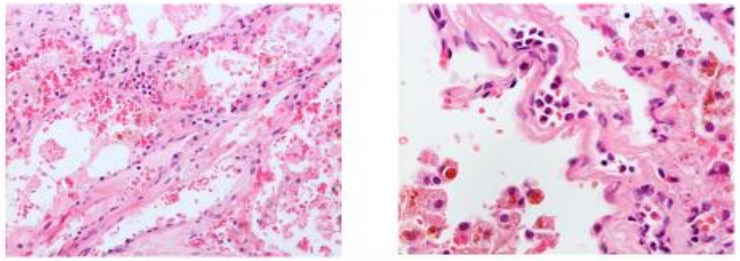
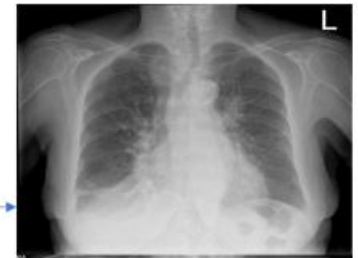
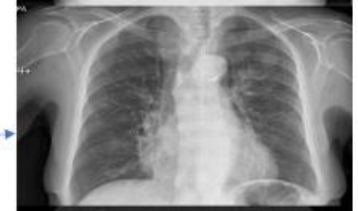


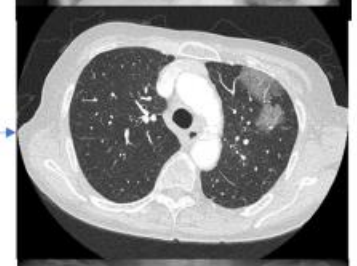
Figure 1: Left lower lobe biopsy: Haemosiderin-laden macrophages with minimal interstitial fibrosis suggesting capillaritis.

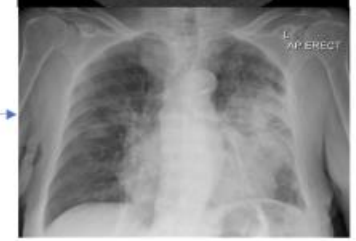
## Timeline and Radiological Findings

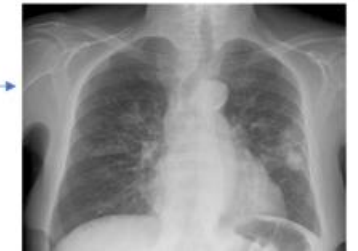
| Month | |
|---|---|
| 0 | Presents to A&E in fast AF, carbimazole dose increased from 5mg to 15mg OD |
| 1 | Presents to A&E with shortness of breath and cough, CXR shows right lower zone |
| 2 | Consolidation not resolved on CXR despite antibiotics. |
| 3 | CT chest shows left lower lobe ground glass opacification. Referred for VATS biopsy<br>VATS biopsy suggests alveolar haemorrhage |
| 4 | First presentation with haemoptysis, autoimmune screen negative |
| 5 | |
| 6 | First positive autoimmune screen, starts steroids and |
| 7 | CXR showing improvement in consolidation |









## Results and Outcome

- Patient received high dose steroid therapy and weekly methotrexate injections
- Haemoptysis resolved with radiographic and serological improvement.
- Carbimazole was stopped and patient is considering radioiodine treatment

## Discussion

- Antithyroid medications including carbimazole can induce ANCA vasculitis
- ANCA vasculitis should be considered in patients who have recently started antithyroid therapy and those who have been established on therapy with recent dose adjustments
- Persistent vigilance of patients in whom ANCA vasculitis is suspected is important in those who are autoantibody negative as symptoms may pre-date seroconversion
- Clinicians should stop the offending agent and take a similar approach to management as primary ANCA vasculitis based on patient symptoms and disease severity.
- Definitive antithyroid management with thyroidectomy or radioiodine therapy should be considered alongside management of ANCA vasculitis

## Conclusion

This case highlights the need to consider not only recently commenced drugs, but also recent changes in drug dosing when exploring the aetiology of new onset ILD.

## References

1. Harper L, Chin L, Daykin J, Allahabadia A, Heward J, Gough SC, Savage CO, Franklyn JA. Propylthiouracil and carbimazole associated-antineutrophil cytoplasmic antibodies (ANCA) in patients with Graves' disease. Clin Endocrinol (Oxf). 2004 Jun;60(6):671-5. doi: 10.1111/j.1365-2265.2004.02029
2. Pneumotox » drug » carbimazole. Available from: https://www.pneumotox.com/drug/view/55/carbimazole

# Syncope scare: Syncope as a clincher of nasopharyngeal cancer

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St.Helier hospital, Epsom and St Helier University hospital,NHS trust

## Introduction

- The mysteries and intricacies of the structures of the neck came to some light with the milestone work by Weiss and Barr in 1933.
- The carotid sinus acts as a baroreceptor and has the ability to alter sympathetic tone via vagus nerve efferents to the AV and SA nodes.
- Repetitive stimulation of the carotid sinus leads to carotid sinus syndrome-a cause of 8.8%of syncopes,(1)
- Syncope accounts for 1-2% of all ED visits.(2),yet a neck mass remains an underappreciated cause of syncope.(3)

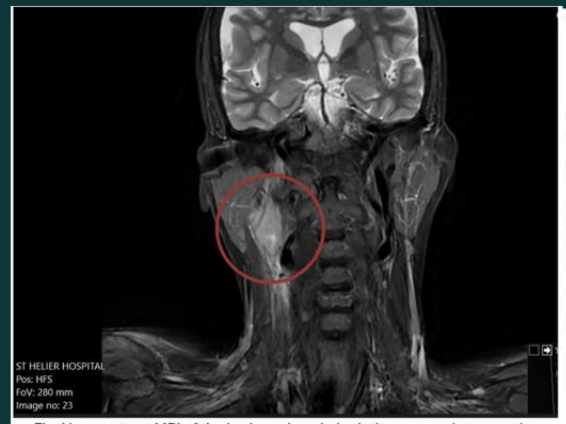


Fig: Non contrast MRI of the brain and neck depicting a mass between the carotids potentially compressing the carotid bulb.

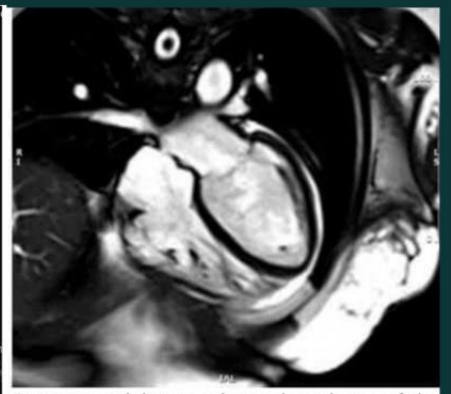


Fig: Late gadolinium enhanced axial view of the heart .The end systolic volume of the left ventricle was found to be increased.

## Discussion

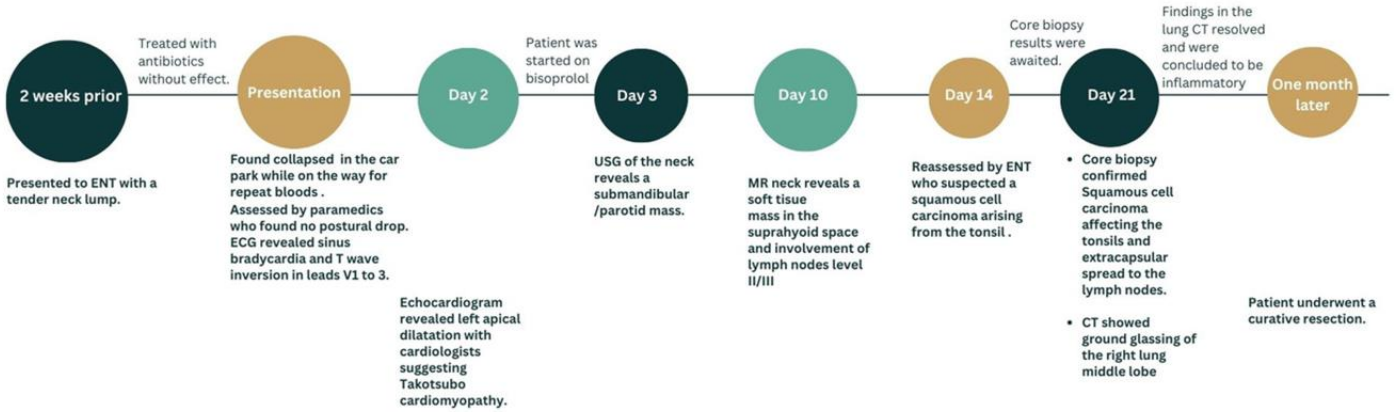
- The carotid sinus nerve of Herring has efferents formed by the vagus nerve
- A mass in the suprahyoid carotid space can compress on the carotid sinus resulting in a carotid sinus syndrome(CSS)with a cardio-inhibitory response being the most common cardiovascular response.(3)
- Suprahyoid carotid space masses displaces the parapharyngeal fat anteriorly.(5)
- A squamous cell carcinoma of the head and neck is the 6th most common cancer worldwide. Tobacco ,EBV and HPV infections are important risk factors .HPV and EBV positive individuals are affected early and are p16 positive.
- The echo and MRI were suspicious of Takotsubo cardiomyopathy which is stress induced systolic dysfunction, was seen in this patient and served as a confounding factor.
- The most appropriate treatment for a head and neck cancer is one which is most curative and least functionally debilitating. Systemic therapies have seen a rise in immunotherapies and a CP (composite positive) score based on PD-1 ligand is the key determinant for it.
- Treatments for head and neck cancer entail a myriad of post procedure side effects due to the complexities of the structures and functionalities of the head and neck.Dysphagia, speech difficulties which occur in 50% of radiotherapy receivers have far reaching effects on patients' quality of life and their families.(6)

## Conclusion

- We are nearing a hundred years since the elucidation of carotid sinus as a baroreceptor.
- Although brilliant work is being done, we are still far from recognising syncope as a clincher of nasopharyngeal cancer .
- A huge population remain at risk of their life altering abilities to speak and swallow being at stake when a less apparent cause is overlooked by an acute physician.
- Being complacent with a routine battery of investigations for a syncope and delaying a follow up could indeed paint a very different future for someone.

## 56year old lady

Neck lump with syncopal episode




## References

1.Shamai A. Grossman; Madhu Badireddy. Syncope Last Update: June 12, 2023.
2.Pranjal R Patel and James V Quinn Syncope: a review of emergency department management and disposition
Clin Exp Emerg Med. 2015 Jun; 2(2): 67–74.
3.Richard Sutton Carotid sinus syndrome: Progress in understanding and management Glob Cardiol Sci Pract. 2014; 2014(2): 1–8.
4.Lin-lin Zhang, Lei Wang, Jie Ge,and Shi-kun Sun Syncope as the initial symptom in a patient with nasopharyngeal carcinoma: a case report BMC Cardiovasc Disord. 2023; 23: 134.
5.https://epos.myesr.org/poster/esr/ecr2020/C-15049 EPOS Posters: The role of Magnetic Resonance Imaging in the assessment of carotid space masses
6.Daniel E. Johnson, Barbara Burtness, C. René Leemans,Vivian Wai Yan Lui, Julie E. Bauman, and Jennifer R. Grandis, Head and neck squamous cell carcinoma
Nat Rev Dis Primers. 2020 Nov 26; 6(1): 92.

# A QUALITY IMPROVEMENT PROJECT TO INCREASE THE NUMBER OF LOCALLY EMPLOYED DOCTORS THAT ENTER INTO TRAINING POSTS IN THE 2025 NATIONAL RECRUITMENT: AN INITIATIVE OF THE DOCTOR'S WELLBEING GROUP AT UHB NHS FOUNDATION TRUST.

**Authors:** S. Mahajan[1], M. Rahman[1]
1. University Hospitals Birmingham NHS Foundation Trust

## Introduction:

The aim of this Quality Improvement Project (QIP) is to provide support for Locally Employed Resident Doctors (LEDs) at all levels within the University Hospitals Birmingham (UHB) trust in attaining their required training competencies and navigating the structured training application process to promote career progression. Recognizing the pivotal role of career development and wellbeing in the medical profession, the focus is on understanding the needs and challenges faced by LEDs, proposing interventions to address them and to promote career development.

## Methods:

Prospective data collection was conducted through the distribution of a questionnaire via email among LED colleagues (>500) within the UHB trust. The data collection period spanned from 15 Jan 2024, to 16 Feb 2024. The sample size comprised 90 respondents, including doctors at various grades. Most responses were obtained from SHOs (67.8%), with representation from all UHB sites, predominantly Queen Elizabeth Hospital Birmingham (QEHB) (41.1%) and Birmingham Heartlands Hospital (BHH) (37.8%).


## Results:

- **Training Application Intentions:** A considerable majority (83.3%) of respondents expressed plans to apply for training posts during their employment with UHB. However, a notable proportion (26.7%) lacked clarity on evidence requirements for these applications, with over half (55.65%) seeking further clarification.
- **E-Portfolio Utility:** While the current LED e-portfolio was deemed useful by a minority (15%) of respondents for evidencing training applications, a notable proportion (10%) found it ineffective. Similarly, only one-third of respondents utilized the NHS e-portfolio for their training applications.
- **Support Needs:** Most respondents required additional support for various aspects of evidence collection, particularly in audits, Quality Improvement Projects (QIPs), and research/publications. Less than half of respondents (44%) felt satisfied with the current LED Teaching curriculum.
- **Supervisory Support:** While most respondents reported holding induction meetings with their supervisors to agree on Personal Development Plans (PDPs), a significant minority (17.8%) did not have such meetings. One-fourth of respondents felt their supervisors were unaware of evidence requirements.
- **Work Patterns and Wellbeing:** Consideration of less than full-time (LTFT) work was prevalent among respondents (42.2%), with many (34.4%) viewing it as beneficial for wellbeing and career progression.

## Conclusion:

These results highlight the importance of tailored support mechanisms , updates to existing resources, and enhanced awareness among supervisors to address the multi-faceted needs of LEDs within the UHB Trust.

## Pioneer Measures:

Following the presentation of the results of this survey to the Postgraduate Medical Education Leads, and involving the RCP and LED tutors the following has been implemented:

- Planned changes in the Moodle (resident doctor) platform resources.
- Scheduling training application sessions from July 2024 onwards as a part of bi-monthly LED teaching.
- Involving IMG HST trainees and scheduling sessions for Locally Employed Registrars to help them with the training application process.
- Starting social media (WhatsApp) groups (Buddy-groups) led by trainees with a cohort of LEDs to keep them up-to date with information, answer any queries and to keep them motivated and informed. Also, further involvement of different college tutors in this regard to find out trainee volunteers willing to help.

Building healthier lives

# Quality improvement project (QIP) : In-patient Neurology referral process in Newcross hospital

Authors: Shilpi Shukla[1] , Ikechukwu Chukwuocha[1] , Simon Ubben[2]

The Royal Wolverhampton NHS Trust

**Background:** Liaison neurology – consulting with inpatient referrals is the main way most patients admitted with neurological diseases have access to neurology services.

Most liaison neurology services are responsive – seeing referral on request but being proactive with a regular in-patient neurology presence can: **improve patient outcomes and funds with reduced hospital stay with effective and safe discharge.**

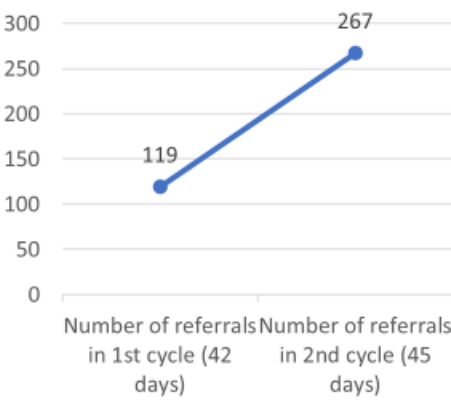
The **Newcross hospital, RWT is an 850-bed district general hospital categorised as N3 site** (DGH neurology centre where Neurologists are based but without in-patient Neurology beds.)[3]

This project is an attempt in keeping with the **GIRFT (Getting it right first time) programme.[4]**

| Table 1 | Audit cycle 1 | Audit cycle 2 |
|---|---|---|
| Study period | 16.10.23 to 16.01.2024 | 13.03.2024 to 17.05.2024 |
| Number of working days | 42 | 45 |
| Total referrals received | 119 | 267 |
| Objectives | Assess effectiveness of the existing Neurology referral system: bleep data, emails to secretaries & newly introduced generic mailbox (as pilot). | Assess effectiveness of the email referral process for in-patient Neurology service. |
| Variables studied for each referral | • Referrer.<br>• Presenting complaint category.<br>• Quality.<br>• Referring specialty. | • Daily number – new or review.<br>• Referrer.<br>• Time of receiving.<br>• Presenting complaint category.<br>• Referring specialties.<br>• Quality.<br>• Contact details.<br>• In-patient reviews: face-to-face or advise via email.<br>• Diagnosis confirmed.<br>• Review in 24 hours. |
| Outcome | • Bleep referral process - very distracting & interrupting consultation.<br>• Abolishment of the bleep system.<br>• No clear documentation of information for referral.<br>• Prompted to encourage the use of the newly introduced generic email referral system hospital-wide. | • One-stop point of contact.<br>• Continuity in care.<br>• Better record keeping.<br>• Easy access for the Neurology team with less distractions during the review.<br>• Easy access for the referring teams too.<br>• Significant rise in referrals.<br>• Documentation and future audit purposes.<br>• Reduce out-patient waiting list as non-urgent or cases that can be managed / reviewed as outpatient are seen as in-patient.<br>• Reduced admissions with review in ED/SDEC and SDEC Acute Neurology HOT clinic. |

**Interesting observations:**

- Mondays most referrals.
- Foundation year doctors common referrers.
- Seizures commonest reason.




**Limitations:**
Strike days, direct consultant calls not included.

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**References:** Fuller GN. Improving liaison neurology services. Practical neurology. 2020 Dec 1;20(6):494-8[3]
Thomas S. Getting it right first time: the reports. British Journal of Neuroscience Nursing. 2021 Dec 2;17(6):247-52.[4]

# Neuropsychiatric symptoms as the initial clinical manifestation of familial Creutzfeldt - Jacob disease (fCJD)

**Authors: Shilpi Shukla[1], Ikechukwuchu Chukwuocha[1] , Simon Ubben[2] (Newcross hospital)**

NHS
The Royal Wolverhampton
NHS Trust

**Background:** CJD is a rapidly progressive, ultimately fatal and rare neurodegenerative disorder with variable clinical manifestation caused by accumulation of abnormally misfolded prion protein. Diagnosis may be delayed or missed in the early stages of the disease because of the wide clinical phenotype.[1-2]

**Case presentation:**

55-year-old woman, previously fit and well → 6-month history of progressive personality changes and neurological deterioration → more agitated than usual, overly combative, paranoid and delusional → increasing signs of behavioural and personality changes with worsening confusion, perseveration and forgetfulness → difficulty in navigational skills, ataxia, tremulousness with an overall decline in performance

**Investigations:** Routine haematological, biochemistry & confusion screen normal. CSF showed mildly raised proteins 0.6 g/L with 0 white cells. CSF RT QUIC assay was sent following suspicion of CJD which was positive, confirming CJD. MRI Brain showed bilateral basal ganglia & thalami involvement (Figure 1).

**Conclusion:** While familial CJD is a very rare disease, it should be considered in differential diagnoses whenever there are rapidly progressive neurodegenerative and neuropsychiatry symptoms. This is because diagnosis may be missed as clinical symptoms maybe subtle and obscure especially in the early stages of this clinical entity. Further history following confirmation of diagnosis revealed familial CJD as the cause of death of her paternal uncle with genetic test confirming a mutation in the prion protein (E200K mutation).

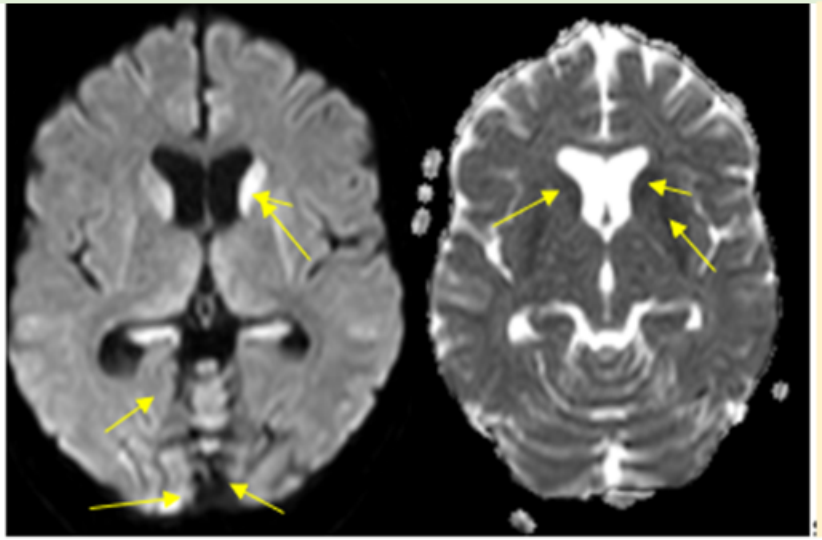

**Figure 1:** MRI Diffusion-weighted(DW) images showing restricted diffusion in the bilateral caudate head and putamen with ADC correlate as well as mildly restricted diffusion in the thalami (marked as yellow arrows).

**Learning points:**

- fCJD is a very rare neurodegenerative disorder with rapid progressive decline with implications for the individual and family members and ultimately leading to death.
- It is crucial that clinicians have a low index of suspicion for this disorder especially in individuals who present with rapidly progressive neurological symptoms when infectious, metabolic, autoinflammatory and malignant aetiology has been ruled out.
- In making the diagnosis of this rare entity, clinical spectrum, neuroradiological and CSF findings are important.

**References:** 1. Sitammagari KK, Masood W. Creutzfeldt Jakob Disease. 2024 Jan 30. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan–. PMID: 29939637. 2. Sawal N, Chakravarty K, Puri I, Goyal V, Garg A, Shi Q, Zhou W, Xiaoping D, Shukla G. Familial Acad Neurol. 2019 Apr-Jun;22(2Creutzfeldt-Jakob Disease: The First Reported Kindred from South-East Asia. Ann Indian ):225-227. doi: 10.4103/aian.AIAN_441_18. PMID: 31007442; PMCID: PMC6472217.

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Neurology Consultant[2]

# GASTROINTESTINAL INVOLVEMENT IN METASTATIC MELANOMA

S Chahure (presenting author), J De La Revilla Negro, M Sharip, J Chan- Addenbrookes hospital, Cambridge University Hospitals NHS Foundation Trust

Malignant melanoma is a melanocytic tumour which presents a global health concern. In the UK alone, there are around 17,500 new cases of melanoma reported annually.[1] We are reporting two cases of melanoma with unusual metastasis here. The first case is a man in his 70s with a history of metastatic melanoma to brain, lungs and multiple lymph nodes on pembrolizumab therapy. He presented with multiple episodes of black tarry stools shortly after starting apixaban for PE. On examination, he appeared pale, tachycardic, and hypotensive with a pulse of 110 bpm, BP 103/60 mmHg, RR 18 / minute, temperature 36.4C and saturation of 97% on room air. Digital rectal examination revealed melaena. Blood tests showed low haemoglobin (73g/L), elevated lactate (2.03 mmol/L), urea (9 mmol/L), CRP (19 mmol/L), white blood cells (7.81 10*9/L), and prothrombin time (15.6 s). A gastroscopy was done which showed the stomach and duodenum infiltrated with nodular lesions with central pigmentation (Figure 1), suggestive of metastatic melanoma. This was later confirmed on histology

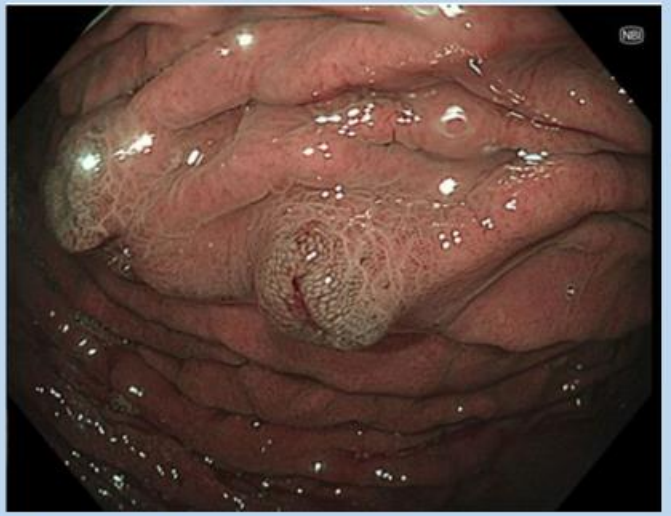

Figure 1 -Stomach infiltrated with multiple nodular lesions with central pigmentation

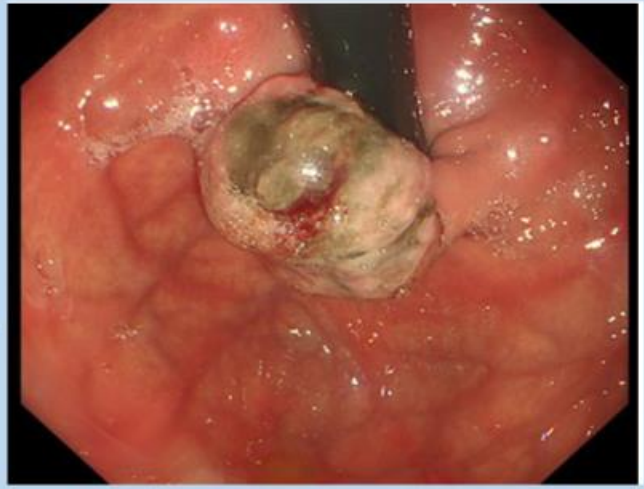

Figure 2- Discrete, black-coloured mass at the gastroesophageal junction

The second case presents a male in his 50s with a background of primary melanoma of the chest wall (surgically removed) along with lung and brain metastases on combination immunotherapy with ipilimumab and nivolumab(immune check point inhibitors). He presented with multiple GI symptoms, including intractable nausea, vomiting, and diarrhoea. On examination, he was hypotensive, with a blood pressure of 93/57 mmHg, a pulse of 81 bpm, respiratory rate of 16 / minute, temperature of 36.6C, and saturation of 96% on room air. Physical examination was unremarkable. Blood tests showed creatinine 117 mmol/L, urea of 8.2 mmol/L, haemoglobin 130 g/L, WCC 6.8 10*9/L, CRP 27 mmol/L, and a normal liver function test. He was initially managed for enteritis, but an inpatient gastroscopy was performed due to worsening vomiting, which showed evidence of a discrete, black-coloured mass at the gastroesophageal junction (Figure 2). This was later confirmed as melanoma on histology.

## DISCUSSION

The presented cases highlight the clinical challenges posed by gastrointestinal involvement in metastatic melanoma. Both patients manifested diverse gastrointestinal symptoms that required thorough investigation and management. This is in accordance with other cases of GI metastasis of melanoma presenting with a variety of clinical manifestations making diagnosis difficult. These include bowel obstruction due to intussusception [2] , gastrointestinal bleeding [3] , symptomatic anaemia [4] , and general symptoms like abdominal pain or dysphagia. [5,6] Timely interventions with appropriate diagnostic tools, such as gastroscopy and biopsy, is crucial. Typical cytomorphological features and immunohistochemical staining lead to the diagnosis. [5] Management of metastatic melanoma to the GI tract may include surgical resection, chemotherapy and immunotherapy. Several studies have reported on the improvement in mortality associated with surgical resection for GI metastases. [2,7,8] Development in immunomodulators such as BRAF and MEK inhibitors, tyrosine-kinase inhibitors and immune checkpoint inhibitors have significantly improved mortality. [9] In conclusion, gastrointestinal metastatic melanoma presents a diagnostic and therapeutic challenge that requires a multidisciplinary approach. Increased awareness among clinicians regarding the diverse presentation and maintaining a high index of suspicion remains paramount in improving patient outcomes.

## REFERENCES

1. Cancer Research UK. Melanoma skin cancer incidence statistics.
2. Kharroubi H, Osman B, Kakati RT, Korman R, Khalife MJ. Metastatic melanoma to the small bowel causing intussusception: A case report. International Journal of Surgery Case Reports. 2022 Apr;93:106916.
3. Froes C, Scibelli N, Carter MK. Case report of metastatic melanoma presenting as an unusual cause of gastrointestinal hemorrhage in an elderly gentleman. Annals of Medicine & Surgery. 2022 Jun;78.
4. Amaris MA, Kallas HE, Gonzalo DH, Orlando FA. Gastric and colonic metastases of malignant melanoma diagnosed during endoscopic evaluation of symptomatic anemia presenting as angina: a case report. Frontiers in Medicine. 2023 Nov 2;10.
5. Liang K v., Sanderson SO, Nowakowski GS, Arora AS. Metastatic Malignant Melanoma of the Gastrointestinal Tract. Mayo Clinic Proceedings. 2006 Apr;81(4):511–6.
6. Syed HR, Shekar S, Aravantagi A. Melanoma and the Gastrointestinal (GI) Tract: Maintaining a High Index of Suspicion. Cureus. 2021 Feb 18;
7. Berger AC, Buell JF, Venzon D, Baker AR, Libutti SK. Management of Symptomatic Malignant Melanoma of the Gastrointestinal Tract. Annals of Surgical Oncology. 1999 Mar;6(2):155–60
8. Khadra MH, Thompson JF, Milton GW, McCarthy WH. The justification for surgical treatment of metastatic melanoma of the gastrointestinal tract. Surgery, gynecology & obstetrics. 1990 Nov;171(5):413–6.
9. Sundararajan S, Thida AM, Yadlapati S, Mukkamalla SKR, Koya S. Metastatic Melanoma. 2024.

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# Cardiac health and antipsychotics ; an audit and QIP conducted in an inpatient psychiatric unit

AFFILIATIONS

*Cambridgeshire and Peterborough NHS Foundation Trust (NHSFT)*

## 01. Introduction

Antipsychotics are widely used to manage psychiatric conditions, improving patients' quality of life. However, these medications can cause significant cardiac side effects, including QT interval prolongation, which increases the risk of life-threatening arrhythmias such as torsades de pointes.

Recent studies have shown that antipsychotics raise the risk of sudden cardiac death by 2-3 times compared to the general population.

We initially conducted an audit to compare the current practice in ECG monitoring against the British Heart Rhythm Society's guideline, which recommends ECGs at admission, discharge, and yearly follow-ups for patients on antipsychotics.

The audit identified gaps in compliance with these guidelines, which formed the basis for our quality improvement interventions.

## 02. Objective

1) Assess compliance with ECG monitoring for psychiatric inpatients on antipsychotics, in line with the British Heart Rhythm Society's guideline

2) Identify barriers to proper ECG monitoring at both admission and discharge to improve patient safety.

3) Implement and evaluate interventions aimed at increasing the rate of ECG monitoring and reducing the risk of cardiac complications in patients on antipsychotics.

## 03. Methodology

**Audit Scope:**

- Patients discharged between September and December 2021 who were on antipsychotics prior to or started during admission were assessed.
- Patients not on antipsychotics or those who declined ECGs were excluded.

**Intervention Cycles:**

- Consistent inclusion criteria were applied across all cycles.
- Data from each cycle guided new interventions to address causes of previous challenges

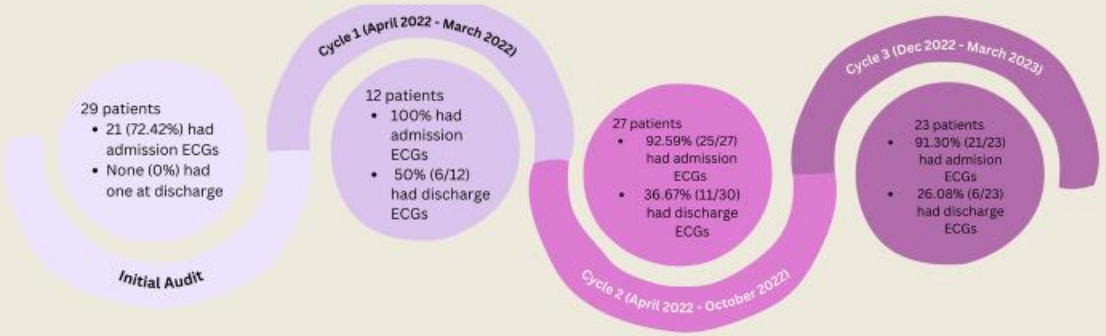
**Inclusion Criteria**

1) Inpatient psychiatry patients at the Cavell Centre
2) On antipsychotics prior to admission
3) Started on antipsychotics during admission
4) Was offered and agreed to undergo ECG

**Exclusion Criteria**

1) Patients who were not on antipsychotics
2) Patients who were offered but declined to undergo ECG

## 04. Results/Findings




| Barriers to compliance |
|---|
| Informal patient discharges |
| Discharge during authorized leave |
| Rotational nature of junior doctors and quality improvement leaders |
| Unclear discharge dates |

| Examples of interventions |
|---|
| Continued the routine offering and documentation of ECGs upon patient admission. |
| Implemented a new protocol to perform ECGs before patient discharge. |
| Delivered a presentation at the business meeting to highlight the importance of ECGs and communicate the proposed changes. |
| Introduced a new column in the handover table specifically for discharge planning. |
| Added a dedicated line for "Discharge ECG" under Doctor's jobs in the handover list. |
| Ensured that patients whose Section is rescinded receive an ECG on the day they become informal. |
| Established a procedure to perform an ECG on the Monday morning of the patient's estimated discharge week. |
| Introduced a requirement for patients going on Section 17 leave (longer than a day) before their estimated discharge week to have an ECG before they leave. |
| For patients with indeterminate discharge dates due to social factors, an ECG will be repeated every two weeks, or sooner if one of the above situations occurs. |
| Conducted a 30-minute teaching session on the relationship between antipsychotic medication and ECGs. |


## 05. Conclusion

- This audit and QIP highlights the importance of ECG monitoring in patients on antipsychotics, given the significantly increased risk of cardiac arrhythmias and sudden cardiac death associated with their use.
- Despite significant improvements in ECG assessment rates on admission throughout the intervention cycles, compliance with discharge ECGs remains suboptimal.
- Addressing recurrent barriers, such as ensuring clarity in discharge dates, streamlining processes for informal patients, and enhancing continuity of care despite staff rotations, is essential for sustained adherence to monitoring.
- Continued multidisciplinary efforts are warranted to bridge these gaps and optimize cardiac safety in this vulnerable patient population.

## 06. References

1. Beach SR, Celano CM, Noseworthy PA, Januzzi JL, Huffman JC. QTc Prolongation, Torsades de Pointes, and Psychotropic Medications. Psychosomatics (Internet) 2013;54(1):1–13.
2. Wang M, Ma Y, Shan Z, Jiang L, Zhang X, Wei X, et al. Mapping the Knowledge of Antipsychotics-Induced Sudden Cardiac Death: A Scientometric Analysis in CiteSpace and VOSviewer. Frontiers in Psychiatry 2022;13.
3. Darpo B. Spectrum of drugs prolonging QT interval and the incidence of torsades de pointes. European Heart Journal Supplements 2001;3(K):K70–80.
4. Shah AA, Aftab A, Cavendish J, QTc Prolongation with Antipsychotics. Journal of Psychiatric Practice 2014;20(3):196–204.
5. Ahwanda A, Rosen SD, Cohen A, Wong T. 64 ECG Abnormalities in Patients on Antipsychotic Medication: More to it than QT Prolongation! Abstract 64 Table 1. Heart 2015;101(Suppl 4):A33.1–A35.
6. Lambiase PD, Biasi JP de, Schilling RJ, Lowe M, Turley A, Slade A, et al. British Heart Rhythm Society Clinical Practice Guidelines on the Management of Patients Developing QT Prolongation on Antipsychotic Medication. Arrhythmia & Electrophysiology Review 2019;8(3):181–5.

# An audit monitoring renal function and gentamicin levels in Paediatric surgical patients

Dr Simran Khanna, Dr Thiveya Thavarajah
University Hospitals of Leicester NHS Trust

## Introduction

- Gentamicin is a commonly used aminoglycoside antibiotic, which is predominantly renally cleared[1]
- Patients on gentamicin require regular monitoring of both the trough gentamicin level and their renal function[1,2]. This aids in identifying any patients who may be experiencing a nephrotoxic effect[1,2]
- This project was undertaken in response to a Serious Untoward Incident involving a patient who suffered an acute kidney injury secondary to gentamicin

## Aim

- To assess and improve clinical practice in response to the Serious Untoward Incident
- To increase the percentage of patients having renal function monitored at the same time as gentamicin levels to 100%

## Method

- A retrospective data collection was conducted in patients with complex appendicitis commenced on gentamicin
- Adherence to the University Hospitals of Leicester Children's Hospital gentamicin guideline was evaluated, focussing on whether or not renal function was being assessed at the same time as gentamicin level (pre-third dose)
- We used a combination of notes and computer records
- An amendment was then made to all existing paper copies of the gentamicin chart on the surgical wards, prompting a U+E to be done with each level
- Data collection was then continued following the alteration

## Results

- On initial data collection 100% of the sample had trough gentamicin levels taken, however only 9% of these patients had renal function monitoring at the same time
- Data collection following implementation of the change revealed there was marked improvement in renal function monitoring whilst on gentamicin to 100% (see Table 1)

| | First stage data collection | Second stage data collection |
|---|---|---|
| Gentamicin level taken | 100% | 100% |
| U+Es taken | 9% | 100% |
| Levels documented on the chart | 71% | 44% |

*Table 1: Results table summary*

## Summary

- The project successfully improved the number of patients having renal function monitoring whilst on gentamicin
- There was consistently good practice when performing gentamicin levels pre-third dose
- The practice of documenting the actual values on the chart can still be improved

*Acknowledgments*
This poster was possible thanks to the support and guidance of Mr Michael John (project lead) and Mr Nitin Patwardhan (project supervisor)

*References*
[1]*The Pharmaceutical Journal*, PJ, 8/15 August 2015, Vol 295, No 7874/5;295(7874/5):DOI:10.1211/PJ.2015.20069096
[2]Chaves BJ, Tadi P. Gentamicin. [Updated 2023 Apr 10]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK557550/

# Do Steroids Save the Day ? Management and Outcomes of Acute exacerbation of Interstitial Lung Disease (ILD) at a district general hospital

Bala, Sithu; Stoll, Sarah; Ballheimer, Hannah; Dattani, Vruti; Hastings, Robert.
Barnet Hospital, Royal Free London NHS Foundation Trust, London, United Kingdom.

## Introduction

Interstitial lung disease (ILD) compasses a diverse range of disorders affecting lung parenchyma. Acute exacerbation of IPF (AE-IPF) is defined as acute respiratory deterioration involving rapid worsening of dyspnoea and hypoxemia with new alveolar abnormalities, typically over a month. [1,2] This definition can be extended into all fILDs. Management is based on expert consensus only, using corticosteroids and antibiotics, with studies citing an in-hospital mortality of 50%. [3] The aim of this study was to retrospectively assess if the instigation of corticosteroids in patients that had been admitted over a one-year period with an AE-ILD had improved outcomes.

## Methods

43 patients with fILD admitted through acute unselected medical take with the working diagnosis of AE-ILD over a one-year period in 2022 were included. Retrospective data was gathered on demographics, lung function, imaging, steroid administration, and mortality.

## Cohort Characteristics

Of the 43 patients (24 males and 19 females) reviewed, the mean age was 74 years. The mean forced vital capacity (FVC) was 65% predicted and the mean transfer factor for carbon monoxide (TLCO) was 45% predicted. 11 had a UIP or Probable UIP pattern, 9 had fibrotic NSIP/organising pneumonia (OP), 5 had fibrotic OP, 9 had fibrotic hypersensitivity pneumonitis (fHP), 2 had smoking related interstitial lung disease (SR-ILD), and 7 were unclassifiable. 19 patients were on maintenance prednisolone, 4 on mycophenolate mofetil (MMF), and 7 were receiving antifibrotic therapy (3 on nintedanib and 4 on pirfenidone).

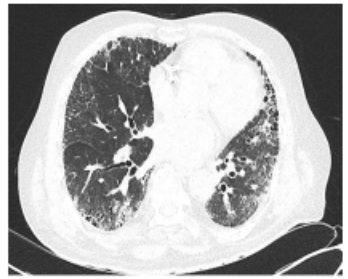


Figure 1: UIP pattern

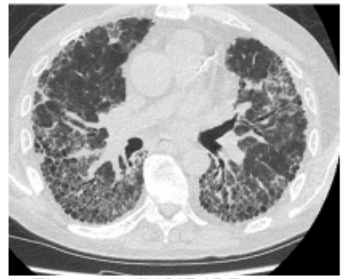


Figure 2: fNSIP/OP pattern

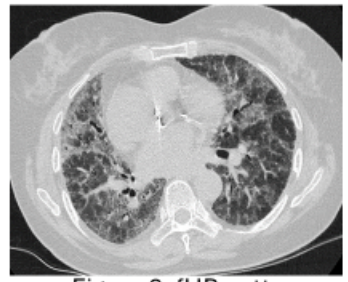


Figure 3: fHP pattern

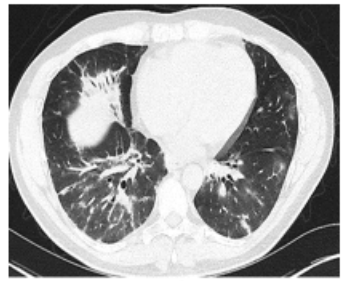


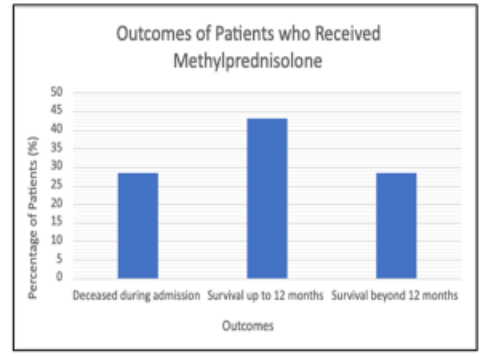
Figure 4: fOP pattern

## Discussion

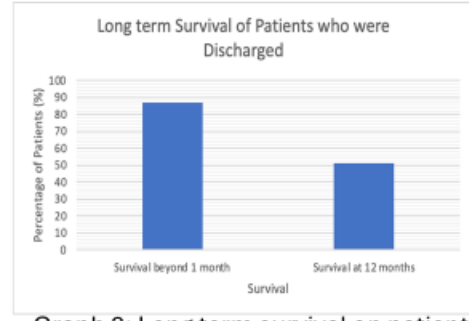
This study underscores poor prognosis with Fibrotic ILD, as demonstrated by the inpatients that died in graph 2, particularly during acute exacerbations, where even aggressive steroid therapy fail to prevent significant mortality. Whilst aggressive steroid therapy may offer short-term benefits, as shown in graph 1, it has not shown to enhance long-term survival as depicted in graph 3. A multidisciplinary approach is key in deciding management options in this cohort of patients, for effective patient-centered care and advanced care planning.

## Results

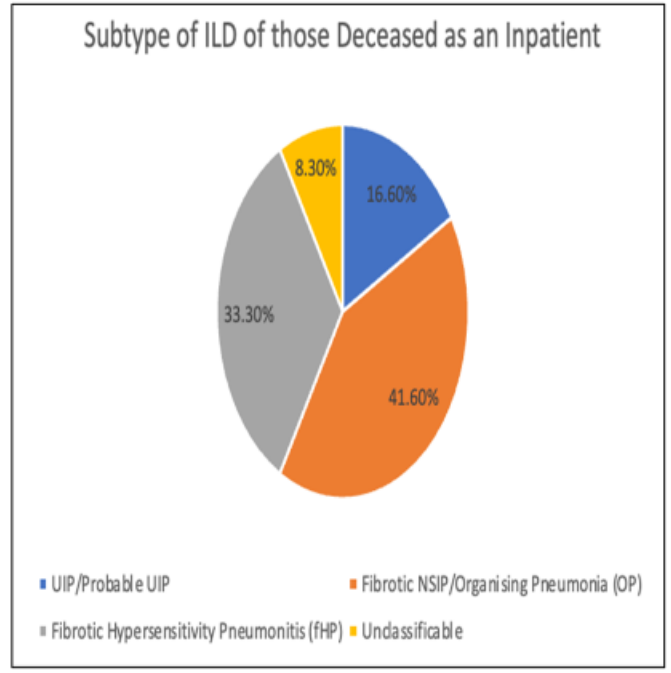
- 19 patients on maintenance prednisolone had an increase or doubling of their dose.
- 7 patients received intravenous methylprednisolone, & of the 7 receiving methylprednisolone, 1 patient had UIP or Probable UIP pattern, 3 had fibrotic NSIP/organising pneumonia (OP), 2 had fibrotic hypersensitivity pneumonitis (fHP), and 1 patient was unclassifiable.
- Despite treatment efforts, the mortality risk remained high with a fatality of 12 patients (27%) during the same admission.
- Of the 11 patients with UIP/Probable UIP, 6 (54%) died within a year, including 2 during hospitalization.




Graph 1: outcomes of patients who received IV Methylprednisolone




Graph 3: Long term survival on patients who were discharged




Graph 2: Subtype of ILD in those deceased as an inpatient

**References**

1. Ganesh Raghu, Martine Remy-Jardin, Jeffrey L et al. Diagnosis of Idiopathic Pulmonary fibrosis. An Official ATS/ERS/JRS/ALAT Clinical Practice Guideline. Am J Respir Crit Care Med 2018; 198: e44-68.
2. Raghu G, Collard HR, Egan JJ, et al. An official ATS/ERS/JRS/ALAT statement: idiopathic pulmonary fibrosis: evidence-based guidelines for diagnosis and management. Am J Respir Crit Care Med 2011; 183: 788–824 .
3. Huapaya JA, Wilfong EM, Harden CT, et al. Risk factors for mortality and mortality rates in interstitial lung disease patients in the intensive care unit. Eur Respir Rev. 2018; 27: 180061.

# A Middle - Aged Woman Presenting With Polyuria And Polydipsia Requiring Referral For An Advanced Diagnostic Investigation

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MED+ 2024

## INTRODUCTION

AVP deficiency, AVP resistance, and primary polydipsia is diagnosed distinctively using copeptin test, utilizing arginine or hypertonic saline, which is more reliable than the water deprivation test for treatment.

## CASE HISTORY

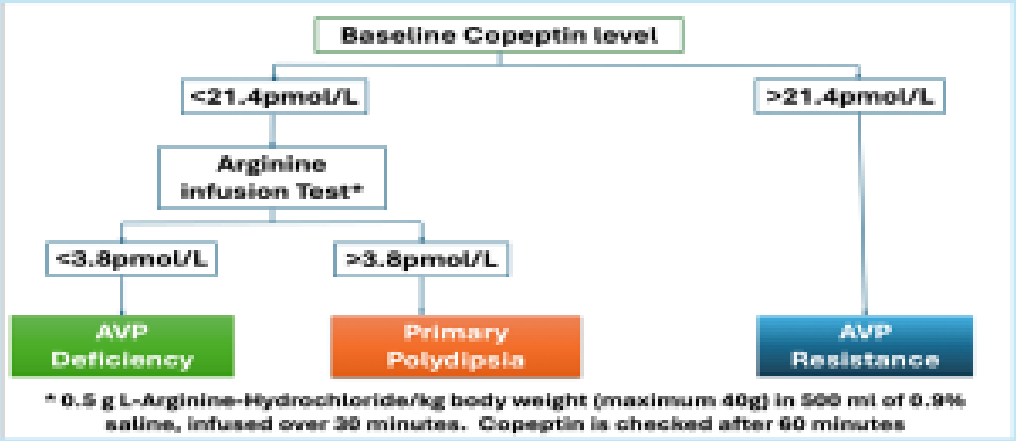
47Y/F with polydipsia, polyuria, and mood swings had an inconclusive WDT and hence was referred for stimulated arginine co-peptin test.

### Water Deprivation Test Interpretation

| Urine Osmolality mosmol/kg | Normal | AVP-Deficiency | AVP-Resistance | Primary Polydipsia | Partial DI |
|---|---|---|---|---|---|
| After Water deprivation | >750 | <300 | <300 | 300-750 | 300-750 |
| After DDAVP | >750 | >750 | <300 | <750 | <750 |

| Time | 09:25 | Water deprivation | 11:30 | 15:12 | DDAVP administered | 17:30 | 20:30 |
|---|---|---|---|---|---|---|---|
| Urine Osmolality mosmol/kg | 125 | | 400 | 408 | | 511 | 650 |

### Arg. Stimulated Copeptin Test




* 0.5 g L-Arginine-Hydrochloride/kg body weight (maximum 40g) in 500 ml of 0.9% saline, infused over 30 minutes. Copeptin is checked after 60 minutes

## RESULTS

WDT Test was Inconclusive. Copeptin level increased from 1.9pmol/L to 6.5pmol/L 60 mins after Arginine stimulation.

## DISCUSSION

Copeptin is an effective marker for AVP release. AVP deficiency is treated with Desmopressin, Our patient had Primary Polydipsia which needs water restriction and psychiatric assessment thereby avoiding unnecessary Desmopressin therapy. Our patient was hence referred to psychiatry unit for appropriate treatment.

## REFERENCES

1.Christ-Crain M. EJE Award 2019: New diagnostic approaches for patients with polyuria polydipsia syndrome. *Eur J Endocrinol*. 2019;181(1): R11–21. 2.Winzeler B, Cesana-Nigro N, Refardt J, et al. Arginine-stimulated copeptin measurements in the differential diagnosis of diabetes insipidus: a prospective diagnostic study. *The Lancet*. 2019;394(10198):587–95.

# Unveiling Paraquat's (Gramoxone) lethal nature – A silent threat

**An observational study of clinical spectra in South India**

Dr Sri Nanditha Azigiri, Dr M Nageswara Rao

## INTRODUCTION

Agriculture is the primary occupation in India resulting in extensive use of herbicides including paraquat (PQ). Deliberate Self-harm by pesticide poisoning is a major public health problem worldwide with approximately 385 million cases being reported each year. (1) PQ is rapidly emerging to be the leading cause of self-poisoning in the Indian Subcontinent. The estimated lethal dose is 10-20 ml of 20% solution. (2) Ingesting PQ can be fatal resulting in Acute Kidney Injury (AKI), acute hepatitis and alveolitis leading to acute respiratory distress syndrome with pulmonary fibrosis being the predominant cause of death. Fulminant quantities ingested causes multi-organ dysfunction syndrome and early mortality. (3) Non deliberate repeated exposure has been linked to chronic diseases including parkinson's. (4)

## OBJECTIVES

To explore the clinical profile, underlying behavioural characteristics, outcomes, and effectiveness of existing treatment options in patients of PQ poisoning.

## METHODOLOGY

This study was conducted over 9 months in 2022 in a tertiary care hospital in India after obtaining Institutional ethical approval. The data was analyzed using SPSS version 22. For the ease of comparison, the patients were classified into 3 groups based on the quantity ingested:

**1.Mild: < 10ml 2.Moderate: 10-20 ml 3.Severe: >20ml**

## RESULTS

Out of a total of 102, 57.8% of them were in 20-40 years age group with 2.78:1 male to female ratio. 43.1% were farmers. 42.1% each consumed moderate-severe quantity. Inter-personal conflict was the most common cause [40.2%]. None of them had history of psychiatric illness. Charcoal hemoperfusion and haemodialysis were offered to 40.1% and 78.4% respectively. Cyclophosphamide was given to 12.7%. None of the recommended treatment options [anti-oxidants, dexamethasone] could offer significant mortality benefit with an overall in-hospital mortality rate of 83.6% (P: 0.001).The most common complication was AKI (94.1%) followed by respiratory failure (86.3%), and acute hepatitis (56.8%). The amount of PQ consumed was significantly associated with mortality (P <0.001).

## CONCLUSION

PQ was banned in over 60 countries which a consequent reduction in pesticide associated mortality. In developing countries, the primary trigger for self-harm is often impulsivity in response to acute psychological distress, with little awareness of the poison's lethality in contrary to western literature where psychiatric illness is the primary trigger. There is an urgent need for large, randomized control trials evaluating the efficacy of triple immunosuppression regimens.

**Figure 1: Symptoms Distribution**

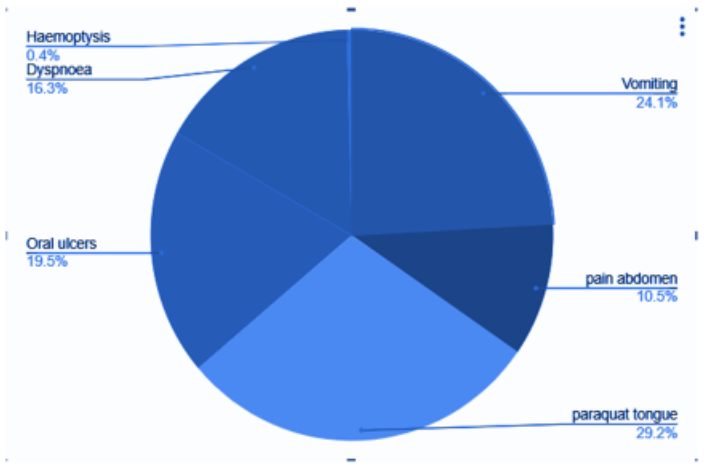
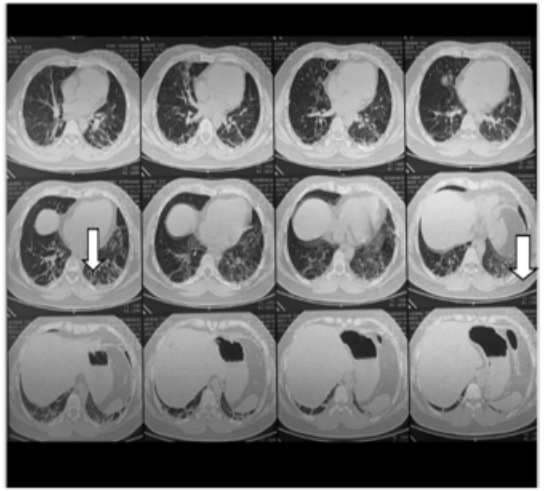



**Table 1: Investigations, Chest Imaging**

| Variables | | Number [N] | Proportion [%] |
|---|---|---|---|
| Blood Urea [mg/dl] | >40 | 86 | 84.3 |
| Serum Creatinine at presentation [mg/dl] | >2 | 85 | 83.3 |
| Alanine aminotransferase | >2 ULN | 9 | 8.8 |
| | >3 ULN | 50 | 49 |
| Chest X-Ray | Infiltrates | 85 | 83.3 |
| HRCT Chest | Paraquat induced lung injury | 58 | 56.9 |
| | Lung fibrosis | 5 | 4.9 |

**Figure 2: HRCT Chest showing Paraquat Induced lung Injury**



## REFERENCE

1.Boedeker W, Watts M, Clausing P, Marquez E. The global distribution of acute unintentional pesticide poisoning: estimations based on a systematic review. BMC public health. 2020 Dec;20:1-9.
2.Delirrad M, Majidi M, Boushehri B. Clinical features and prognosis of paraquat poisoning: a review of 41 cases. International journal of clinical and experimental medicine. 2015;8(5):8122.
3.Agarwal R, Srinivas R, Aggarwal AN, Gupta D. Experience with paraquat poisoning in a respiratory intensive care unit in North India. Singapore Med J. 2006 Dec 1;47(12):1033-
4.CHAKRABARTI N. Trends in research on paraquat-induced parkinsonism. INDIAN JOURNAL OF PHYSIOLOGY AND ALLIED SCIENCES. 2015 Dec 10;69(04):103-16.

# This hidden Ticking Time Bomb needs urgent attention!- A hushed calamity…

***Monisha Tarini Premkumar*** Anglia Ruskin University, School of Medicine & ***Srirahul Premkumar,*** Charles university first faculty of Medicine

## Background

Globally, there is a two to five times increased risk of medics committing suicide than the general population, with the female gender and junior doctors being at a higher risk.
From the UK Office of National Statistics 2020, 72 medical professionals, including doctors, ended their own lives. The COVID pandemic has only worsened this endemic. Recently, a similar trend for medical students (30%) has been noted. This is healthcare profession exigency.

## Aim

To raise awareness among fellow medical students and junior doctors with possible solutions, directions and pathways to handle.

## Methodology

A narrative literature review was conducted from January 2017-June 2024 using key search terms, like 'medical students' 'suicide' 'mental health' on scientific electronic databases to obtain the pertinent data.


Scan me

## Results and discussion

### Modifiable risk factors

1.Academic - Curriculum stress/failures/deadlines

2. Lifestyle - psychosocial stressors, less physical activity, sleep deprivation

3.Workplace - no firm work place relationships during clinical placement which could lead to feelings of isolation, bullying and harassment within a hierarchical workplace culture, high-pressure immense workloads due to staffing shortages, , inadequate salary, poor support system, and current doctors' working pattern with less continuity of care (same clinician for patients care) compromising job satisfaction leading to sources of error, dissatisfaction and complaints.

### Non- modifiable risk factors

1. Personal - Transition to university, family separation and autonomy

2. NHS system - Growing healthcare demands, work complexity, post pandemic digital consultations alienating certain group of patients and doctors, and limited financial resources steering healthcare employee's resilience causing a ***"Domino Effect"*** on the NHS.

As per the Society of Occupational Medicine (2018) this should "start from the first year of medical school, with the Deaneries, Trusts and Royal Colleges being responsible for developing and communicating evidence-informed initiatives and sharing best practice".

***Solution Should aim for Primary Prevention***

## Conclusion

Evidence shows that the current NHS working conditions and associated psychosomatic health problems contribute to the sickness absenteeism, poor staff retention and turnover rates in the UK medical workforce with major patient outcome implications and the healthcare organisations' financial performance. This vicious cycle needs breaking strategies warranting more research- **Let's join together to rectify this.**

## Possible Solutions

Personality trait screening on medical school entry as risk screening tool, Curriculum generation with student's voice and Employee's voice for job crafting should be evaluated in the UK. **Third party support organisations** for medical students and doctors of all grades include "Laura Hyde foundation", "The Louise Tebboth foundation", "Schwartz Rounds" and Dr Clare Gerada, president of the Royal College of General Practitioners, greets people over Zoom for anonymous compassionate care and support for doctors and family who lost their medical relatives to suicide.

**Implementable strategies to support students** - Ensuring an availability of relationship counselling services, access to emergency crisis support, providing additional academic support and self-care mental health screening and coping strategies.

**References**

1. Ahmed, G., & Arzoky, Z. (2019). Suicidal ideation in medical students: a worldwide problem. Advances in medical education and practice, 10, 165–167. https://doi.org/10.2147/AMEP.S199483
2. https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/articles/suicidesintheuk/2020to2022
3. Varshney, K., Patel, H., & Panhwar, M. A. (2024). Risks and Warning Signs for Medical Student Suicide Mortality: A Systematic Review. Archives of Suicide Research, 1–19. https://doi.org/10.1080/13811118.2024.2310553
4. https://www.rcpsych.ac.uk/docs/default-source/improving-care/ccqi/quality-improvement-tools/what-could-make-a-difference-to-the-mental_health_of_UK_doctors_LTF_SOM.pdf

# CA-125 as a tumour marker - Used or Misused !

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GIG CYMRU NHS WALES | Bwrdd Iechyd Hywel Dda Health Board

## Background

Carbohydrate antigen 125(CA125) is also known as mucin 16 (MUC16) since it is encoded by the MUC16 gene, located on chromosome 19.

It was first identified by Bast et al. in 1981. (they isolated the murine monoclonal antibody OC125, which recognises an epitope on a molecule called CA125 – so-named because it is the 125th antibody produced against the ovarian cancer cell line). It is a highly sensitive and low specific tumour marker which is expressed by fetal amniotic, coelomic epithelium, and adult tissues derived from the coelomic and Mullerian epithelia.

CA125 is located in a wide variety of tissues, including; endocervix, endometrium, pleura, pericardium, peritoneum, secretory mammary glands, apocrine sweat glands, intestines, lungs, and kidneys.

CA125 is used in the diagnosis of ovarian cancer together with abdominopelvic scan recommended by the NICE guidelines.

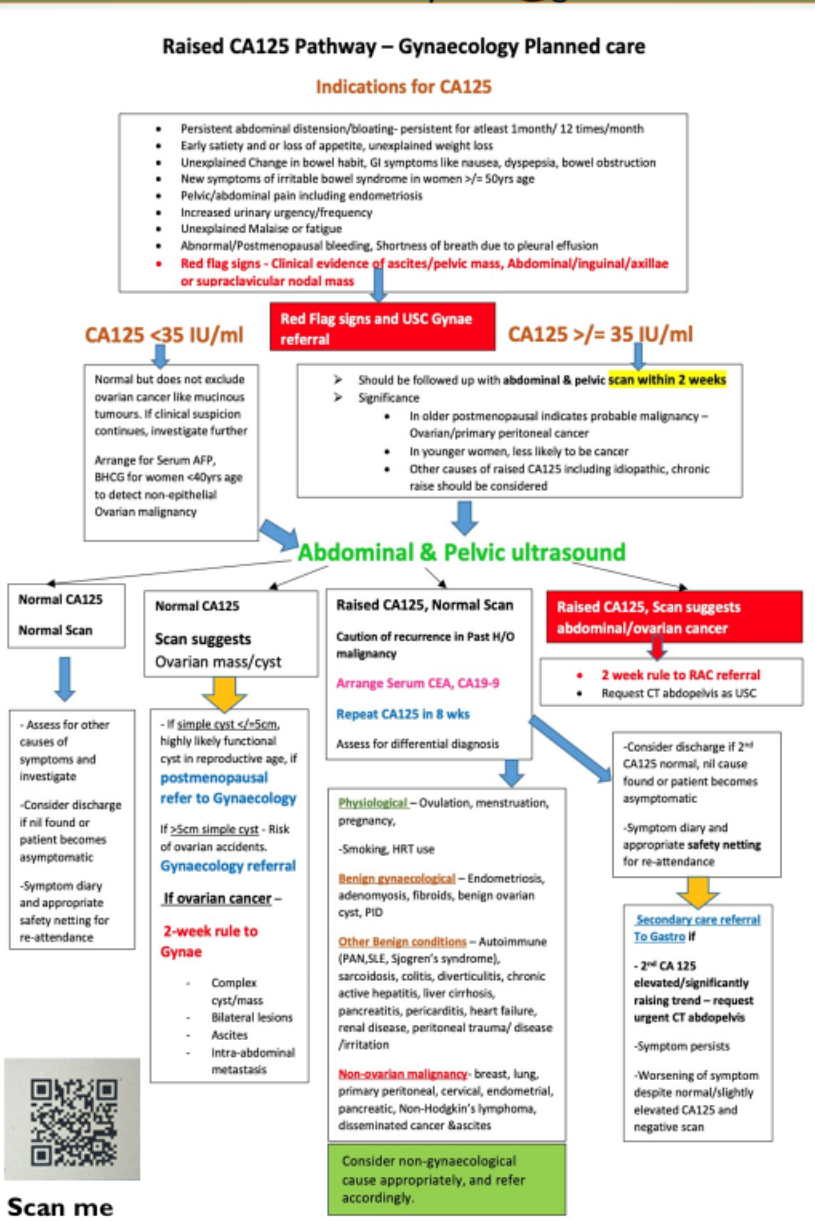
No management is recommended if abdominopelvic scan is normal with a raised CA125.

## Clinical Implication

- Increased GP referrals to secondary care
- Increased patient anxiety while waiting for gynaecology/internal medicine outpatient appointments
- Varied practice of raised CA125 with normal scan management among gynaecologists increasing workload on Gynae-oncology MDT
- Risk of missing non-gynaecological pathology

## Aim

- To assess the current approach of management of raised CA-125 with negative abdominopelvic scans in women among primary and secondary care within Hywel Dda UHB
- To develop a national standard in the evaluation and further management of elevated CA-125 results in gynecology




## Methods used

Using a retrospective audit between April 2021 to April 2022, the current local practice was compared against NICE Guideline CA125 testing criteria by using electronic data collection with key term CA-125. Primary care gynaecology referrals to all sites within Hywel Dda were included except interdepartmental gynaecology referrals. Data was collected and analysed with MS excel with a total sample size of 81.

## RESULTS

- Majority of GPs only requested pelvic scan in contrary to NICE suggesting abdominopelvic scan to rule out non-gynaecological causes of raised CA125
- 33% had no scan requested at primary care referral which delayed diagnosis
- 20% had negative scan with 43% normal CA125 and 57% raised CA125, where there is no national guidance to further management.
- In 16 cases, second CA125 requested in secondary care with varying follow-up in 1,3,6 months. Discrepancies between clinicians necessitates standardised evidence-based approach
- 50% of urgent categories downgraded in secondary care for known fibroid, small simple ovarian cyst, endometriosis, polyp among CA125 of 36-50 units/ml.
- No triaging criteria applied for referral to non-gynaecological pathology.

## Conclusions

Raised CA125 and positive scan with red flag symptoms managed appropriately from primary care up to MDT. However, there are no standard practice noted in grading referral among primary and secondary care if it doesn't fit NICE criteria in managing raised CA-125 with negative scan. As gynaecological cause accounts for raised CA125 in 20%, whereas 80% due to physiological, medication, lifestyle and other system benign/malignant diseases. Hence a primary and secondary care pathways for management of raised CA125 is created for pilot study. to improve quality of service. Urgent need for national guideline on multispeciality management of raised CA-125 is indicated to ensure patient safety. **Time to see the bigger picture.**

References
Moore R, Hollingsworth J, Reynolds T. The role of CA 125 in clinical prac@ce. J Clin Pathol 2006;58:308–12. Reiter M, Costello J, Schwede R, Licon@ C, Chowdd M. Review of commonly used serum tumour markers and their relevance for image interpreta@on. J Comput Assist Tomogr 2015;39:833–34
Hiraike C, Orsa M, Espana P, Provencio M, S ~ anchez A, Cantos B, et al. Cancer an@gen 125 associated with mul@ple benign and malignant pathologies. Ann Surg Oncol 2002;10:150–4. Bell R, McGrew M, Luvegis S, Sheldon T A. Screening for ovarian cancer: a systema@c review. Health technology assessment (2000);
Raised CA125 – what we actually know. Tamara Howe Nara Sokolovsky. Kazal Omar. Farshad Tahmasebi2020; https://doi.org/10.1111/tog.13704NICE guideline on Ovarian cancer: recogni@on and in@al management (CG 122)
NICE guideline on Suspected cancer: recogn@on and referral (NG12) . The RCOG guideline (no.43)on the management of suspected ovarian masses in premenopausal women. The RCOG guideline (no34) on Ovarian Cysts in Postmenopausal Women
British Gynaecological Cancer Society (BGCS) Epithelial Ovarian / Fallopian Tube / Primary Peritoneal Cancer Guidelines: Recommenda@ons for Prac@ce 2017.

# A Rare Case of Paraneoplastic Polymyositis with Rhabdomyolysis in a Patient with Ampullary Adenocarcinoma

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South Tees Hospitals NHS
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MED+

## Introduction

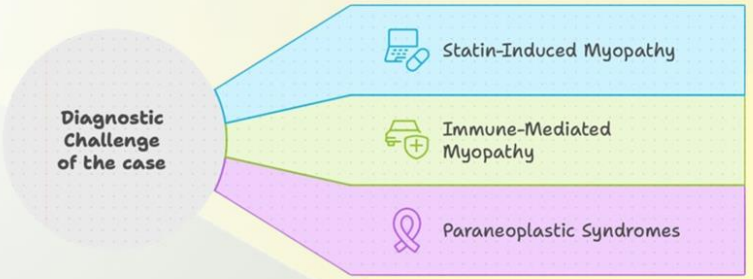
This case highlights a rare paraneoplastic syndrome manifesting as polymyositis with severe rhabdomyolysis in a 74-year-old female with a known diagnosis of ampullary adenocarcinoma.

## Case Presentation

- Presented with worsening myalgia, proximal muscle weakness, and jaundice.
- Analytically, she had a creatine kinase (CK) levels of >38,000 U/L alongside acute kidney injury (AKI) with a serum creatine of 433 and eGFR of 8.
- No recent changes in medication. Long-term statin was discontinued upon suspicion of statin-induced myopathy. Rheumatology review raised concerns for paraneoplastic polymyositis, which was supported by muscle weakness, elevated CK, and ongoing cancer.
- The PET scan revealed no evidence of metastatic disease. Patient was then treated with aggressive intravenous fluids and methylprednisolone. Despite these interventions, she required dialysis due to worsening AKI.
- Subsequently, a percutaneous transhepatic cholangiogram (PTC) was performed after a failed ERCP to relieve biliary obstruction caused by the tumour. The patient eventually deteriorated and experienced complications including hypocalcaemia and worsening renal function.
- She was moved to the intensive care unit for further management, but she ultimately succumbed to acute liver failure due to the advancement of her adenocarcinoma.

## Discussion

- This case illustrates the diagnostic challenge of distinguishing between statin-induced myopathy, immune-mediated myopathies and paraneoplastic syndromes, particularly in the context of malignancy.
- The profound muscle weakness and elevated CK suggested a myositis likely related to the patient's underlying malignancy, rather than a medication side effect alone.
- Management required a multidisciplinary approach involving gastroenterology, nephrology, and rheumatology, emphasizing the complexity of care for patients with concurrent oncological and rheumatological conditions.




## Conclusion

- Paraneoplastic polymyositis, though rare, should be considered in patients with malignancies who present with unexplained muscle weakness and raised CK.
- Early recognition and appropriate management are crucial to prevent severe complications such as rhabdomyolysis and renal failure. Further research is needed to understand the pathophysiological mechanisms and optimal management strategies for such complex cases.

***References***

1. *Merali N, Yousuff M, Pronisceva V, Poddar A. Paraneoplastic polymyositis presenting as a clinically occult breast cancer. Ann R Coll Surg Engl. 2017;99(2):e40-e43. doi: 10.1308/rcsann.2016.0301.*

# Towards Better Psoriasis Care: A Comparative Review of Assessment Practices

Dr. Supriya Sharma, Dr. Susmita Sharma

George Eliot Hospital NHS Trust

## INTRODUCTION

Psoriasis is a systemic, immune-mediated, inflammatory skin disease which typically has a chronic relapsing-remitting course and may have nail and joint involvement.[1] In dermatology clinics, validated tools like PASI, DLQI, PEST and NAPSI should be used for assessment. Additionally, evaluation of BSA, joint and nail involvement, alcohol use and cardiovascular risk should be done.[2]

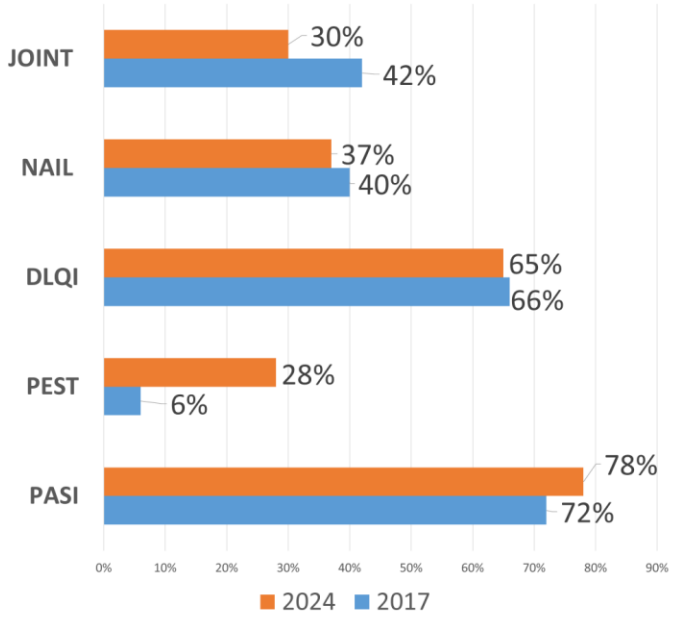
## OBJECTIVES

1. To evaluate the improvement in psoriasis assessment practices over time by comparing data from audit conducted in 2017 and 2024.
2. To identify gaps in the comprehensive assessment of psoriasis patients.
3. To highlight the significance of using standardized, validated assessment tools in dermatology clinics.

## MATERIALS AND METHODS

1. Data were collected from 46 new psoriasis patients, aged 18 and older, from 2020 onwards.
2. Information was obtained from hospital clinic letters, including sex, ethnicity, psoriasis type, and assessment of PASI, DLQI, NAPSI, BSA, joint and nail involvement, alcohol use and cardiovascular risk.

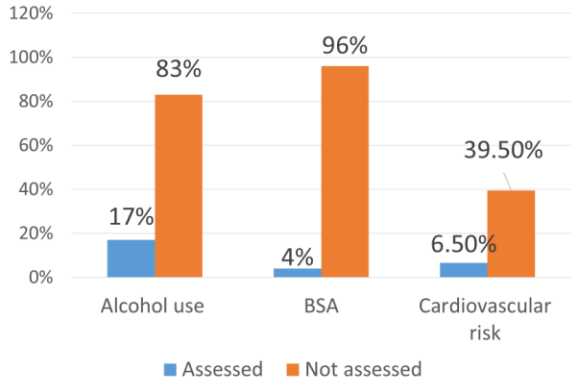
Figure 1




## RESULTS

In 2024 audit of 46 psoriasis patients, 70% were male, and 83% were of white ethnicity, with chronic plaque psoriasis being the most prevalent type, consistent with 2017 audit. Notable improvements were observed in the assessment of PASI (78% in 2024 vs. 72% in 2017), PEST (28% vs. 6%) (Figure 1). However, decline was seen in the DLQI (65% in 2024 vs. 66% in 2017), nail involvement (37% vs. 40%) and joint involvement (30% vs. 42%) (Figure 1). Additionally, alcohol use, BSA, and cardiovascular risk were assessed in 17%, 4%, and 6.5% of the patient, respectively (Figure 2), in 2024, with no NAPSI scoring assessment in either audit.

Figure 2




## CONCLUSION

This project highlights the importance of using validated tools such as PASI, DLQI, PEST, and NAPSI for comprehensive psoriasis assessment. While improvements were seen, gaps remain in assessing joints involvement, nail involvement, DLQI, alcohol use, cardiovascular risks, BSA, and NAPSI. Training staff and ensuring thorough documentation, alongside longer consultation and dedicated psoriasis clinics, would enhance patient care.

## REFRENCES

1. National Institute for Health and Care Excellence (NICE). Psoriasis: Summary. Clinical Knowledge Summaries: NICE; [revised September 2023]. Available from: Psoriasis | Health topics A to Z | CKS | NICE.

2. National Institute for Health and Care Excellence (NICE). Psoriasis: assessment and management Clinical guideline [CG153]. NICE; 24 October 2012 [updated 01 September 2017]. Available from: Recommendations | Psoriasis: assessment and management | Guidance | NICE.

# The audit on compliance of documentation and use of Clinical Frailty Score (CFS) in older patients with lung cancer

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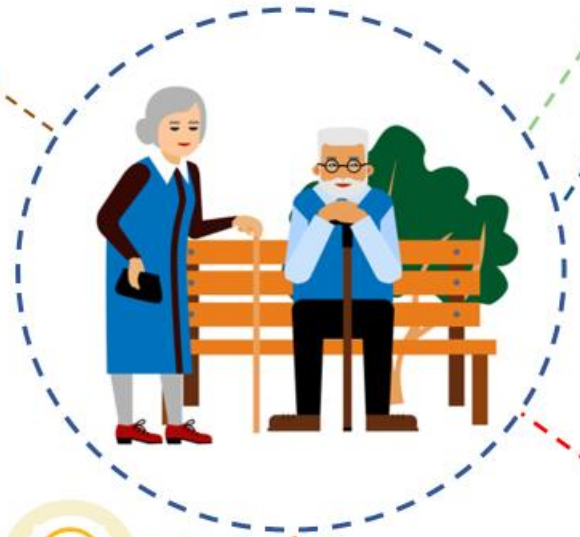
Med+ 2024

## INTRODUCTION

- People over the age of 75 comprise more than a third of cancer diagnoses and more than half of cancer-related deaths (1).
- The Joint Collegiate Council for Oncology (RCP/JCCO/BGS) recommends that all older patients with cancer need to be screened for frailty with a Clinical Frailty Score (CFS) (2).
- All patients with CFS ≥5 should be seen by the Oncogeriatric service.
- This audit aimed to evaluate (a) the compliance in recording and documenting CFS among the elderly people with lung cancer and (b) following up with an Onco-geriatrician when CFS score ≥5.

## METHODS

- Data were collected from Medical and Clinical Oncology facilities at Manchester University NHS Foundation Trust between October 2023 and March 2024.
- Data were obtained from the electronic medical records of 100 elderly individuals with lung cancer.



## RESULT

- The CFS score was completed and documented in 67% of older patients with lung cancer seen in the Clinical and Medical Oncology clinics. Among them, CFS score was documented in 83.87% of Clinical Oncology patients, while 59.42% of patients seen in medical Oncology had CFS recorded.


*Figure 1: Pie charts showing distribution of CFS Documentation.*

- 40% of lung cancer older patients with CFS score ≥5 was seen by Onco-geriatricians.

*Figure 2: Distribution of CFS ≥ 5 patients seen by Onco-geriatricians.*

- Overall, the assurance level was found to be limited, since both standards were met in less than 75% of cases.

## INTERVENTION

- The findings were communicated with both the Clinical and Medical Oncology teams
- Specialist Frailty nurses have been recruited who will be trained to assess and manage frailty in an Oncogeriatric setting.

## ACT

- A re-audit is scheduled to take place in around three or four months.

**References:**
(1) Cancer Research UK (2015). *Cancer incidence by age*. [online] Cancer Research UK.
(2) Royal College of Radiologists (2023). *Implementing frailty assessment and management in oncology services | The Royal College of Radiologists*.
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# Addressing the current challenges of managing hyperlipidaemia in secondary prevention.

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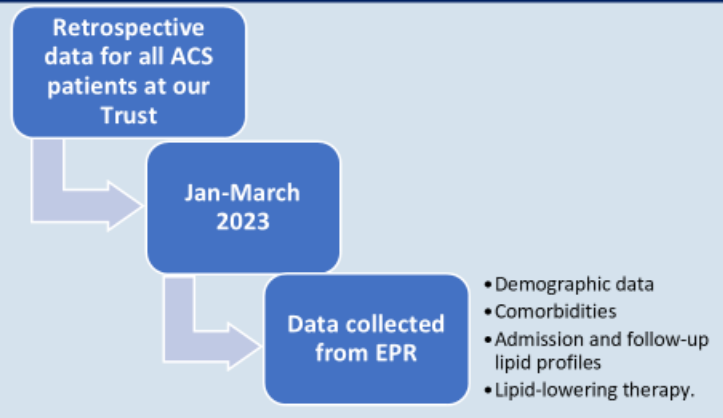
## INTRODUCTION

Patients with acute coronary syndromes (ACS) are at a higher risk of recurrent cardiovascular events. Lipid modification is vital in improving long-term outcomes in ACS patients. NICE and European Society of Cardiology (ESC) guidelines recommend the addition of ezetimibe or anti-protein convertase subtilisin/kexin type 9 inhibitors (PCSK-9i) to statins if target LDL-C levels are not achieved following an ACS.[1,2] Ezetimibe/PCKS-9i provide additional reduction in LDL-C with associated decrease in atherosclerotic cardiovascular disease (ASCVD) risk. [3–5]

However, with increasing clinic waiting lists in both primary and secondary care, achieving target LDL-C levels in this high-risk population remains suboptimal.

We therefore set out to audit our trust's adherence to the ESC guidelines for lipid management in patients following an ACS with the aim of improving follow-up and/or strategies for achieving target lipid levels.

## METHODS




## RESULTS

| Baseline Characteristic | Number (%) |
|---|---|
| Gender | |
| Male | 157 (76) |
| Female | 50 (24) |
| | |
| Comorbidities/ CVD Risk factors | |
| Hypercholesterolemia | 35 (17) |
| T2DM | 79 (38) |
| HTN | 104 (50) |
| Smoking | 57 (27) |
| Family history of ASCVD disease | 19 (9) |
| | |
| ACS presentation | |
| Unstable angina | 19 (9) |
| NSTEMI | 153 (74) |
| STEMI | 35 (17) |

***Table 1:*** *showing baseline characteristics.*

- **Total: 207 patients, 76% male** **Mean age:** 70(±15) years
- **Median LDL-C (mmol/L ):2.1 (1.7-3.1)** on admission vs **1.4(1-2)** follow-up.
- **Median time to follow-up:** 99 days (61-192).

**Subgroup analysis**

- 26 patients (13%) had suboptimal LDL-C on follow-up
- **Median LDL-C (mmol/L):** 3.4(2.8-3.8)-admission vs 1.9(1.8-2.6) at follow-up.
- **Median time to follow-up:** 87 days (62-188)
- Only one patient had been initiated on Ezetimibe.
- **7 patients had an LDL-C of >2.6 on their most recent follow-up with no use of PCSK-9i noted throughout.**

## DISCUSSION

Around 40% of patients with ASCVD fail to reach their target LDL-C levels despite being on statins.[6] Although our audit shows a smaller percentage, it highlights a gap in the optimisation of treatment in patients eligible for ezetimibe/PCSK-9i.

Inclisiran (Leqvio), a PCSK-9i, is considered safe and cost-effective by NICE and is recommended in secondary prevention if LDL-C remains ≥2.6 mmol/L despite maximum lipid-lowering therapy. [2]The NHS Long Time Plan (LTP) advocates for care centred around primary care networks (PCNs) to reduce burden on hospitals/outpatient appointments, saving the NHS >£1 billion/year. Inclisiran is therefore available in both primary and secondary care.[7]

**To address the reluctance to titrate lipid-lowering therapy in primary care, we are;**

- Collaborating with Novartis (Leqvio manufacturer) to raise awareness of Inclisiran within PCNs and secondary care.
- Enhancing patient education at discharge,
- Establish a trainee-led lipid clinic within our ambulatory care unit to combat long wait times at regional lipid clinics

## REFERENCES

1. Mach F, Baigent C, Catapano AL, Koskinas KC, Casula M, Badimon L, et al. 2019 ESC/EAS Guidelines for the management of dyslipidaemias: lipid modification to reduce cardiovascular risk: The Task Force for the management of dyslipidaemias of the European Society of Cardiology (ESC) and European Atherosclerosis Society (EAS). Eur Heart J [Internet]. 2020 Jan 1 [cited 2024 Sep 1];41(1):111–88. Available from: https://dx.doi.org/10.1093/eurheartj/ehz455
2. National Institute for Health and Care Excellence. Inclisiran for treating primary hypercholesterolaemia or mixed dyslipidaemia. Technology Appraisal Guidance 733 [Internet]. 2021;(October 2021):1–28. Available from: www.nice.org.uk/guidance/ta733
3. Cannon CP, Blazing MA, Giugliano RP, McCagg A, White JA, Theroux P, et al. Ezetimibe Added to Statin Therapy after Acute Coronary Syndromes. New England Journal of Medicine [Internet]. 2015 Jun 18 [cited 2024 Sep 1];372(25):2387–97. Available from: https://www.nejm.org/doi/full/10.1056/NEJMoa1410489
4. Schwartz GG, Steg PG, Szarek M, Bhatt DL, Bittner VA, Diaz R, et al. Alirocumab and Cardiovascular Outcomes after Acute Coronary Syndrome. New England Journal of Medicine [Internet]. 2018 Nov 29 [cited 2024 Sep 1];379(22):2097–107. Available from: https://www.nejm.org/doi/full/10.1056/NEJMoa1801174
5. Sabatine MS, Giugliano RP, Keech AC, Honarpour N, Wiviott SD, Murphy SA, et al. Evolocumab and Clinical Outcomes in Patients with Cardiovascular Disease. New England Journal of Medicine [Internet]. 2017 May 4 [cited 2024 Sep 1];376(18):1713–22. Available from: https://www.nejm.org/doi/full/10.1056/NEJMoa1615664
6. Kotseva K, Wood D, De Bacquer D, De Backer G, Rydén L, Jennings C, et al. EUROASPIRE IV: A European Society of Cardiology survey on the lifestyle, risk factor and therapeutic management of coronary patients from 24 European countries. Eur J Prev Cardiol [Internet]. 2016 Apr 1 [cited 2024 Sep 1];23(6):636–48. Available from: https://dx.doi.org/10.1177/2047487315569401
7. Commercial partnerships Introducing inclisiran – a partnership between the NHS and industry to. :3.

# An Unusual Case of Non-Islet Cell Tumour Hypoglycaemia Associated with Solitary Fibrous Tumour of Pleura

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NHS Bradford Teaching Hospitals NHS Foundation Trust

## Introduction

Non-islet cell tumour hypoglycaemia (NICTH) is a rare complication of malignancy and is due to the overproduction of insulin like growth factor 2 (IGF-2) by the tumour cells.[1] Solitary fibrous Tumour of Pleura is a very rare tumour of mesenchymal origin which is usually diagnosed due to compression effects, and can cause NICTH. IGF-2 activates the insulin receptors thus leading to hypoglycemia.

## Case Report

A 74 years old gentleman presented to hospital with an episode of severe hypoglycaemia (Capillary blood glucose 1.8). He was known to have type 2 Diabetes on Linagliptin, previous hemorrhagic stroke with residual left sided hemiplegia, and fibrous tumour of pleura which was managed in past with supportive care only, due to poor functional status. There were no infective symptoms, no history of alcohol excess. His initial blood tests showed normal liver function, kidney function test, normal inflammatory markers. A 9am cortisol and thyroid function tests were in the normal range. His chest xray showed complete collapse of left lung due to tumour(Figure 1). Initial impression was hypoglycaemia in relation to increased tumour burden. Oral linagliptin was stopped.

His capillary blood glucose chart while in hospital showed multiple episodes of hypoglycaemia despite having a good oral intake. A CT scan of abdomen and pelvis showed normal appearance of adrenal and pancreas ruling out the possibility of Adrenal metastasis. Insulin and c peptide levels were sent during an episode of hypoglycaemia. Insulin and C peptide levels showed normal response to hypoglycemia however further investigations showed raised IGF-2 levels indicating Non islet cell tumour hypoglycaemia(Table 1).He was prescribed Dexamethasone with marked improvement in his blood glucose levels.

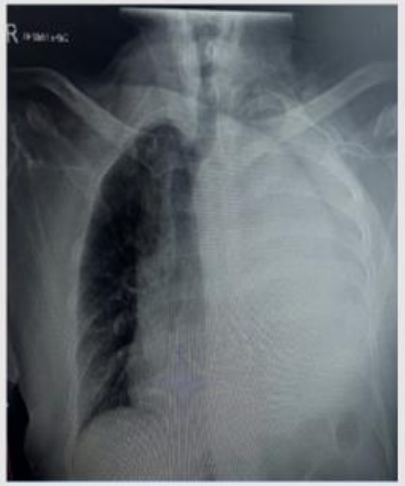


Figure1:Chest xray

| Investigations | Results |
|---|---|
| Cortisol | 397 nmol/L (185- 624) |
| Post synacthen cortisol | 938 nmol/L |
| Free T4 | 12.8pmol/L (7.5-21.1) |
| TSH | 0.34miu/L (0.35-4.7) |
| Plasma Glucose | 1.3 mmol/L (3.5-11.0) |
| Insulin Levels | Less than 10 pmol/L (appropriate for serum glucose levels) |
| C peptide Levels | 1 nmol/L |
| IGF-1 Levels | 6.4 nmol/L (5.2-25.2) |
| IGF-2 Levels | 394 nmol/L |
| IGF-2: IGF-1 | 61.6 (less than 10) |

Table 1: Raised IGF2:IGF-1

## Discussion

Hypoglycaemia in malignancy can be overwhelming for patients. A baseline panel of investigations should be done first to rule out common causes including infection, renal or liver impairment, increased tumour burden, metastasis, adrenal insufficiency and then looking for islet and non islet cell hypoglycemia. Plasma glucose, insulin levels, c peptide, IGF-1 and IGF-2 levels should be sent during an episode of hypoglycaemia before the correction of plasma glucose.[2] IGF-2 mediated hypoglycemia should be considered in cases where insulin and c peptide levels are adequately suppressed for low blood glucose levels. The definitive treatment option for hypoglycaemia is the resection of tumour which is not possible in all cases. Dexamethasone has shown good response in NICTH.[3]

## References

1. Bodnar TW, Acevedo MJ, Pietropaolo M. Management of Non-Islet-Cell Tumor Hypoglycemia: A Clinical Review. The Journal of Clinical Endocrinology & Metabolism. 2014 Mar 1;99(3):713-22.
2. Karamanolis NN, Kounatidis D, Vallianou NG, et al. Paraneoplastic hypoglycemia: An overview for optimal clinical guidance. Metabolism Open. 2024 Sep;23:100305.
3. Teale JD, Marks V. Glucocorticoid therapy suppresses abnormal secretion of big IGF-II by non-islet cell tumours inducing hypoglycaemia (NICTH). Clin Endocrinol (Oxf). 1998 Oct;49(4):491-8.

Acknowledgement: Dr Vinod Joseph
Contact: Jafrikemcolian@gmail.com

# Understanding Influential Social Networks in Dissemination of Practices

Mersey and West Lancashire Teaching Hospitals NHS Trust

*Talha Bin Ayaz, Enna Umar Minhas, Clifford Ediale, Junayd Qadeer, Nicola Jones, Angana Boruah, Laura Lowne, Danielle Mason, Narges Hajisharif, Catherine Atkin, Paul J Sullivan, Natalie ER Beveridge*

## Introduction

Social networks play a crucial role in spreading best practices within healthcare. This project aimed to reduce the length of stay for patients with respiratory infections by identifying key influencers to help drive the adoption of new clinical practices. The key outcomes were:

- Oxygen prescriptions: Started at 60% in week 1, reaching 100% by week 7.
- Oxygen wean: Rose from 0% in week 1 to 100% by week 7.
- IV antibiotics use: A reduction was observed, improving from 30% to 40% over 7 months, representing a 33% improvement.

By utilizing social network analysis to enhance the diffusion of innovation, we achieved positive results and aim to expand this approach to other departments.

## Methods

Social network analysis was performed through pseudoanonymised e-questionnaires, supported by Imperial College London.

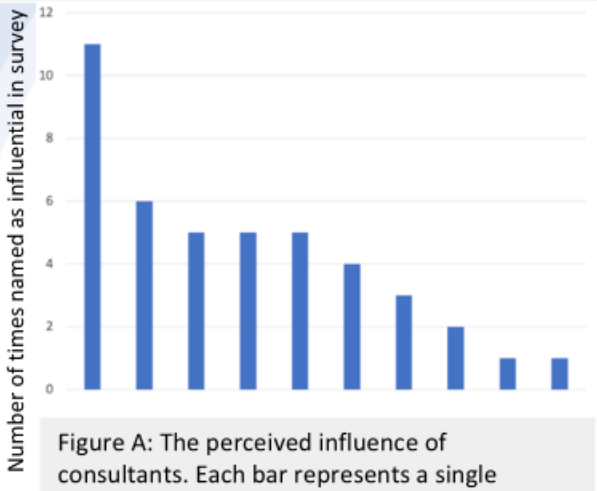



Figure A: The perceived influence of consultants. Each bar represents a single individual.

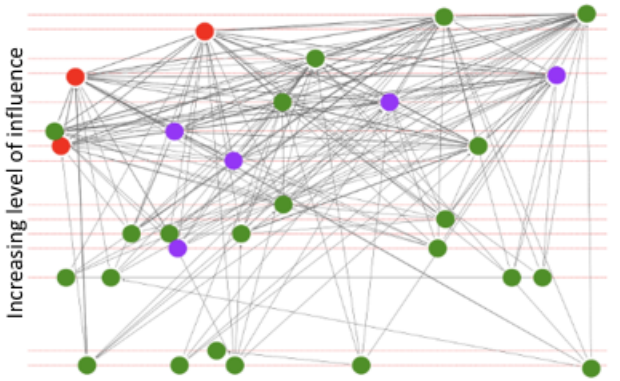
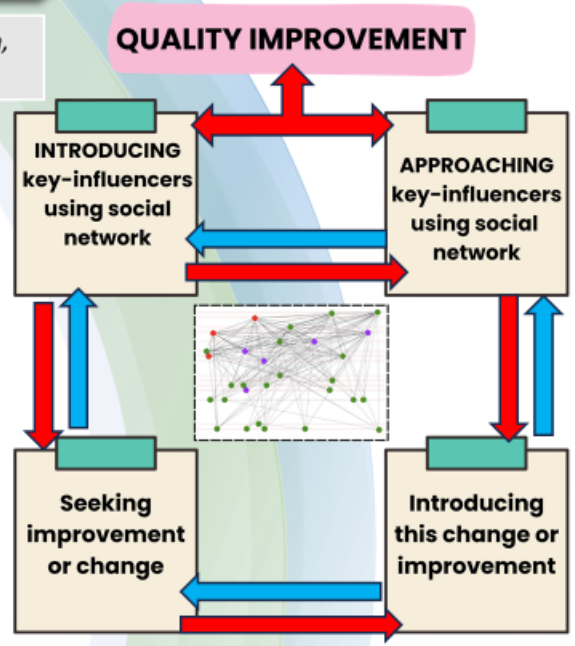



Figure B: Network map illustrating hierarchy of influence with prominent influencers shown closer to the top of the map. Key: Red dots = registrars, Purple = ANPs, Green = sub-registrar trainee doctors.




## Aims

Recognizing influential figures can significantly enhance the adoption of new clinical practices. This project aimed to identify key influencers and peer leaders to help integrate changes identified through PDSA cycles across the department. While PDSA cycles monitor tests of change, successful dissemination requires broad engagement. Ultimately, this initiative seeks to create a sustainable framework for continuous improvement, benefiting patient care across the institution. Insights from this process will guide future projects and the spread of improvements to other departments.

## Results

Responses from 19 multidisciplinary participants showed strong peer-to-peer influence, with key figures identified through social network mapping. Influence didn't always align with hierarchy; ANPs (purple dots, Figure B) were nearly as influential as registrars (red dots), while standout consultants (Figure A) were highly trusted. The map (Figure B) illustrated the hierarchy of influence, with top influencers positioned higher. Key individuals were recruited as "champions" to support the QIP and enhance the diffusion of innovation.

## Discussion

Mapping influence networks enables us to leverage key individuals for early adoption of new practices. Recognizing both hierarchical and peer dynamics is essential for improving patient care, with influential staff driving the diffusion of innovation and supporting long-term success.

We plan to extend this approach to other departments, involving key influencers to sustain and grow quality improvements.

References: Sullivan P, Saatchi G,Younis I., et al. Diffusion of knowledge and behaviours among trainee doctors in an acute medical unit and implications for quality improvement work: a mixed methods social network analysis. BMJ Open 2019;9:e027039, Rogers. Everett M. Diffusion of innovations (1st ed.). New York: Free Press of Glencoe, 1962. Santos, WJ., Graham, ID., Lalonde, M., et al. The effectiveness

# Educational Supervisor input during preparation and after sitting Membership of the Royal College of Physicians exams: A survey of Internal Medicine Trainees and Educational Supervisors across London

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[1]Royal Free NHS Foundation Trust; [2]Chelsea and Westminster Hospital NHS Foundation Trust; [3]King's College Hospital NHS Foundation Trust

## Introduction

- Obtaining Membership of the Royal College of Physicians (MRCP) requires passing a rigorous three-part examination consisting of two written assessments (MRCP Parts 1 and 2) and a clinical station series (PACES)
- Completion of the MRCP diploma is required to progress through Internal Medicine Training (IMT) to Higher Specialty Training (HST)
- Educational supervisors (ESs) are consultant physicians responsible for supervising trainees. A vital part of their role is supporting trainees through MRCP examinations
- We aimed to understand the degree of input ESs have during trainees' exam preparation and exam failure and to understand any differences in perception between trainees and supervisors

## Materials and Methods

- Online surveys were developed using Microsoft forms
- The surveys included multiple choice and Likert scale questions
- Separate surveys were sent to all IMT trainees and ESs across London hospitals via email

## Strengths and Limitations

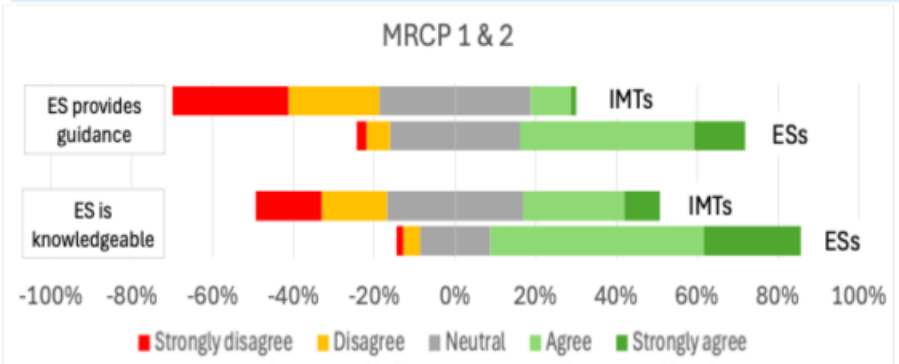
- There was a large number of responses from IMTs and ESs from a wide range of London hospitals.
- We only surveyed London hospitals and there may be geographic variability. In addition, not all participants had completed MRCP Parts 1 & 2 and/or PACES

## Conclusions

- Although ESs are confident that they provide guidance for their trainees during MRCP examinations, IMT experience of this is poor
- Furthermore, IMTs report inadequate ES support following MRCP examination failure
- IMTs need better guidance by their ES in preparing for MRCP exams and support if they fail
- This requires further training for ESs and implementing real-time feedback systems in hospitals for trainees

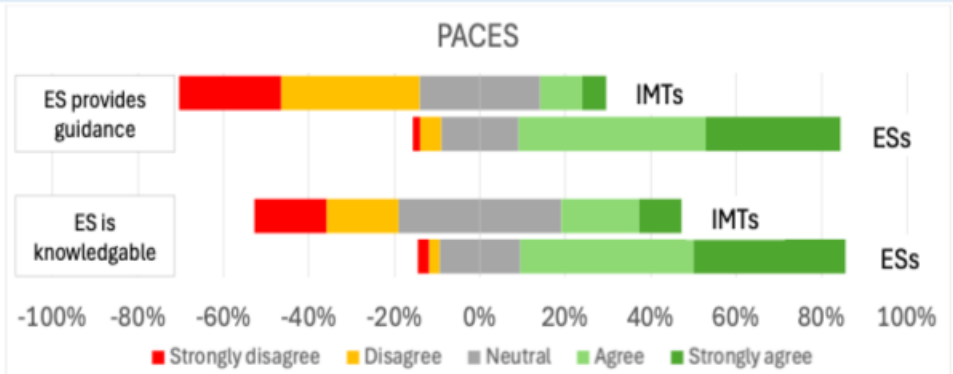
## Results

- 115 IMTs and 121 ESs completed their respective surveys. Of IMT respondents, 80 (70%) had taken the MRCP Part 1 or 2 exam and 71 (62%) the PACES exam during IMT training.
- There were discrepancies in the perceptions of the support ESs offer their trainees after they complete an exam. A quarter of IMTs reported their ES wanted to discuss their result (26% for Part 1 or 2; 21% for PACES) whereas 81% ESs reported to do this.
- Most ESs (60%) reported to provide MRCP Part 1 & 2 guidance but only 11% of IMTs agree. Whilst 77% ESs viewed themselves as knowledgeable, just 34% IMTs concurred (Figure 1). A similar trend was observed with PACES: 75% ESs believed they provided guidance and are knowledgeable but only 16% IMTs believed their ES provided guidance and 28% believed they are knowledgeable (Figure 2).
- There were stark differences in the perceptions of teaching delivered by a trainee's ES. For MRCP Part 1 & 2, just 3% IMTs said they had teaching from their ES whereas 16% of ESs said they delivered teaching (Figure 3). For PACES, only 10% IMTs said they had teaching from their ESs whilst 46% ESs said they gave teaching (Figure 4).
- Of those who failed their exam (16% for Part 1 or 2; 27% for PACES) only 1 trainee discussed their marksheet with their ES. 6% ESs said they reviewed their trainee's marksheet if they failed an exam.




| | | Strongly Agree/Agree | Strongly Disagree/Disagree |
|---|---|---|---|
| Providing guidance | ESs | 60% | 8% |
| | IMTs | 11% | 51% |
| Knowledgeable | ESs | 77% | 6% |
| | IMTs | 34% | 33% |

**Figure 1:** Comparison between ES and IMT responses to Likert scale questions about MRCP 1 & 2. The table provides the overall proportion who degree or disagree




| | | Strongly Agree/Agree | Strongly Disagree/Disagree |
|---|---|---|---|
| Providing guidance | ESs | 75% | 7% |
| | IMTs | 16% | 56% |
| Knowledgeable | ESs | 76% | 5% |
| | IMTs | 28% | 34% |

**Figure 2:** Comparison between ES and IMT responses to Likert scale questions about the PACES exam. The table provides the overall proportion who degree or disagree

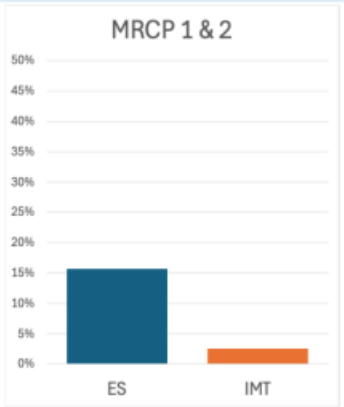



**Figure 3**: Comparison between ES responses who said they delivered teaching for MRCP 1 & 2 and IMTs who said they received any teaching

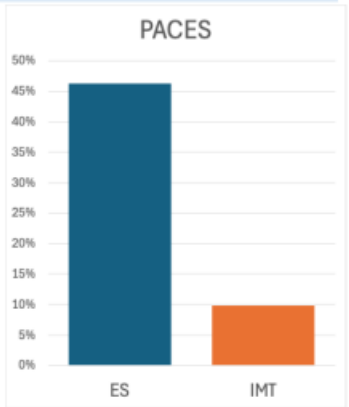



**Figure 4:** Comparison between ES responses who said they delivered teaching for PACES and IMTs who said they received any teaching

# Perceptions of Primary Healthcare Practitioners on the Quality, Efficiency and Utility of an Electronic Cardiology Advice and Guidance Service

T Nyi[1], L Lee[1], Z Tun[2], R Bogle[1,3]

1. Epsom and St Helier University Hospitals NHS Trust, 2. Barts Health NHS Trust, 3. St George's University Hospitals NHS Foundation Trust

Epsom and St Helier University Hospitals NHS Trust

## BACKGROUND

- Advice and Guidance (A&G) allows primary healthcare professionals (PHP) to seek advice from secondary care to improve the efficiency and quality of care[1].
- Epsom and St Helier Cardiology department serves ~5000,000 people in South West London, staffed by 10 specialists responding to ~300 requests per month.

## OBJECTIVE

- To investigate the perception of PHP on quality, utility, efficiency of A&G and its role in supporting the management of patients with cardiac conditions.

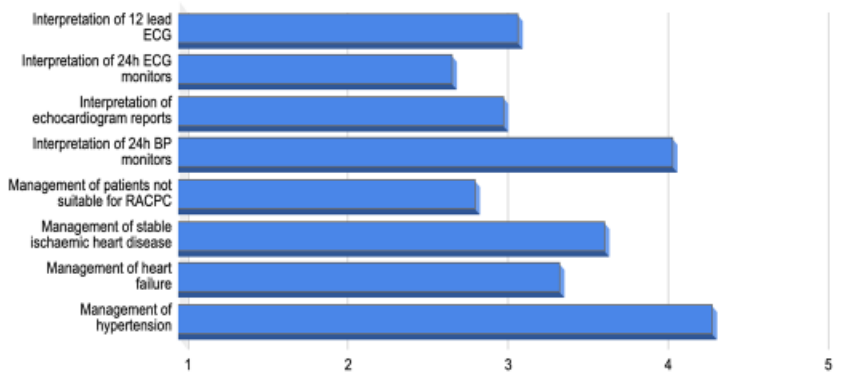
## METHODS

- A&G activity data obtained through eRS system (between 1st April 2021 and 31st March 2024)
- PHP with ≥10 requests during this period were sent an electronic questionnaire[2].
- Results were analysed quantitatively and qualitatively using thematic analysis.

## RESULTS

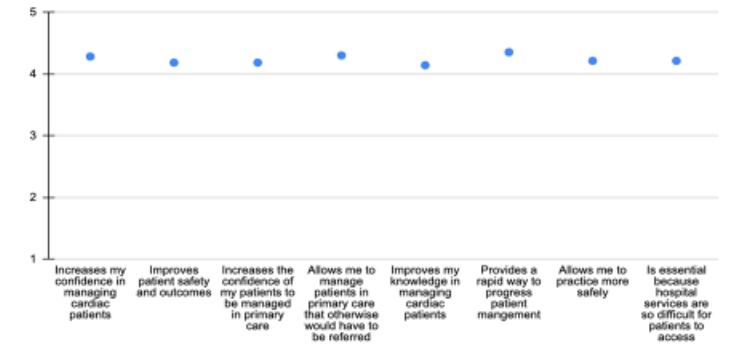
- 74 responses (37% response rate) : 73 General Practitioners & 1 Physician Associate.
- 97% of respondents used other resources (e.g. NICE guidelines, UpToDate) before asking for A&G.
- Yet 91% of respondents reported that A&G was the only source of cardiology advice in the practice.
- 31% reported that their usage had increased over the last year
- The service was frequently used for gaining advice on interpretation of cardiac investigations. (Figure 1)

Figure 1 : How confident do you feel in managing the following (scale of 1 being very uncertain and 5 being very confident)?




- 85% felt the response received addressed their query effectively and rational was clear
- 68% thought that responses were prompt
- The overall feedback was positive in contrast to the rather mixed responses by a snapshot survey in 2022[3].

Figure 2: To what extent do you agree that Cardiology A&G (1 being strongly disagree and 5 being strongly agree),




## CONCLUSION

- A&G is a highly valued tool. It increases confidence in management of cardiac problems and investigations, provides specialist input and improves patient care and efficiency.

*References:*

[1]*NHS Digital Advice and guidance toolkit for the NHS e-Referral service (e-RS). https://digital.nhs.uk/services/e-referral-service/document-library/advice-and-guidance-toolkit [Accessed 8 September 2024]*

[2]*Cardiology advice and guidance survey https://docs.google.com/forms/d/1nau77lppVLtJDM1ly-a4Ldm5lJN3F0mMvrs-4w6WvMo/prefill*

[3]*Two thirds of GPs say 'advice and guidance' is blocking patients who really need a referral https://www.pulsetoday.co.uk/news/workload/two-thirds-of-gps-say-advice-and-guidance-is-blocking-patients-who-really-need-a-referral/ [Accessed 8 September 2024]*

# A sweet case of ulceration: a double-hit aetiology phenomenon

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## Case History

- A gentleman in his fifties presented with rapid onset fever and multiple erythematous nodules on the face and scalp, in addition to ulcerated erythematous erosions on the abdomen.
- The abdominal erosions occurred at the injection site of subcutaneous azacitidine injections, 5 days after completing the first cycle of subcutaneous azacitidine chemotherapy for new diagnosed myelodysplastic syndrome (MDS).
- This was followed 11 days later by tender nodules on the face and scalp.

## Examination

- Fleshy necrotic nodules generalised on the scalp **(Figure 1).**
- Symmetrical superficial erosions on the abdomen, some with a violaceous edge **(Figure 2).**
- Limbs were completely spared.
- No mucosal involvement.

## Investigations

- **Bloods**: **Raised WCC 21, neutrophils 21, ESR 30**. U&Es and LFTs unremarkable.
- **Autoimmune screen:** ANA, ANCA and ENA negative.
- **Blood borne virus screen**: HIV, hepatitis and syphilis negative.
- **Imaging**: Abdominal ultrasound unremarkable. CT thorax abdomen and pelvis showed normal visceral organs with no evidence of malignancy or lymphadenopathy.
- **Histology**: **Neutrophilic infiltrates involving the dermis with a few necrotic keratinocytes and overlying ulcerated epidermis and no evidence of leukocytoclastic vasculitis**.

## Management

- **Diagnosed with Sweet syndrome secondary to azacitidine chemotherapy and MDS.**
- Azacitidine chemotherapy was held.
- IV methylprednisolone 50mg over 3 days then oral prednisolone 40mg once a day which was gradually weaned.
- Betnovate ointment once a day to erythematous nodules.
- Skin healed leaving post inflammatory hyperpigmentation.

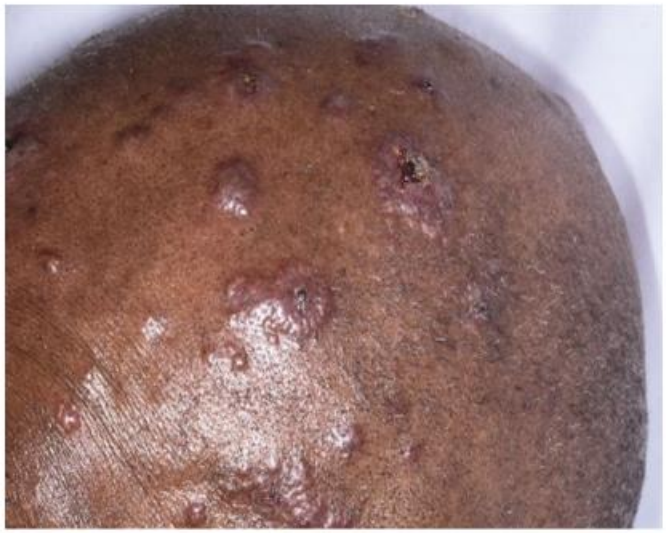

Figure 1: Multiple erythematous nodules on the scalp.

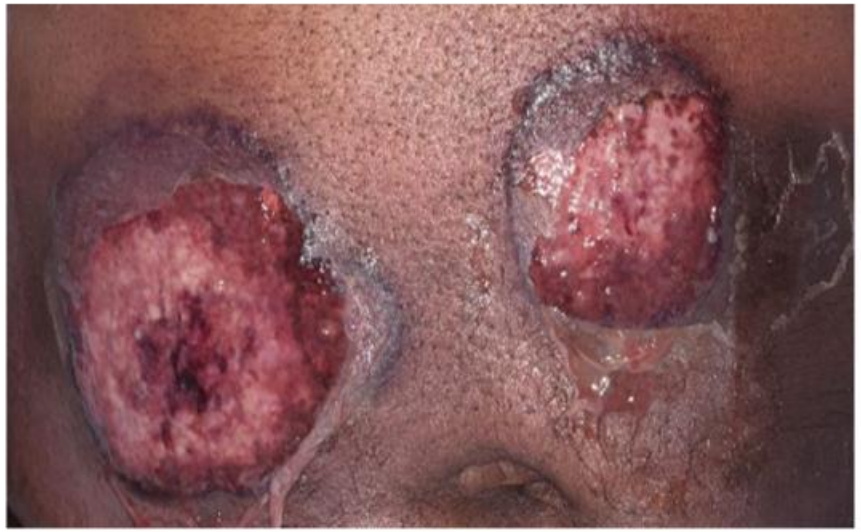

Figure 2: Ulcerated erythematous erosions on abdomen.

## Discussion

- **Sweet syndrome** is an acute febrile neutrophilic dermatosis that presents with tender erythematous papules or nodules consisting of sterile neutrophilic infiltrates.
- Causes include malignancy, inflammatory conditions and drug induced. It can also be idiopathic.
- 80% of malignancy associated Sweet syndrome are secondary to haematological diseases and MDS is a known cause of Sweet syndrome.
- Azacitidine is an antineoplastic drug and a mainstay of treatment of MDS.
- Sweet syndrome, secondary to Azacitidine is rare with only a few documented cases in the literature.
- **In this case, the patient had two risk factors, MDS and azacitidine, predisposing him to Sweet Syndrome**.

## References

1.Sfrijan D, Visan SM, Diaconu B, Zurac S, Scurtu C. A Case of Sweet's Syndrome Secondary to Myelodysplastic Syndrome - Diagnostic and Treatment Challenges. Maedica (Bucur). 2016 Jun;11(2):154-157. PMID: 28461837; PMCID: PMC5394578.
2. Ferea CR, Mihai SN, Balan G, Badescu MC, Tutunaru D, Tatu AL. Sweet Syndrome Associated with Myelodysplastic Syndrome-A Review of a Multidisciplinary Approach. Life (Basel). 2023 Mar 16;13(3):809. doi: 10.3390/life13030809. PMID: 36983964; PMCID: PMC10053503.
3. Waghmare P, Patra S, Thirunavukkarasu B, et alAzacytidine-induced Sweet's syndromeBMJ Case Reports CP 2022;15:e252329.
4. Mechanism of drug-induced lupus. I. Cloned Th2 cells modified with DNA methylation inhibitors in vitro cause autoimmunity in vivo
5. Trickett HB, Cumpston A, Craig M. Azacitidine-associated Sweet's syndrome. Am J Health Syst Pharm. 2012 May 15;69(10):869-71. doi: 10.2146/ajhp110523. PMID: 22555082.

# Improving Respiratory ward discharge summary documentation: A quality improvement project

NHS East and North Hertfordshire NHS Trust

*Authors: Thaw Tar Soe, Yadee Maung Maung Myint, Katie Chong*

## Introduction

Discharge letters safely transfer key information about patients' hospital stay from secondary care to primary care.[1] They allow future colleagues to understand what occurred during a patient's hospital stay. Clear communication and information deficiency can lead to failure in facilitating safe and effective ongoing care once patients leave the hospital. [2] So, there is a need to improve the quality of discharge documentation, and we have implemented this project in the Respiratory ward, at Lister Hospital.

## Materials and methods

Between October 2023 and July 2024, for each cycle, 15 random discharge summaries from the respiratory ward were selected for data collection and analysis against standards using sequential plan, do, study, and act (PDSA) cycles. With different interventions after each cycle such as delivering presentations and posters [1], awareness regarding the importance of discharge summaries was promoted.

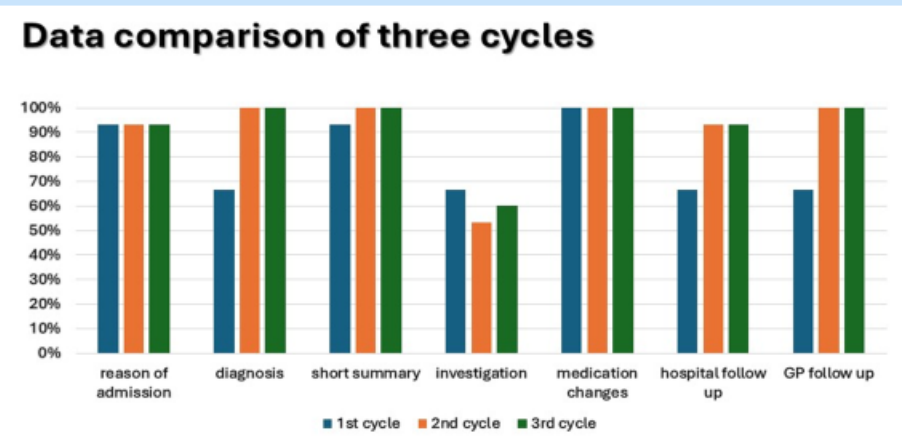


Fig1: Data comparison from the first, second, and third PDSA cycles

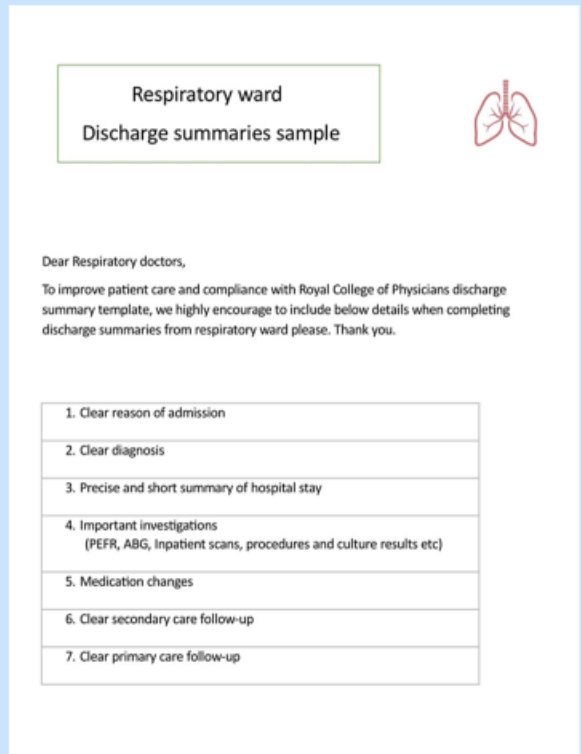


Fig 2: Poster of Respiratory ward discharge summary sample [3]

## Conclusion

Overall, there has been a significant improvement in discharge summary documentation at the end of the third cycle with interventions such as posters[1] and presentations. Interestingly, the documentation of important investigation results still needs to improve, but we plan to promote further awareness by delivering presentations to junior doctors during each changeover. With this project, we have analyzed the quality of discharge summaries, preventing missing important information from secondary to primary care that will provide patient safety and a long-term care plan.[1-2]

## References

1. Phoebe Scarfield1, Thomas David Shepherd1, Caitriona Stapleton2, Improving the quality and content of discharge summaries on acute medicine wards: a quality improvement project
2. Sumeet L. Banker, MD, MPH, corresponding author* Divya Lakhaney, MD, A Quality Improvement Approach to Improving Discharge Documentation, Pediatr Qual Saf. 2022 Jan-Feb; 7(1): e428.
3. Royal College of Physicians E-discharge summary self-assessment checklist

# "Where there's smoke…"; A case of paraneoplastic limbic encephalitis

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## Introduction

Paraneoplastic neurological syndromes (PNSs) are heterogeneous groups of immune-mediated reactions initiated within malignancies, subsequently leading to neuronal destruction or functional blockade. Limbic encephalitis (LE) primarily affects limbic system which consists of thalamus, hypothalamus, basal ganglia, cingulate gyrus, hippocampus and amygdala. LE shows extensive diversity in symptoms from delusions, hallucinations, irritability, aggression, subacute confusion, memory impairment, and seizures. Medial-temporal lobe is the usual site of origin of seizures.

## Case presentation

a 53-year-old male secondary school teacher presented with self-neglect and odd behaviour, including smoking cigarettes in the staff room at his school. He did not have any insight on the symptoms but reported headache. He was oriented to people and place but not time. He had no significant past medical history. On examination, bilateral lower limb tone and brisk reflexes were found to be increased. He was admitted to the acute medical unit with diagnosis of possible meningoencephalitis and was treated with antibiotics and acyclovir whilst awaiting CSF analysis. Subsequently his agitation deteriorated and he had focal seizures, for which he underwent sedation and intubation

## Case progress

**CSF analysis :**
CSF protein - 0.7 g/L
CSF glucose - 4.2 mmol/L
White cells - 17 ( 20% polymorphs, 80% lymphocytes)
RBC - 6
Negative viral PCR, culture, neuronal antibody tests (CASPR2, LGI1, NMDA)

**Blood tests:**
neutrophilia and mild lymphopenia, unremarkable electrolytes and LFTs
Negative VDRL, HIV, ANA, ENA, ANCA, Ant-Hu, Anti-Yo, Anti-Ri, CV2/CMRP, ZiC-4, VGKCAb, Anti-MOG, Anti-GAD, DPPXAb, neurofilament light chain
**Positive GABAB receptor antibodies** (Anti-$GABA_BR$)

**Imaging studies**
Day1 CT brain: unremarkable
Day5 repeated CT brain & cranial venogram: Hypodensity of the left medial temporal lobe
Day10 MRI brain: left medial lobe encephalitis ( Figure 1)
**Diagnosis :** Autoimmune limbic encephalitis

CT ( thorax, abdomen & pelvis) with contrast (Figure 3): **mediastinal mass**
**Histology:** small cell lung cancer (SCLC) staging T1B N2/N3 M0

**Treatment**
plasma exchange
pulse methylprednisolone
Chemotherapy and radiotherapy for SCLC

9 month later
MRI brain : complete resolution of inflammatory changes. (Figure 2)

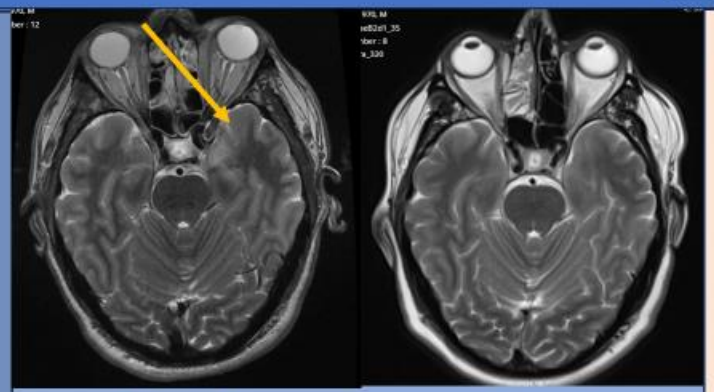


Figure 1



Figure 2

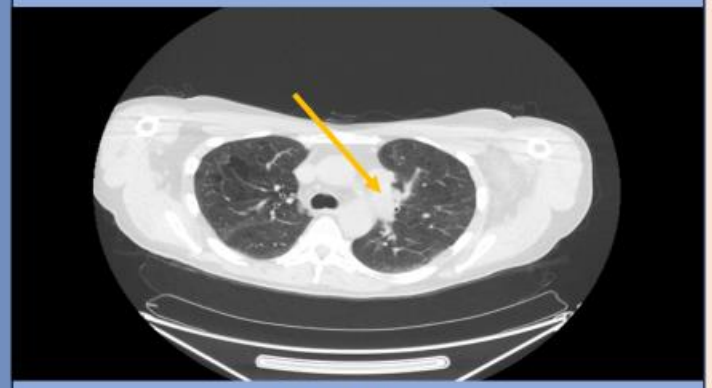


Figure 3

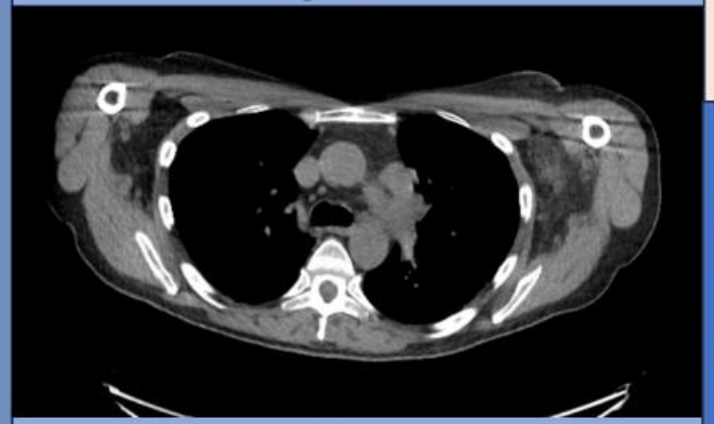


Figure 4

## Discussion

- Diagnosing LE is rather challenging due to non-specific presentations, multifarious antibody variation including seronegative variants and understandably less suspecting clinicians on acute presentations as compared with more prevalent differential diagnoses such as infectious causes.
- >65% LE patients were originally suspected of having a different diagnosis such as a primary psychiatric illness, a neurodegenerative disease, or epilepsy
- 50% of cases with anti-$GABA_BR$ antibody-associated encephalitis suffer from small cell lung cancer (SCLC)/ pulmonary neuroendocrine tumors.
- Anti-$GABA_BR$ antibodies related autoimmune encephalitis cases are known to be associated with poor prognosis and high mortality
- The management strategies of Autoimmune paraneoplastic LE includes treating underlying malignancy alongside immunosuppression or antibody removal.

### References

1) Gultekin SH, Rosenfeld MR, Voltz R, Eichen J, Posner JB, Dalmau J. Paraneoplastic limbic encephalitis: neurological symptoms, immunological findings and tumour association in 50 patients. Brain. 2000 Jul;123 ( Pt 7):1481-94.
2) Baumgartner A, Rauer S, Hottenrott T, Leypoldt F, Ufer F, Hegen H, Prüss H, Lewerenz J, Deisenhammer F, Stich O. Admission diagnoses of patients later diagnosed with autoimmune encephalitis. J Neurol. 2019 Jan;266(1):124-132.

# Case Report: Thyrotoxic periodic paralysis secondary to a T3 analogue contained within a weight loss supplement.

Dr. Govindagowda, Praveenkumar Katarki & Dr. Ian Tanswell

Royal College of Physicians

NHS The Shrewsbury and Telford Hospital NHS Trust

## Introduction

Thyrotoxic periodic paralysis (TPP) is a rare but potentially life-threatening complication of hyperthyroidism.

It is characterised by intermittent muscle weakness or paralysis, which is frequently accompanied by hypokalaemia. Although historically associated with young east Asian males, TPP is now being recognised in individuals of diverse ethnic backgrounds. This recognition is frequently precipitated by the unregulated use of thyroid hormone analogues for weight loss (1)

## Case Report

- 34-year-old Caucasian male who presented with acute quadriplegia.
- Evidence of hypokalaemia (serum K+ levels of 1.8 mmol/L).
- The test results (Table 1) revealed suppressed TSH levels (< 0.01 mIU/L), elevated free T3 levels (9.8 pmol/L), and lowered free T4 levels (4.0 pmol/L).
- Secondary to obtaining weight loss pills containing T3 analogue via the internet.

## Clinical Images

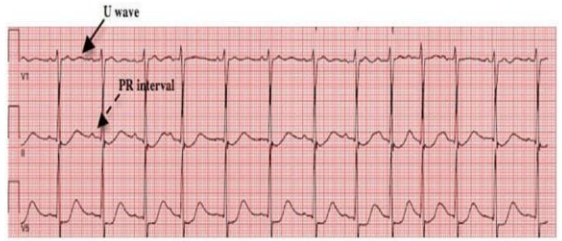
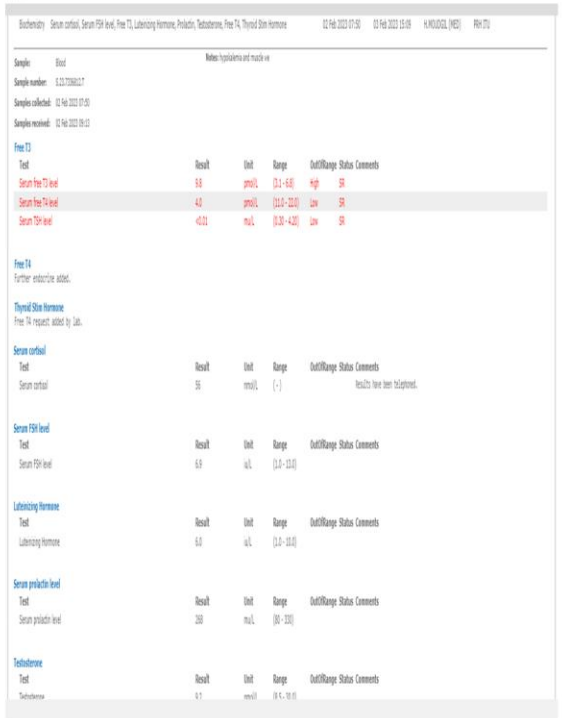



**Figure 1.** The patient's potassium was initially 1.7 meq/L. The PR interval is prolonged and prominent U waves are present.



## Results

- Serum K+levels 1.8 mmol/L
- TFTs

Potassium replaced by intravenous administration (5-5.5mmol/L)

Motor function fully recovered.

## Diagnosis

A diagnosis of TPP in the presence of thyrotoxicosis due to elevated serum triiodothyronine levels. Weight loss supplement deemed to be the culprit.

## Discussion

•This case emphasises the potential dangers of unregulated T3 analogue usage, highlighting an uncommon yet serious complication.

•Abuse of T3 analogues can result in serious metabolic abnormalities, such as potentially life-threatening cardiac arrhythmias, seizures, and TPP [2, 7].

•The patient's atypical presentation, as a Caucasian male, underscores the significance of a comprehensive differential diagnosis when assessing acute quadriplegia, particularly in the presence of a history of hyperthyroidism, irrespective of ethnicity [3].

## Discussion

- Timely diagnosis and prompt treatment, which includes replenishing potassium levels and stopping the harmful substance, typically are essential for preventing complications and ensure a positive result [5].
- This case highlights the need of increased awareness among healthcare professionals and the public regarding risks associated with unregulated T3 analogue usage [6, 8].

## Conclusion

A high index of suspicion and public health measures to regulate the ingredients in weight loss supplements are necessary to address the problem of T3 analogue abuse disguised as weight-loss supplements.

## References

1. . Eriksson U, Eriksson O, Olsson T, Lindbladh C, Lundqvist M, Hansson SR, et al. Differences in associations of antiepileptic drugs and hospitalization due to hyponatremia: A population-based case-control study. Seizure. 2018;59:28-33. doi: 10.1016/j.seizure.2018.03.007
2. Gaspar P, Bessa F, Meireles PA, Parreira I, Mota C. Sweet Taste Dysgeusia in a Patient with Indapamide-Related Hyponatremia: Case Report and Review of the Literature. Cureus. 2021;13(2):e13091. doi: 10.7717/peerj.13091
3. Panayiotou P, Jones A, Mossman S, Hannan CJ. Unpleasant sweet taste: a symptom of SIADH caused by lung cancer. BMJ. 1995;311(7010):806. doi: 10.1136/bmj.311.7010.806

# Establishing the impact of computerised tomography coronary angiography following venous graft percutaneous coronary intervention on management decisions and long-term outcomes

*Rayner TA[1], Mathur A[1,2], Rathod K[1,2], Jones D[1,2]*

*[1] St Bartholomew's Hospital, London, UK; [2]Queen Mary University London, London, UK*

## INTRODUCTION

- The number of people living with coronary artery disease is increasing, and the gold standard treatment for triple vessel disease is the coronary artery bypass graft (CABG).
- There are therefore a growing number of patient's living with venous grafts following CABG.[1]
- Venous grafts are more likely to fail than arterial grafts, frequently requiring venous graft percutaneous coronary intervention (VG-PCI).
- These procedures are hampered by technical complexity and complications, and the risk of venous graft disease recurrence is high.[2]
- Computerised tomography coronary angiography (CTCA) has demonstrated excellent sensitivity and specificity in identifying venous graft disease,[3] but its utility following VG-PCI and impact on outcomes remains unknown.

## AIMS

To investigate the utility of CTCA in identifying venous graft disease following VG-PCI and its impact on management planning and long-term outcomes.

## METHODS

- Design: Single-centre, retrospective study
- Population: patients undergoing VG-PCI between September 2016 and September 2022.
- Identified patients who had a CTCA after VG-PCI and recorded the indication, findings and action taken following the CTCA.
- Compared the long-term outcomes of patients in the CTCA and no CTCA cohorts using Multivariable Cox proportional-hazard regression models.
- Outcomes of interest were cardiovascular mortality, major adverse cardiovascular events (MACE), reinfarction, repeat angiogram and venous graft specific-MACE, defined as MACE with a proven venous graft lesion at angiogram.

## RESULTS

- 366 patients underwent VG-PCI during the study period. Seventy-eight (21.3%) had a CTCA following VG-PCI.
- Figure 1 summarises the actions taken when the CTCA showed VG-PCI graft occlusion.
- The time to CTCA was highly variable (median 8 months, interquartile range 15 months), as were the indications for CTCA.
- Patients receiving CTCA following VG-PCI were significantly less likely to suffer cardiovascular mortality (multivariable-adjusted hazard ratio [HR] 0.20, 95% confidence interval [CI] 0.059-0.65, p=0.0068, Figure 2A) and MACE (HR 0.59, 95% CI 0.36-0.96, p = 0.035, Figure 2B). There was no evidence of a difference for all other outcomes.

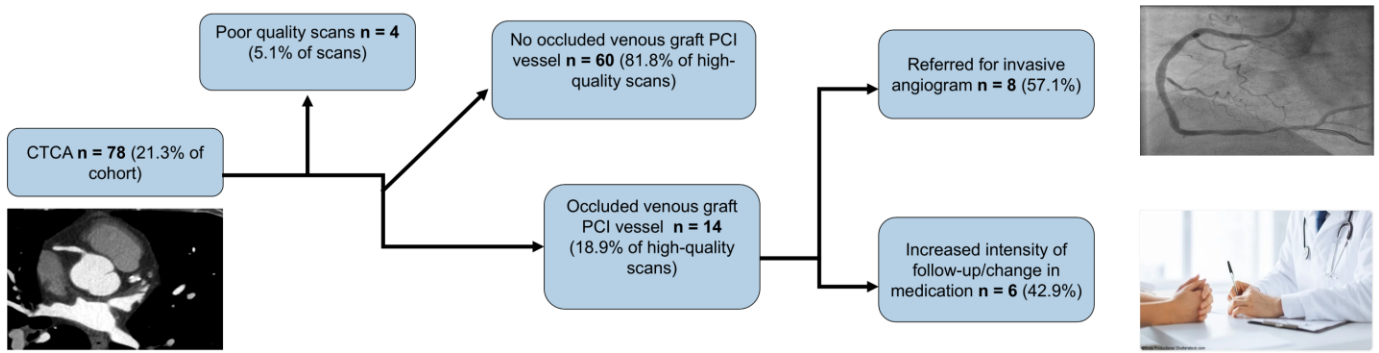
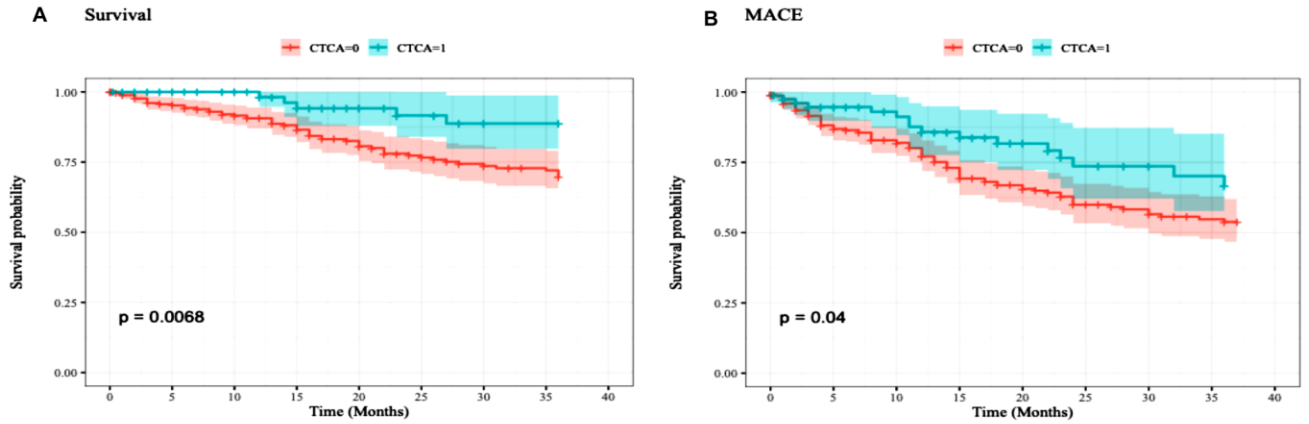



**Figure 1.** A summary of the actions taken when the CT coronary angiography (CTCA) demonstrated venous graft percutaneous coronary intervention vessel occlusion (images courtesy of Google images and Radiopaedia; PCI = percutaneous coronary intervention).




**Figures 2A and 2B.** Kaplan-Meier curves comparing cardiovascular mortality and major adverse cardiovascular events (MACE) for the CT coronary angiography (CTCA) and non-CTCA cohorts, respectively

## CONCLUSIONS

- CTCA can reliably detect disease in venous grafts that have undergone VG-PCI
- This may lead to prompt revascularisation and/or significant changes to medical management.
- This may lead to a reduction in MACE and cardiovascular mortality in patients post VG-PCI.
- There remains uncertainty over the optimal timing of CTCA post VG-PCI and there are no established protocols.
- There were relatively few venous graft specific events, making it challenging to establish the impact of CTCA on venous graft specific-MACE.
- Studies in larger cohorts are required to substantiate our findings.

## REFERENCES

1. National Institute for Cardiovascular Outcomes Research (NICOR). National Cardiac Audit Programme – Adult Cardiac Surgery (Surgery Audit) 2020 [Internet]. https://www.nicor.org.uk/wp-content/uploads/2020/12/National-Adult-Cardiac-Surgery-Audit-NACSA-FINAL.pdf [accessed 13 June 2024].
2. Xenogiannis I, Zenati M, Bhatt DL, et al. Saphenous Vein Graft Failure: From Pathophysiology to Prevention and Treatment Strategies. *Circulation*. 2021;144(9):728-745.
3. Meyer TS, Martinoff S, Hadamitzky M, et al. Improved non-invasive assessment of coronary artery bypass grafts with 64-slice computed tomographic angiography in an unselected patient population. *J Am Coll Cardiol*. 2007;49(9):946-50.

**Images**

- CTCA image taken from Radiopaedia.org: Case courtesy of Craig Hacking, Radiopaedia.org, rID: 78436
- Invasive coronary angiogram image taken from Radiopaedia.org: Case courtesy of Joachim Feger, Radiopaedia.org, rID: 176258

# An Interdisciplinary approach: Improving Neurogenic Bowel Management in a Palliative care setting, a Quality Improvement Project.

St Joseph's Hospice
Serving East London and the City

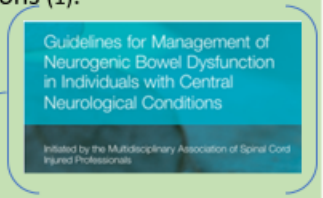
Dr Vaishnavi Ragupathy (IMT trainee)
Dr Eilis Kempley (General medicine Registrar)
Dr Andrew Tysoe- Calnon (Palliative care consultant, medical director)

## PROBLEM

*Neurogenic bowel (NB), dysfunction of the colon or rectum due to loss of normal sensory or motor function, is not being identified in hospice patients. This results in patients getting suboptimal bowel care, which can lead to increased symptom burden causing distress.*

## EVIDENCE

Guidelines help the planning, implementation and evaluation of practical bowel management for individuals with central neurological conditions (1).




## IN PALLAITIVE CARE?

Patient population at risk/ affected:

- Metastatic cord compression
- Motor neuron disorder
- Stroke
- Parkinson's Disease

## MEASURMENTS

Process:

1. Staff surveys assessing knowledge and confidence

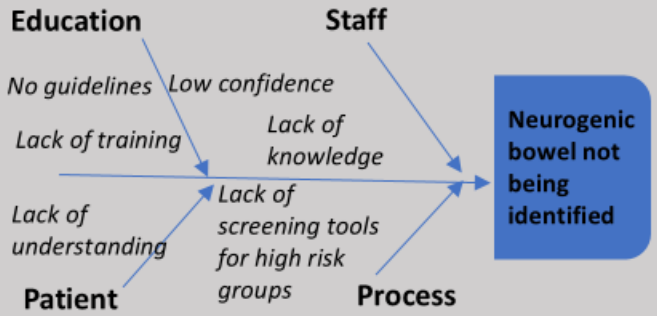
Outcome:

1. Number of patients with documented Neurogenic bowel score
2. IPOS (Integrated Palliative care Outcome Scale) constipation score

## AIMS

1. Improve staff awareness of Neurogenic bowel
2. Improve staff confidence in managing neurogenic bowel
3. Improve patient symptoms

## DIAGNOSTICS




## Change ideas

- Implement teaching
- Create guideline
- Simulation teaching
- Patient resources
- Add neurogenic bowel score to clerking

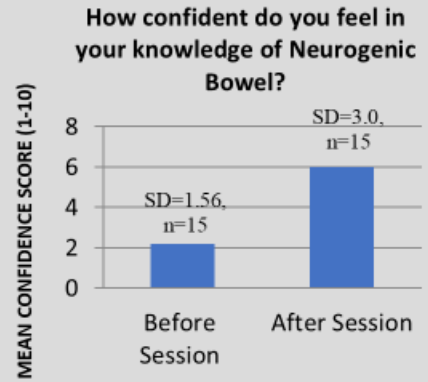
## DISCUSSION

This project highlights the growing complexity of our patients, and encourages health care professions to learn and work with other disciplines.

Process measurements show staff awareness and confidence have improved. However, moving forward we hope to collect outcome measurements to assess patient symptom improvement using the neurogenic bowel score we have incorporated in patient assessment tools.

| | 1 | 2 | 3 |
|---|---|---|---|
| **Plan** | Review baseline data | Deliver MDT teaching | Create Local Guideline |
| **Do** | - Key search terms identified<br>- IT involved to help with electronic search | - Multiple teaching sessions delivered | - Looked at exiting guidance<br>- Write guideline with help of MDT |
| **Study** | -NB not being identified<br>-Symptom score of constipation (IPOS) did not improve on discharge | -Delivered to 25 staff<br>- Improved knowledge and confidence | - Reviewed by Spinal Cord injury education lead |
| **Act** | -Present baseline data to medical director, gain interest<br>-Identified need for further education and training | -Need to further increase confidence and reinforce teaching<br>-Create Trust guideline | -Still need to bridge theoretical knowledge with practical<br>-Plan simulation day |

## RESULTS




Baseline mean IPOS constipation score was 2.5 (SD=1.4, n=10)

Neurogenic bowel scoring system incorporated into patient notes on system. Pending data collection

**References**

1. Multidisciplinary Association of Spinal Cord Injured Professionals. Guidelines for Management of Neurogenic Bowel Dysfunction in Individuals with Central Neurological Conditions. 2012

# An update on evolving spinal infections in the current climate of emerging antimicrobial resistance

Dr I. Asanthi, Dr V. Sivaneswaran, Dr K. Banavathi, Dr S. Desai

*University Hospitals of North Midlands*

## BACKGROUND

- Spinal infections, such as vertebral osteomyelitis, discitis, and epidural abscesses, are usually spread via a haematogenous route from a distance source to the vertebral disc.
- However post-operative spinal infections remain a concern and are associated with a high morbidity.
- The incidence in 2010 was 7.4/100000 population[1].
- In a significant proportion of patients, the causative organism is unidentified despite meticulous work up, therefore requiring an empiric antibiotic choice.
- This poses challenges in diagnosis and management, despite extensive multidisciplinary discussions[2].

## AIMS

- This study aims to summarise the causative pathogens involved in native and post-operative spinal infections in order to steer antimicrobial stewardship (AMS) practices and improve patient outcomes.

## MATERIALS AND METHODS

- This retrospective study investigated the demographics and causative pathogens of native and post-operative (PO) spinal infections in patients from July 2018 to December 2019 at a single tertiary hospital.
- Patient data and causative spinal cultures were obtained from the spinal Multi-Disciplinary-Team records and local laboratory information system.
- Antibiotic sensitivity was tested and performed using the VITEK 2 bioMerieux automated system.
- Post-operative wound infections and psoas abscesses were excluded.

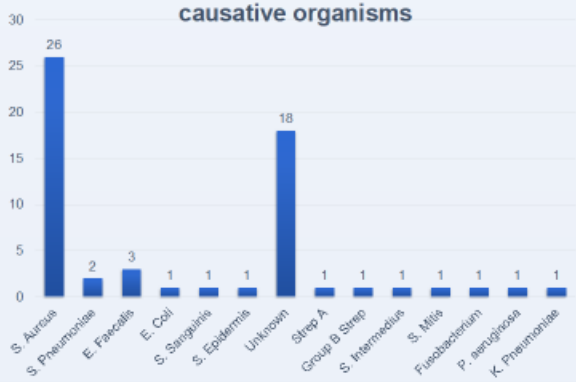
## RESULTS

- During the study period, total of 72 patients with spinal infections were identified. with a male: female ratio of 5:4.
- Amongst them, 59 (82%) were native and 13 (18%) were post-operative.
- Most patients 53 (74%) were between 56 – 85 years of age.

### Native Spinal Infections

- Native spinal infections affected all the spinal levels: 13 in cervical (22%), 8 in thoracic (14%), 28 in lumbar(47%) and multilevel of the spine in 10 (17%).
- Out of 59 cases, 41 (69%) demonstrated identifiable causative organisms from blood or spinal specimen cultures.
- ***Staphylococcus aureus*** was the predominant pathogen causing native spinal infections: 26 (63%)- see Fig. 1
- ***S. aureus*** caused infections throughout all age groups and all spinal levels
- A case of ***S. epidermis*** discitis was found in a patient with concomitant infective endocarditis

Figure 1: Native Spinal Infections causative organisms




### Post-operative spinal infections

- ***S.aureus*** was the causative pathogen in 38% of post-operative infections, whilst 46% were caused by gram-negative and enteric bacterial species in isolate or mixed cultures – see figure 2
- 11/13 patients (85%) of post-operative infections had spinal metal work in situ
- ***E. Coli*** was the 2nd most common causative organism for post-operative spinal infections (23%) after ***S.aureus*** .

FIGURE 2: ORGANISMS CAUSING POST-OPERATIVE SPINAL INFECTIONS

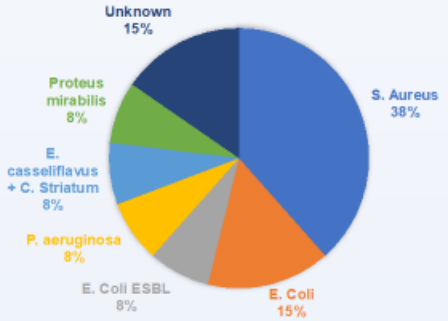



Figure 3: Antibiotic sensitivities for gram negative organisms causing post-operative infections

| | E.Coli | P.Mirabilis | P. aeruginosa | E.Coli ESBL |
|---|---|---|---|---|
| Amoxicillin | R | R | | R |
| Co-amoxiclav | R | R | | R |
| Tazocin | S | S | S | R |
| Gentamicin | S | S | S | R |
| Aztreonam | S | S | | R |
| Meropenem | S | S | S | S |
| Ciprofloxacin | S | S | S | R |
| Co-trimoxazole | R | S | | R |

From this table, it can be concluded that initiating a broader spectrum antibiotic such as Tazocin or Meropenem would be more effective in treating post-operative spinal infections.

## DISCUSSION AND CONCLUSION

- Native spinal infections are most commonly caused by ***Staphylococcus Aureus***, leaving flucloxacillin as the rational empiric choice for this category of spinal infections.
- Whereas, post-operative spinal infections were more commonly caused by gram- negative and enteric bacterial species requiring a broader antibiotic choice such as Tazocin or Meropenem
- Post-operative spinal infections are now being caused by rising gram-negative organisms. This shift in organism aetiology poses clinical difficulty in choosing the most appropriate antibiotic post-operatively. It also creates further challenges due to biofilm formation and difficulties in removal of metal-work due to spinal instability in selected cases.
- Of all pathogens isolated, 8% of gram-negative organisms were identified to be multi-drug resistant, which highlights the threat of growing antibiotic resistance.
- AMS is required in this cohort to reduce morbidity, shorten hospital stay and avoid repeated surgeries[2].
- Multi-disciplinary teams can achieve this by identifying high risk groups and using narrow spectrum antimicrobials.
- This study's main limitation is the small sample size. However, it still provides evidence that empirical antibiotic choices need review in different settings based on the local antimicrobial resistance data.

## REFERENCES

1. Widdrington, J., Emmerson, I., Cullinan, M., Narayanan, M., Klejnow, E., Watson, A., Ong, E., Schmid, M., Price, D., Schwab, U. and Duncan, C. (2018). Pyogenic Spondylodiscitis: Risk Factors for Adverse Clinical Outcome in Routine Clinical Practice. Medical Sciences, 6(4), p.96. doi:https://doi.org/10.3390/medsci6040096.
2. Simon Matthew Graham, Fishlock, A., Millner, P. and Sandoe, J. (2013). The management gram-negative bacterial haematogenous vertebral osteomyelitis: a case series of diagnosis, treatment and therapeutic outcomes. European Spine Journal, 22(8), pp.1845–1853. doi:https://doi.org/10.1007/s00586-013-2750-4.

University Hospitals Birmingham NHS Foundation Trust

# From Pneumonia to Lung Cancer: The Unfolding Diagnosis of Rare Pulmonary Mucormycosis in a Patient with Myelodysplastic syndrome

Vishma Porwal, Asad Ullah Khan, Faiqa Naeem, Atena Gogokhia, Ismail Iyed, Manahil Abdelhalim

## Introduction

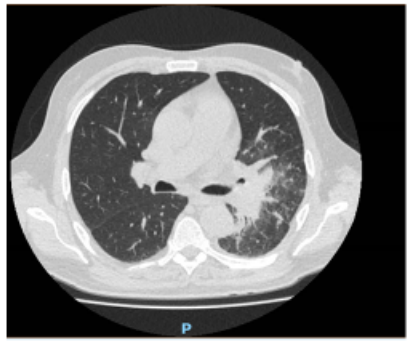
Pulmonary mucormycosis is a severe fungal infection caused by Mucorales, particularly dangerous in immunocompromised patients. This case illustrates the diagnostic challenges faced in identifying pulmonary mucormycosis, which was initially misdiagnosed as pneumonia and later suspected to be lung cancer.

## Case Report

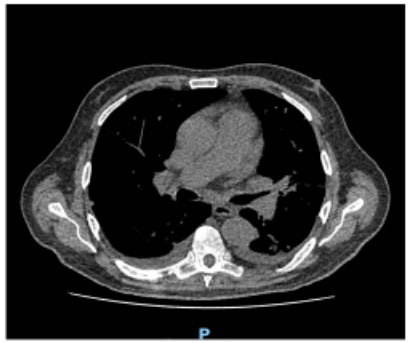
A 72-year-old male with myelodysplastic syndrome (MDS) undergoing desferrioxamine therapy was admitted on 2024, with a 10-day history of fever, dry cough, and left-sided chest pain. He was initially treated with intravenous amoxicillin and later piperacillin-tazobactam due to persistent fevers and elevated C-reactive protein levels. Imaging studies revealed a left hilar mass, associated lymphadenopathy, and multiple bilateral lung nodules, raising suspicion for malignancy. Bronchoalveolar lavage (BAL) performed confirmed Mucorales through panfungal PCR. Endobronchial ultrasound (EBUS) indicated vascular tumor involvement and enlarged lymph nodes

## Discussion

The patient's treatment began with Ambisome, resulting in a rapid resolution of fever. Voriconazole was briefly paused due to acute kidney injury. This case highlights the importance of considering fungal infections in immunocompromised individuals, especially patients with haematological malignancies. The timely identification of Mucorales is crucial for effective treatment.



Initial CT Chest



CT Chest post Fungal therapy: Resolution of mass

## Conclusion

This case exemplifies the complex diagnostic journey from pneumonia to pulmonary mucormycosis in a patient with myelodysplastic syndrome. It emphasizes the necessity of maintaining a high suspicion for fungal infections in similar clinical scenarios. The successful management of this case underscores the importance of accurate diagnosis for improving patient outcomes.

## References

1. **Kozel TR, Wickes BL.** *"Fungal infections: diagnosis and treatment." Infectious Disease Clinics of North America. 2014;28(3):503-533. doi:10.1016/j.idc.2014.05.003*
2. **Seyedmousavi S, Mouton JW, Melchers WJG, et al.** *"Mucormycosis: From the Bench to the Bedside." Clinical Microbiology Reviews. 2014;27(3):623-657. doi:10.1128/CMR.00054-13.*

# Exploration of Health Inequalities in Patients treated with Home Non-Invasive Ventilation – Associations with Respiratory Healthcare Burden

**Wiktoria N Milczanowska[1]; Nicholas J Williamson[1]; Achaya Rajkumar[1]; Oluwadamilare Falade[1]; Laura Elliott[2]; Rebecca E Christie[2]; Amit S Patel[3]; Kai K Lee[1,3]**

1. GKT School of Medical Education, King's College London, 2. Department of Physiotherapy, King's College Hospital NHS Foundation Trust, 3. Department of Respiratory Medicine, King's College Hospital NHS Foundation Trust

## Introduction

People from disadvantaged groups and areas of social deprivation experience an even higher incidence and mortality rate of respiratory disease than the general population.[1] Patients on home non-invasive ventilation (home-NIV) can be an overlooked population in respiratory research and healthcare.[2] This work aimed to explore these health inequalities amongst patients on home-NIV and any association with respiratory healthcare burden.

## Materials & Methods

This retrospective cohort study was conducted at a large teaching hospital in London, enrolling patients who were actively receiving home-NIV treatment. Data was collected from medical records and included several patient characteristics (table 1). Hospital healthcare burden and NIV adherence were observed for a two-year period prior to the study. These included (1) percent of days NIV used; (2) total hospital appointments; (3) hospital appointment attendance; (4) hospital admissions; and (5) total hospital bed days. Relationships between these measures and underlying patient characteristics were evaluated.

## Limitations

- Single centre study.
- Retrospective.
- Observation period limited to 2 years.
- Potential selection bias.

**Scan the QR code for references**

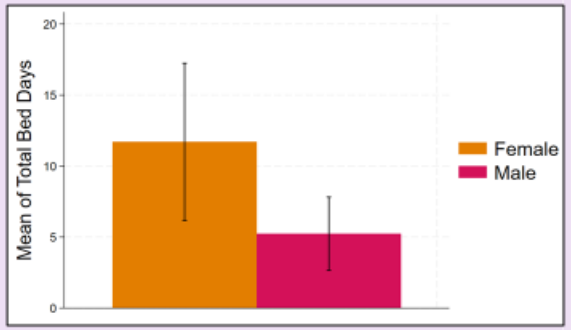



*Figure 1 – Bar graph between total number of bed days and gender*

## Results

- Increased hospital bed days was associated with **female gender** (5.2 ± 12.5 vs 11.7 ± 27.0, p = 0.039).
- Higher number of respiratory-related admissions was observed with **older patients** (r = 0.146, p = 0.048).
- There was a weak correlation between **deprivation rank** and number of NIV care appointments missed (r = -0.1628, p = 0.0309).
- A **higher BMI** (>40) was associated with lower daily home-NIV use (68.7% ± 4.9% vs 83.0% ± 3.1%, p = 0.012).
- No significant difference in hospital healthcare burden or NIV use in patients with **mental health disorders**.

| Characteristic | N=187 |
|---|---|
| **Age (years)** | 63 ± 14 |
| **Sex *(Males)*** | 94 (50.3%) |
| **Deprivation rank** | 11733 ± 6740 |
| **BMI (kg/m²)** | 40 ± 13 |
| **Indication for NIV** | |
| *OSA/OHS* | 125 (66.8%) |
| *COPD* | 18 (9.6%) |
| *Overlap syndrome (OSA/OHS & COPD)* | 28 (15.0%) |
| *Other* | 13 (7.0%) |
| *Unknown* | 3 (1.6%) |
| **Duration of NIV (months)** | 43.6 (15.4 – 74.8) |

*Table 1 - Patient characteristics. Data presented as Mean ± SD, Median (IQR) or n (%)*

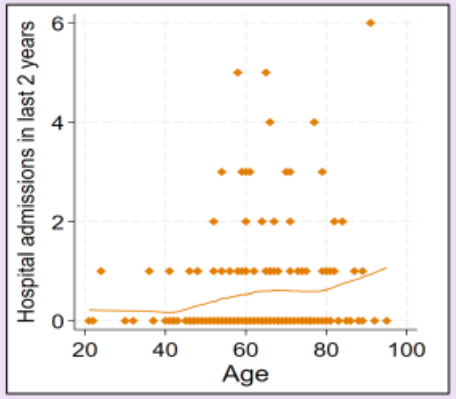



*Figure 2 – Scatter graph between age and hospital admissions*

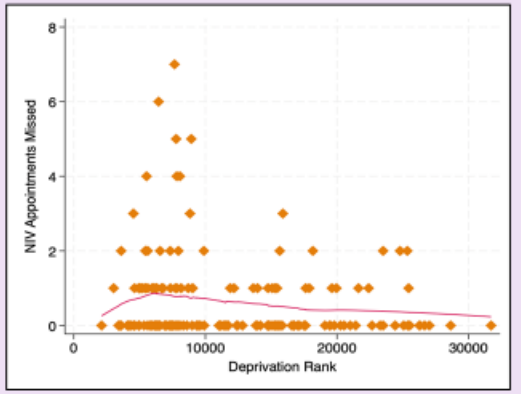



*Figure 3 – Scatter graph between missed NIV appointments and deprivation rank*

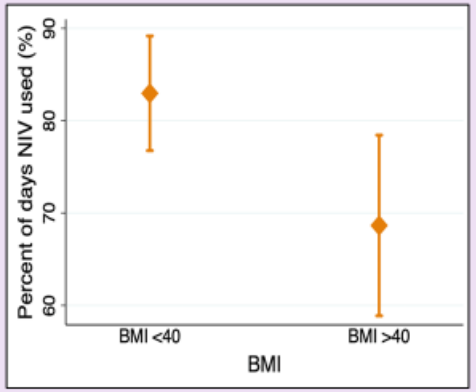



*Figure 4 – T-test between daily NIV use (%) and BMI groups*

## Conclusion

Our study explored health inequalities in a cohort of home-NIV users. **Age, gender, BMI and deprivation status** were found to influence rates **of home-NIV adherence, hospital bed days and healthcare access and utilisation**. This work highlights the need for further research to understand and address health inequalities facing patients on home-NIV.

# Characteristics of online health misinformation encountered by patients with high cardiovascular risk in a primary care setting

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## Introduction

Patients who actively search for online health information and have concerns about statins have **lower statin adherence.** [1]

This may be due to searching using **terms** that lead to **low quality** information and **misinformation**.

Using an **information diary**, where patients log the information they encounter, provides more detailed insights than using pre-prepared vignettes or headlines.

What are the characteristics and content of health misinformation online?


**Aim**

To examine the **characteristics** of online health misinformation encountered by patients with high cardiovascular risk

**Objective 1** To measure the **proportion** of online health misinformation

**Objective 2** To examine the **content** of online health misinformation

## Methods

Study design: Secondary data analysis from a cohort study on online health information seeking behaviour [1]

**270** patients with cardiovascular disease were universally sampled from an urban primary care clinic in Malaysia

**1601** entries were recorded (Oct 2022 – Jan 2023) by **160** of 270 participants using a digital diary tool

Entries categorised into:
**Platform**
**Commercial status**
**Content focus**
**Presence of misinformation**

Misinformation was identified using **Wardle's taxonomy**. [2]
**Descriptive analysis** was conducted to report the proportion of misinformation.
**Chi-square test** was used to analyse association between information characteristics and misinformation.
Content of misinformation was analysed independently by two researchers based on **themes**.

## Results

**23.3%** of entries contained **misinformation**

**51.1%** of misinformation were related to **cardiovascular health topics**.

Misinformation across information characteristics

| Information characteristic | Category | Presence of misinformation | P-value |
|---|---|---|---|
| Platform | Website | 5.3% | <0.001 |
| | **Social media** | **52.6%** | |
| Commercial status | **Commercial** | **61.7%** | <0.001 |
| | Non-commercial | 18.1% | |
| Content focus | **General well-being** | **38.1%** | <0.001 |
| | Condition related | 7.7% | |

Content with high proportion of misinformation

1. **Complementary and alternative medicine** (55.4%)
2. Diet (28.4%)
3. Disease (18.5%)

Content of misinformation based on themes

- Exaggerated facts
- Inaccurate information
- Incomplete information
- Controversial theories
- Unverified information

## Discussion

Cardiovascular-related misinformation often promoted **unproven cures**, **disputed scientific claims**, and offered treatments **without evidence**. [3]

**Social media** provides a free and direct platform for sharing health misinformation, which is often **oversimplified** and **unverified**. [4]

**Commercial** health products are frequently marketed by **exaggerating** treatment effects and selling alternative treatments based on **anecdotal** evidence. [3]

**Healthcare providers** should actively **debunk** health misinformation and provide **reassurance** to support informed patient decision-making.

## Conclusion

The proportion of health misinformation encountered is high, particularly on social media, from commercial sources, and on general well-being topics. The content of misinformation includes exaggerated facts, inaccurate, incomplete, unverified information, or controversial theories.

## Key references

1.Lim et al. Online health information behaviour and its association with statin adherence in patients with high cardiovascular risk: A prospective cohort study.
2.Wardle C and Derakhshan H. Information disorder: Toward an interdisciplinary framework for research and policymaking.
3. Zhang, Shuai, et al. Identifying features of health misinformation on social media sites: an exploratory analysis.
4.Do Nascimento et al. Infodemics and health misinformation: a systematic review of reviews.

# Are We Doing the Right Thing?

## Evaluation of FRAX Score in Frail Elderly Patients and Primary Prevention of Osteoporosis in a Clinical Setting

Ye Mon[1], Hnin Yu Sanda[2], Arinze Awuzie[2], Srinivas Chenna[1,2]
Morriston Hospital, Swansea Bay University Health Board

## Introduction

- Osteoporosis-related fractures pose a significant risk for elderly, frail populations, leading to increased morbidity, mortality, and healthcare costs.
- The FRAX (Fracture Risk Assessment Tool) estimates the 10-year risk of major osteoporotic fractures but its implementation in clinical practice for frail elderly patients remains underexplored.

## Aim

- To evaluate the clinical application of the FRAX score and the management of bone health in frail patients within an Older Person Assessment Unit (OPAU)

## Method

- In a retrospective review of 51 patients; 17 males and 34 females admitted to the Older Person Assessment Unit at Morriston Hospital between May and August 2024.
- Data was collected on age, gender, Clinical Frailty Score (CFS), FRAX scores, history of fractures and falls, and osteoporosis treatment.

## Results

- The study revealed over 70% (72.55%) of patients were not receiving appropriate osteoporosis treatment, despite their elevated fracture risk.
- This reflects the underutilization of the FRAX tool and underscores the need for improved integration of fracture risk assessment in clinical workflows.

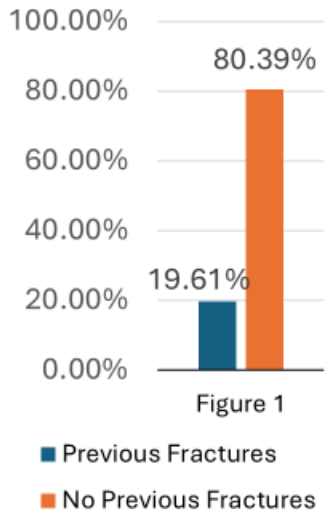



Figure 1

Mean age : 82.8
Mean CFS : 6


## Recommendation

- We plan to initiate oral bisphosphonate treatment who are high risk of fall and fracture as per FRAX Tool recommendation.
- Additionally, intravenous Zoledronic acid is being considered for future use, though challenges such as resource limitations, renal impairments, and bedbound patient care will need to be addressed.
- Additional Risk factor is worth considering for osteoporosis management ( steroid use, age of menopause, malignancy and care home resident)

## Conclusion

- This study highlights significant gaps in osteoporosis management and the need for better use of the FRAX tool and primary prevention to improve outcomes for frail elderly patients.

## References

- 1. Compston JE, McClung MR, Leslie WD (2019) Osteoporosis. The Lancet 393:364–376 -
- 2. Leslie WD, Majumdar SR, Morin SN, Lix LM, Schousboe JT, Ensrud KE, Johansson H, McCloskey EV, Kanis JA. Performance of FRAX in clinical practice according to sex and osteoporosis definitions: the Manitoba BMD registry. Osteoporos Int. 2018Mar;29(3):759-767. doi: 10.1007/s00198-018-4415-y. Epub 2018 Feb 5. PMID: 29404625.

# Optimising DNACPR Documentation and Care Escalation: A Quality Improvement Study

Ei Aung[1], Ye Mon[2], Tanzeel Buttar[2], Thinzar Min[1,2]
Singleton Hospital, Swansea Bay University Health Board

## Introduction

- Do-Not-Attempt-Resuscitation (DNACPR) decision and escalation care plan are essential for holistic care of frail elderly patients.
- Inappropriate resuscitation attempts lead to distress and harm.
- Communication between healthcare professionals and patients/ families is key to delivering dignified care and reducing emergency "inappropriate crash calls".

## Aim

- To assess and improve the completion rate of DNACPR forms and escalation plans for patients admitted to medically stabilised beds in Singleton Hospital.

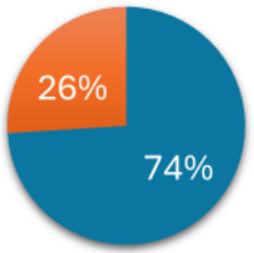
## Method

- Two Plan-Do-Study-Act (PDSA) cycles
- Baseline project: July-August 2023 involving 34 patients
- Post-intervention project: October-November 2023 with 16 patients.
- Demographics data, Clinical Frailty Scores (CFS) and Charlson Comorbidity Index (CCI) and DNACPR status were collected.
- Intervention: Poster and DNACPR in-cooperated into clerking proforma.

## Intervention

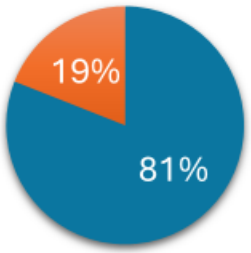

## Results

**Baseline**




DNACPR in situ
No Escalation Plan

**Post-Intervention**




DNACPR in situ
No Escalation Plan

## Results

| Patients characteristics | Baseline | Post-Intervention |
|---|---|---|
| Age (years) | 79.1 ± 11.3 | 80.3 ± 12.7 |
| Sex (Male, %) | 62% | |
| LOS (days) | 69.7 ± 39.7 | 118.1 ± 65.0 |
| CFS | 5.6 ± 1.3 | 5.75 ± 2.1 |
| CCI | 5.5 ± 2.0 | 5.6 ± 1.1 |

## Conclusion

- Whilst this initiative demonstrated an improvement in advanced care planning, 19% of patients in the post-intervention cycle still lacked appropriate escalation plans.
- Despite its limitations, this project raised awareness of health care professionals on DNACPR and ceiling-of-care decisions for frail elderly patients.

## References

1.Eli K, et al. Resusc Plus. 2021 Jul 29;7:100145.
2.Perkins GD, et al: NIHR Journals Library; 2016 Apr. PMID: 27077163.
3.Freeman K, et al. BMJ Open. 2015 Jan 13;5(1):e006517..

# BLOOD GLUCOSE CONTROL IN PATIENTS ADMITTED WITH ACUTE CORONARY SYNDROME

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1. Leighton Hospital, Mid Cheshire Hospitals NHS Foundation trust

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## BACKGROUND

Why is this important?

- Patients with diabetes more frequently present with non-typical symptoms of acute coronary syndrome (ACS) than patients without diabetes.
- They more frequently have multifocal coronary artery disease and have worse clinical outcomes (ESC Guideline)
- Hyperglycaemia is common in people admitted to hospital with ACS. Recent studies found that approximately 65% of patients with acute myocardial infarction who were not known to have diabetes had impaired glucose regulation when given a glucose tolerance test. (NICE Guidelines).

GUIDELINES

- On admission to hospital, it is recommended that all patients with ACS have their glycaemic status evaluated, regardless of a history of diabetes, and for it to be monitored frequently in patients with diabetes or hyperglycaemia. (ESC Guideline).

- Offer all patients with hyperglycaemia after ACS and without known diabetes tests for:
  1. HbA1c levels before discharge and
  2. fasting blood glucose levels no earlier than 4 days after the onset of ACS.
- Inform GPs that they should offer at least annual monitoring of HbA1c and fasting blood glucose levels to people without known diabetes who have had hyperglycaemia after an ACS.

(NICE Guidelines 185- 1.3)

## AIM

- To evaluate whether patients with ACS have their glycaemic status evaluated on admission to hospital as per recommendation (ESC Guideline).
- To evaluate whether patients with ACS have their lipids evaluated on admission to hospital.
- To evaluate the smoking and alcohol habits of patients and whether they are offered help
- To assess for any improvement in results compared to previous cycle of audit done in 2022 with regards to lab glucose and HbA1c measurements.

## METHODOLOGY

- Prospective study.
- 49 patients admitted with ACS to Acute Medical Unit or Cardiology ward between 05.03.2024 to 22.05.2024.
- Data collected from patients' notes and Sunquest ICE (investigations reporting portal)

## DATA INTERPRETATION

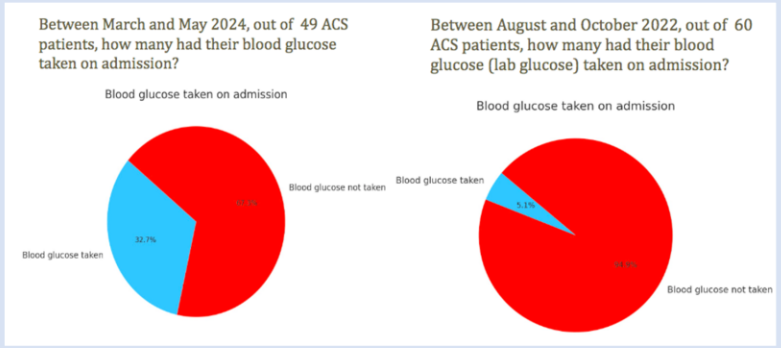



**TABLE 1:**

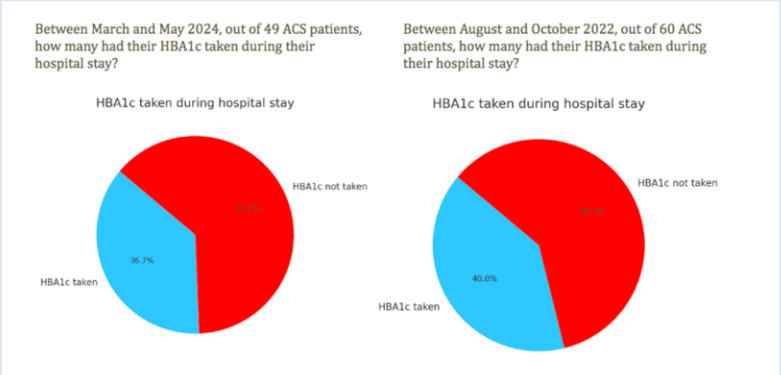
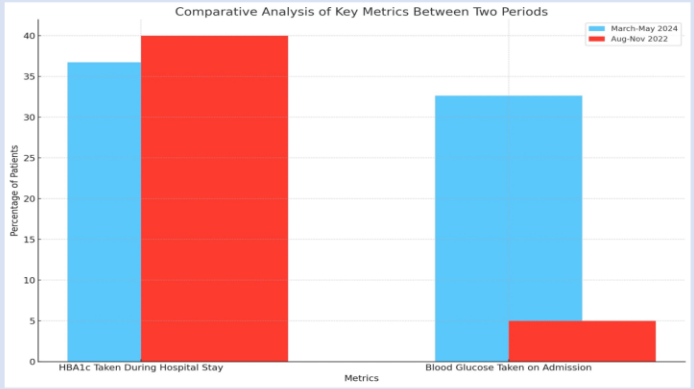



**TABLE 2:.**




## FINDINGS

- There is a slight decline in the percentage of patients having their HBA1c checked during the hospital stay from the first period to the second period.
- There is a significant improvement on the percentage of patients having their blood glucose checked on admission from the first period to the second period.

## EVIDENCE BASED MEDICINE

- Hyperglycaemia at the time of admission with ACS is a powerful predictor of poorer survival and increased risk of complications while in hospital, regardless of whether or not the patient has diabetes.
- Despite this, hyperglycaemia remains underappreciated as a risk factor in ACS and is frequently untreated.
- A meta-analysis of three major studies suggested that in T2DM, an HbA1c reduction of about 1% is associated with a 15% relative risk reduction in non-fatal MI (NICE).

## SUGGESTIONS

- Blood glucose and HBA1c level should be checked in all patients admitted with ACS- continue educating staff and direct them to posters placed in AMU, ward 1 and A&E departments.
- Cardiac rehabilitation team to **continue** monitoring HBA1c and blood glucose in all ACS patients
- Creating a 'ACS bundle' set of blood tests on ICE (investigation reporting portal) which includes lab glucose, HbA1c and lipid levels which could be used in A&E or AMU-awaiting implementation by IT

## KEY MESSAGES

- Make HbA1c and lab glucose monitoring a routine part of ACS patient care.
- Educate patients and their families about the importance of glycemic control in reducing complications.
- Stay up-to-date with the latest guidelines regarding glycaemic management in ACS patients.

## REFERENCES

- **Acute coronary syndromes** NICE guideline [NG185] Published date: 18 November 2020.
- **2020 ESC Guidelines** for the management of acute coronary syndrome in patients presenting without persistent ST-segment elevation. 8.2 P44.
- **Cardiovascular disease: risk assessment and reduction, including lipid modification-** NICE guideline [NG238] Published 14 December 2023- https://www.nice.org.uk/guidance/ng238/chapter/Recommendations#initial-lipid-measurement-and-referral-for-specialist-review

# Closing the Gap: Enhancing Patient Understanding of Fournier's Gangrene Risk with SGLT-2 Inhibitors through Technological Interventions

*Dr Zainab Jamal , Foundation doctor, LNWH NHS Trust*

## Introduction:

Sodium glucose cotransporter-2 (SGLT2) inhibitors are the newest available oral antihyperglycemic agents. Owing to the resultant glycosuria because of reduced reabsorption of glucose in proximal convulated tubules, one of the main ADRs for SGLT-2 inhibitors is genitourinary and urinary tract infections , which are more common in women.

FDA noted 55 cases of FG Fournier's Gangrene with SGLT2 inhibitors (2013-2019) versus 19 cases with other antidiabetic agents (1984-2019). MHRA raised alert and advised UK healthcare professionals on this rare side effect.

## Objective:

This study aimed to assess awareness levels regarding the side effects, notably Fournier's gangrene, among patients on SGLT2 inhibitors in a general practice setting. Additionally, it sought to enhance awareness about the side effects through technological interventions and aimed to gain formal consent from patients to continue taking this after knowing the side effects particularly Fournier's gangrene.

## Methodologies:

**Data Collection**
Done from software "EMIS" used in GP surgery based in Harrow London

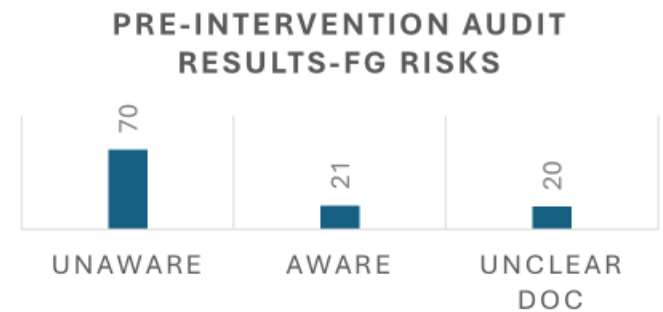
**Intervention**
Accurex message sent with an attached leaflet on SGLT-2 inhibitors

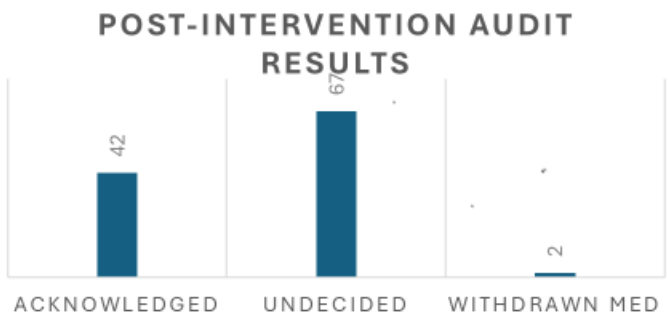
**Data Analysis**
Responses were analysed to assess the impact of the intervention

**Alert Notes**
Alert note created in EMIS as patients acknowledged the S/E

## Results:

- **Pre-intervention** Out of 111 patients, n=70/111(63%) patients were un-aware of FG risks while only 21/111 (5.2%) patients were aware. 20/111 (5.5%) had unclear documentation about side effects.
- Among these 63% n=70, 52/70 (75%) of these patients were started on gliflozins from secondary care centre by the specialists.
- **Post intervention** 38% n=42/111 affirmed to continue medication after understanding all side effects. 60% n=67/111 did not provide a definitive response. 2/111 1.8% patients expressed a desire to discontinue SGLT-2 inhibitors. They were advised to consult clinicians for further guidance





NHS

## Conclusions:


### Documentations

- The study finds gaps in educating patients on Fournier's gangrene risks from SGLT-2 inhibitors and the need for better documentation. Ongoing efforts are needed to improve communication on medication risks.

### Using technology

- Urgent improvements in communicating medication side effects are needed in primary and secondary care. As shown in our study, technology can help address these issues by enhancing patient safety and satisfaction by sending patient information leaflets through emails/mobile number. However, there need some work to simplify this process for ease of use.

## References:

1.https://www.diabetes.org.uk/node/12280#:~:text=Fournier's%20gangrene%20is%20a%20rare%20but%20serious%20and%20potentially%20life,abscess%20may%20precede%20necrotising%20fasciitis

2.P. Ponikowski, A.A. Voors, S.D. Anker, H. Bueno, J.G.F. Cleland, A.J.S. Coats, *et al.*

3. https://diabetesjournals.org/clinical/article/40/1/78/138888/Sodium-Glucose-Cotransporter-2-Inhibitor-Use

# Navigating Risks and Avoiding Delays: Optimal Diagnosis of Rare Metastatic Melanoma with Pulmonary Vascular, Cardiac, and Brain Invasion

Dr Zaw Aung[1], Dr Rajini Sudhir[1], Professor Sanjay Agrawal[1]
[1]Glenfield Hospital, University Hospitals of Leicester NHS Trust

## Introduction:

**Metastatic melanoma**: Frequently spreads to distant organs; pulmonary vasculature and cardiac invasion are rare.
**Timely diagnosis**: Crucial in anticoagulated patients with tumour thrombus and cardiac invasion due to high procedural risks.
**PET-CT**: Differentiates tumour mass from cancer-related thrombo-embolism by assessing metabolic activity.
**High-risk cases**: Need to distinguish between tumour invasion and thrombo-embolism, especially in anticoagulated patients.
**Endobronchial Ultrasound (EBUS)**:

- A minimally invasive alternative to surgical mediastinoscopy, with fewer procedural risks.
- Can be performed under conscious sedation.
- Safer for anticoagulated patients.
- Comparable diagnostic accuracy to mediastinoscopy.
- Lower complication rates and faster recovery.

**Yasufuku et al.**: Effective for mediastinal lymph node staging and diagnosing conditions like metastatic melanoma.

## Case Presentation:

A 49-year-old firefighter, with melanoma excised at age 35, presented with a six-week history of persistent cough, haemoptysis, and mild chest pain. He is a non-smoker with a WHO ECOG Performance Status of 0.
**Initial CT findings(Fig1):** Right hilar mass with possible tumour invasion into pulmonary artery and veins vs. large thrombo-embolus.
**PET-CT**: A highly FDG-avid mass, consistent with tumour.
**MRI brain**: Indicative of metastatic lesions in the right orbit and left parietal lobe.
**MRI heart**: Tumour invasion into the left atrium.
**Initial Biopsy:** Inconclusive CT-guided biopsy suggests possible central and peripheral pulmonary thrombo-embolus.

## Further Diagnostics and Management:

**EBUS**: Conducted under conscious sedation due to patient's anticoagulated state and diagnostic uncertainty. Samples were taken from **right hilar lymph nodes** and **mass-like lesion**.
**Diagnosis:** Successfully provided tissue diagnosis of **BRAF-positive metastatic melanoma** via EBUS .
**Management:**

- **Immunotherapy**: Promptly started on ipilimumab and nivolumab.
- **Response**: Well-tolerated; completed four treatment cycles without complications and showed a good response to therapy.

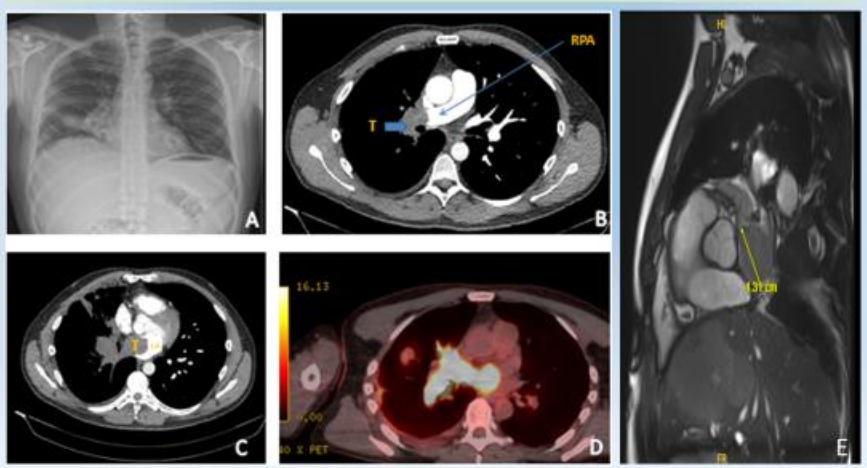



**Figure 1**.(A) PA chest X-ray showing abnormal opacification in the right hilar region. (B) CT Pulmonary Angiogram (CTPA) (transverse plane) showing complete occlusion of the right pulmonary artery (RPA) (arrow) with no blood flow to the middle and lower lobes.(C) A large thrombus (T) extending into the left atrium, occupying almost half of the left atrium, indistinguishable from a thromboembolism. (D) This thrombus is intensely FDG-avid on PET-CT, confirming tumour invasion into the left atrium, with an SUVmax of up to 41.(E) MRI Heart: A large, non-mobile soft tissue mass (4.3 cm) obstructing the right main pulmonary artery and involving the right upper and lower pulmonary veins, extending into and invading the left atrium.

## Discussion:

This case highlights several critical points:
**Role of PET-CT**: PET-CT was invaluable in distinguishing between tumour thrombus and cancer-related thrombo-embolism, facilitating a targeted diagnostic approach.
**EBUS as a diagnostic tool**: EBUS was used successfully to diagnose tumour mass involving the pulmonary vasculature and heart ,providing a safer diagnostic route compared to more invasive options especially with the use of systemic anticoagulation.
**Persistence in diagnostics**: The initial negative lung biopsy emphasizes the importance of persisting with the diagnostic efforts despite inconclusive results.
**Immunotherapy success**: The patient's favourable response to immunotherapy highlights the need for continued diagnosis and treatment, even in cases with poor prognostic imaging findings.

## Conclusion:

This case underscores the role of **PET-CT** in distinguishing between tumour thrombus and cancer-related thrombo-embolism, and the value of **EBUS** in high-risk settings. Timely diagnosis and accurate tissue sampling are crucial, particularly in young, fit patients who are more likely to respond positively to immunotherapy, despite advanced-stage disease.

## References:

1. Wolff MJ, et al. Case series: Metastatic melanoma invading the pulmonary vasculature and heart. Lessons from rare presentations. *J Thorac Oncol. 2021;16(8):1367-1372.*
2. Xi XY, et al. Value of (18)F-FDG PET/CT in differentiating malignancy of pulmonary artery from pulmonary thromboembolism: a cohort study and literature review. *Int J Cardiovasc Imaging. 2019;35:1395–1403. DOI: 10.1007/s10554-019-01553-5.*
3. Ito K, et al. Diagnostic usefulness of 18F-FDG PET/CT in the differentiation of pulmonary artery sarcoma and pulmonary embolism. *Ann Nucl Med. 2009;23:671-676. DOI: 10.1007/s12149-009-0292-y.*
4. Yasufuku K, Pierre A, Darling G, et al. A prospective controlled trial of endobronchial ultrasound-guided transbronchial needle aspiration compared with mediastinoscopy for mediastinal lymph node staging of lung cancer. *J Thorac Cardiovasc Surg. 2011;142(6):1393-1400. DOI: 10.1016/j.jtcvs.2011.07.056.*
5. Larkin J, et al. Five-year survival with combined nivolumab and ipilimumab in advanced melanoma. *N Engl J Med. 2019;381(16):1535-1546.*

# A quality improvement project to improve compliance with the Driver and Vehicle Licensing Agency (DVLA) advice given to medical patients discharged from Queens Hospital.

Zi Lun Lim[1], Harry Osborne, Sophia Wielpuetz, Vipul Mayank, Aye Hline[1]

## Introduction

Keeping up with DVLA guidance on medical conditions affecting driving can be challenging due to frequent updates. According to DVLA guidelines, healthcare professionals are responsible for advising patients on driving safety, assessing their medical fitness to drive, and ensuring patients notify the DVLA of any relevant conditions.[1] An initial audit revealed that 94 of 100 patients requiring driving advice did not receive appropriate guidance during their hospital stay. To address this, a mandatory section addressing driving advice, including a hyperlink to the DVLA website, was added to patient discharge summaries.

## Results

| | Pre QIP implementation | | Post QIP implementation | |
|---|---|---|---|---|
| | DVLA advice given, n (%) | Accurate DVLA advice is given, n (%) | DVLA advice given, n (%) | Accurate DVLA advice is given, n (%) |
| Yes | 6 (6) | 5 (83) | 54 (54) | 54 (54) |
| No | 94 (94) | 1 (17) | 46 (46) | 46 (46) |
| Total | 100 (100) | 6 (100) | 100 (100) | 100 (100) |

Table 1 above shows DVLA Advice Compliance and Accuracy Pre- and Post-Quality Improvement Project Implementation

| | DVLA advice given | Accurate DVLA advice given |
|---|---|---|
| Change pre/post QIP implementation for adherence to DVLA advice (%) | 800 | 980 |

Table 2 above shows percentage change for DVLA Advice Adherence Pre and Post QIP Implementation

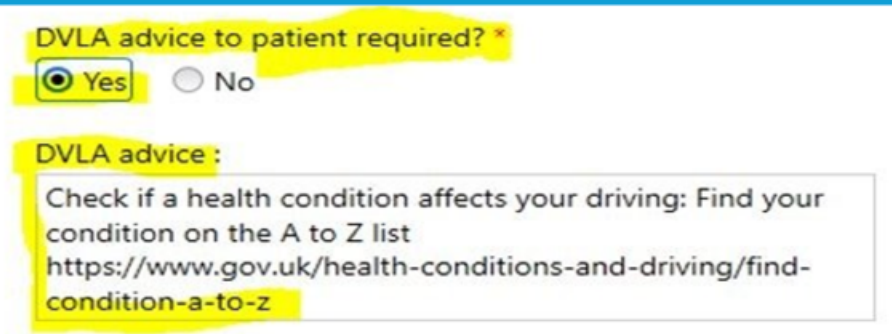



Figure 1 above shows DVLA advice is incorporated into the discharge summary.

## Conclusion and future work

The project achieved a substantial 980% improvement in compliance with DVLA driving advice, increasing from 5% to 54%. However, 46% of patients still did not receive the required guidance, highlighting the need for further improvement in consistent application. Raising awareness among healthcare professionals through the mandatory discharge summary section is a positive step towards enhancing compliance. We are currently performing the 3rd cycle of our QIP to assess compliance.

## Materials and methods

In the initial audit, 213 patients from the Coronary Care Unit (CCU) at Queen's Hospital, Romford, were reviewed. Of these, 100 met the criteria for driving advice according to DVLA guidelines. The inclusion criteria were patients diagnosed and treated for cardiac conditions requiring driving advice. Non-cardiac conditions and diagnoses unrelated to driving advice were excluded. Following the introduction of a mandatory discharge summary section for driving advice throughout Queen's Hospital, a second cycle audit of 100 patients was conducted, with data collected from various wards. Inclusion criteria required admission to Queen's Hospital, Romford, while exclusions included non-driving advice diagnoses and overnight stays without ward admission. Demographic information and data were extracted from inpatient records and analysed using Excel. The project was conducted between 23rd July 2022 and 17th May 2023.

## References

1. Assessing fitness to drive: a guide for medical professionals [Internet]. GOV.UK. 2018. Available from: https://www.gov.uk/guidance/assessing-fitness-to-drive-a-guide-for-medical-professionals

# Development Of Inter-Specialty Simulation-Based Education In General Internal Medicine

Co-Authors: Jennifer Livie[1], Victoria Livie[1], James Irvine[1]; Elaine Nelson[2]

1 - Northern Ireland Medical and Dental Training Agency; 2 - Southern Health and Social Care Trust

## BACKGROUND

Specialty trainees in General Internal Medicine (GIM) are required to engage in simulation-based education (SBE), involving human factors and scenario training, according to the Internal Medicine Stage 2 curriculum [(1)].

Simulation can be used for assessment of generic capabilities in practice and human factor skills, including leadership, teamworking, communication skills and time management.

A survey of GIM specialty trainees in Northern Ireland found that training in human factor skills was lacking with simulation identified as a suitable educational intervention to address them.

We sought to design, develop and deliver a SBE course to address these learning needs for GIM specialty trainees.

## METHODS

We organised two SBE days for GIM ST4+ trainees. Faculty consisted of:
- Consultants from acute medicine, psychiatry, palliative medicine, and geriatric medicine
- ST4+ trainees involved in medical education.

Scenarios focused on complex communication and human factors skills including:
- End of life care
- Use of the mental health order
- Managing a complaint
- Breaking bad news
- Establishing ceilings of care
- Managing challenging inter-specialty referrals

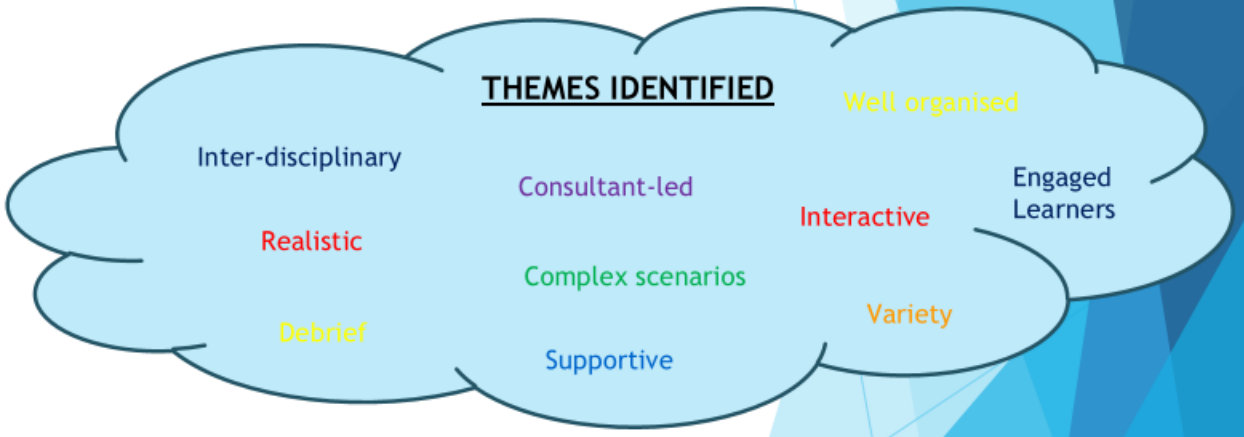
Debrief discussions followed each scenario. Mixed-method evaluation was used with questionnaires utilising Likert scales.

## RESULTS AND DISCUSSION

A total of 12 GIM ST4+ trainees attended across both days.

- Positive feedback was received from both learners and faculty.
- Confidence improved across all scenarios for all trainees.
- All trainees rated the sessions as "excellent" and would recommend them to a colleague.
- The debrief discussions were found to be a useful learning tool and an excellent opportunity to learn from other specialties in a safe environment.

## THEMES IDENTIFIED




## CONCLUSIONS AND NEXT STEPS

SBE is a beneficial learning tool for GIM specialty trainees and can improve confidence in complex communication scenarios and human factor skills.

We hope to expand the programme to include greater interdisciplinary involvement and to increase the number of SIM days offered so that more trainees can benefit.

1) Joint Royal Colleges of Physicians Training Board. General Internal Medicine (GIM)[homepage on the Internet]. No date[read 2024 Oct 20]. Available from: https://www.thefederation.co.uk/training/specialties/general-internal-medicine-gim

# Kidney Biopsy Quality Improvement Project

Dr Abbey Smith[1], Dr Fiona Trew[2], Ms Debra Sweeney[2], Ms Carol Allan[2], Ms Paula Cowan[2], Ms Margaret Dodds[2], Dr Saeed Ahmed[2]
[1]Newcastle University, Newcastle. [2]Sunderland Royal Hospital, Sunderland

## Introduction

Renal biopsy is an integral part of clinical practice in nephrology. The **commonest complication from a renal biopsy is bleeding**[1]. This ranges from frank haematuria in 1 in 10 biopsies, to heavier bleeding requiring transfusion in 1 in 50, or very rarely requiring nephrectomy in 1 in 3000 biopsies[2].

At Sunderland Diagnostic and Interventional Nephrology (SDIN) department **most biopsies are a day case procedure**. Post-procedure care is 8 hours of observation and safety netting. Reports show that 67% of complications present within 8 hours, however, **91% of major complications present at 24 hours**[1]. This suggests that the **post-biopsy monitoring period should be 24 hours** due to bleeding risk[1].

We aimed to develop an intervention that allowed for self-monitoring and community follow up. Our goal was to improve post-biopsy monitoring, provide a higher standard of care, and improve patient satisfaction.

## Methods

To objectively grade the level of haematuria, a urine colour sheet was produced. This illustrated **various levels of haematuria with a corresponding numerical value**[3]**.** This is shown in Figure 1.

Patients took a **urine sample one day post-biopsy and compared this to the urine colour sheet.** Patients had a telephone appointment with nursing staff and provided the haematuria numerical value.

If there were concerns, the SDIN consultants were informed and decided whether further action was required.

A **pre- and post-biopsy questionnaire** was created to **evaluate patient understanding and opinion on the quality of care.**

## Results

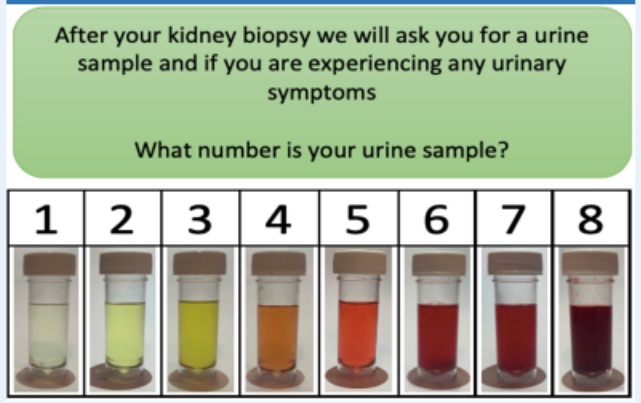
118 patients were included in the pre-biopsy questionnaire. **97.5% of patients stated they understood the biopsy process, 98.3% felt their questions answered, 100% felt safe**.

The level of haematuria scores varied. The **97.3% of scores were between 1 and 3, meaning no visible haematuria**[3]. 2.7% of patients had visible haematuria (scores 4 to 8)[3].

111 patients completed the post-biopsy questionnaire. **99.1% of patients stated there was a 'high quality of service and staff' and 100% of patients felt safe. 96.4% of patients stated they understood the urine colour sheet.** This is shown in Figure 2.

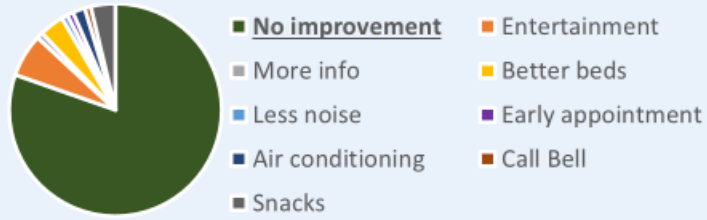
**80.3% had no improvements** and the rest mainly suggested more entertainment and snacks as shown in Figure 3.

### *Figure 1 – Urine colour sheet*




### *Figure 2- Post Biopsy Questions*


### *Figure 3 – How could the quality of the care be improved?*




## Conclusion

The data shows the urine colour sheet was easy to understand. Most patients monitored 24 hours post-biopsy had minimal haematuria.

However, some had visible haematuria, thus **supporting the need of an increase monitoring time to 24 hours**.

With this improved post-biopsy outpatient monitoring process, a **reduction in the inpatient post-biopsy time has now been implemented from 8 hours to 6 hours**.

Our data provides evidence that **patients are extremely satisfied with the quality of care and staff at SDIN and felt safe**.

**References:**
1.Bakdash K, Schramm KM, Annam A, Brown M, Kondo K, Lindquist JD. Complications of Percutaneous Renal Biopsy. Semin Intervent Radiol. 2019 Jun;36(2):97-103. doi:10.1055/s-0039-1688422. Epub 2019 May 22. PMID: 31123379; PMCID:PMC6531025.
2. City Hospital Sunderland. Renal biopsy Patient information leaflet. 2008 Oct. Ref:266/08
3. Smith A. 'Urine colour Sheet'. 2020 Nov.

# The prevalence of premalignant upper GI conditions is underestimated based on endoscopic diagnosis

Andreas V. Hadjinicolaou , on behalf of the PROSPERO group
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Early Cancer Institute

UNIVERSITY OF CAMBRIDGE

## BACKGROUND

- Upper GI (UGI) cancers have very poor prognosis mainly due to diagnosis at late stage
- Endoscopic diagnosis of premalignant conditions,s uch as Barrett's oesophagus (BO), gastric atrophy (GA) or gastric intestinal metaplasia (GIM) allows prevention of advanced cancer.
- There are no diagnostic key performance indicators (KPIs) in UGI endoscopy based on detection of premalignant conditions
- Development of diagnostic KPIs in UGI endoscopy is a priority for the quality assurance bodies BSG and JAG
- Definition of diagnostic KPI relies on in depth knowledge of disease prevalence which is currently unknown

## AIMS

Primary aim:

- Determine the true prevalence of premalignant UGI conditions among people referred for an UGI endoscopy

Secondary aims:

- Estimate the rate of missed endoscopic diagnosis
- Compare rate of diagnosis between prospective and a matched historic cohorts.
- Compare rate of diagnosis based on endoscopic background and duration of endoscopy.

## METHODS

- PROSPERO - a prospective, multicentre study recruiting patients referred for UGI endoscopy across UK hospitals.
- Standardised protocol with 10-picture photodocumentation (Figure 1) and biopsy protocol (4 gastric, 4 oesophageal + any targeted) (Figure 2).

**Figure 1**

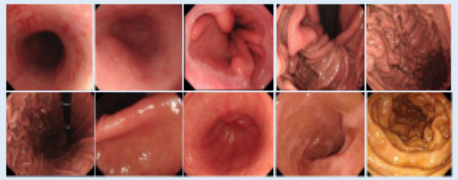


**Figure 2**

Inclusion criteria:

- Patients >18yrs referred via any pathway for UGI endoscopy

Exclusion criteria:

- Previous diagnosis of premalignant lesions under surveillance
- Previous endoscopy in last 3 years
- Previous oesophagogastric surgery for malignant disease

## RESULTS

N = 679

**Figure 3.** Rate of diagnosis (%) for premalignant and malignant UGI pathologies.

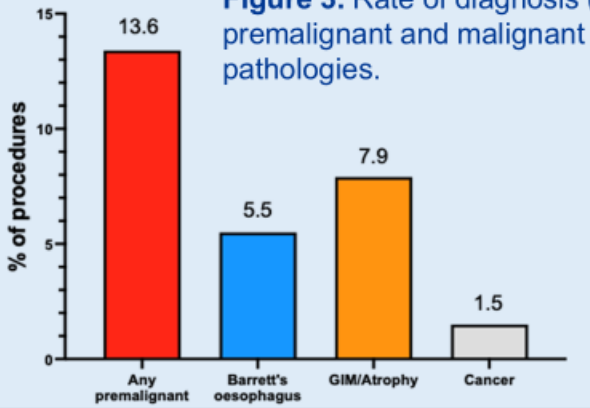



**Figure 4.** Endoscopic detection of GA/GIM


**Figure 5.** Endoscopic detection of GA/GIM actionable for surveillance

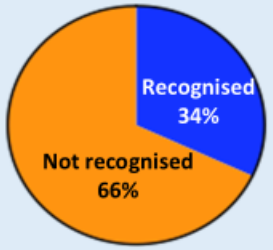



**Figure 6.** Diagnostic rate of premalignant stomach in prospective vs historic cohort

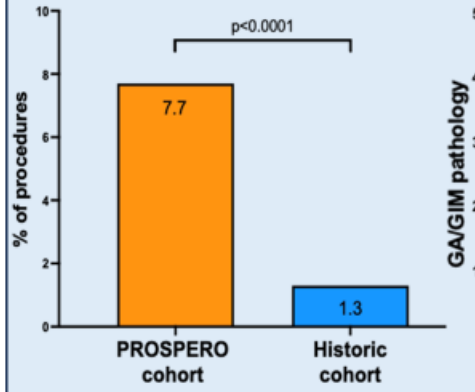
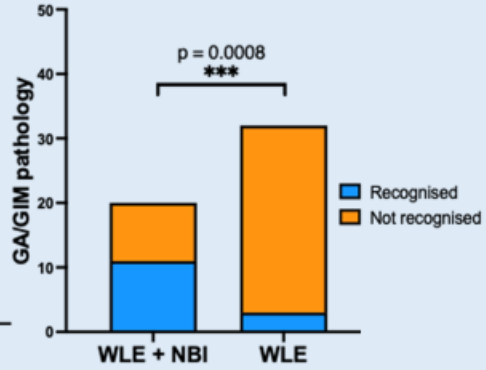



**Figure 7.** Diagnostic yield of premalignant stomach is higher with virtual chromoendoscopy




## CONCLUSIONS

- The overall prevalence of any premalignant UGI condition in the UGI endoscopy population is 13.6%.
- The prevalence of premalignant stomach is ~8%.
- GA/GIM are significantly underdiagnosed in clinical practice due to poor endoscopic recognition. This can be improved with use of NBI.
- This data will help develop diagnostic KPIs for future guidelines to

NHS Worcestershire Health and Care NHS Trust

# Nivolumab and Autoimmune Diabetes Case Report

Razan Salah , Munir Babar , Theingi Zaw , James Roberts
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## Background

With advances in management of malignancy, immune checkpoint inhibitors (ICIs) has become increasingly widespread.

Although ICIs have shown significant efficacy in control of malignant disease, they have also given rise to **immune-related adverse events** (irAEs).

Among ICIs, PD-1 inhibitors such as Nivolumab have been associated with development of autoimmune diabetes mellitus (DM).

## Case presentation

A 73-year-old white British female with metastatic renal cell carcinoma was **treated with Nivolumab** as second-line therapy following disease progression.

**Six months later**, she presented to the Emergency Department with generalized fatigue, lethargy, reduced oral intake and recurrent vomiting. **She was found to be in DKA**. There was no personal or family history of DM.

The patient was discharged on a basal-bolus insulin regime. Her Nivolumab was continued following discussion with oncology specialists.

## Conclusion

- Autoimmune DM is a very rare irAE which occurs in less than 1% of patients on Nivolumab. [1]
- Onset of DM varies from a few weeks to many months from initiation of treatment.[2]
- Autoantibodies present in only around half of reported cases, indicating that there are likely other mechanisms contributing to the development of diabetes. [2]
- Further research is required to help identify these mechanisms.
- Low or undetectable C-peptide levels when tested implies lack of endogenous insulin most likely due to immune mediated loss of B cells.
- Early recognition and accurate diagnosis is crucial for appropriate management and follow up.

## Investigations

| Analysis | Value | Referance Range |
|---|---|---|
| Venous PH | 7.11 | 7.38-7.42 |
| Serum Glucose | 41 mmol/L | 4-7 |
| Ketones | 7.2 mmol/L | <0.6 |
| Bicarbonate | 7.6 mmol/L | 21-26 |
| HbA1c | 78 mmol/mol | 25-41 |
| C-peptide | <94 pmol/L | 370-1470 |
| Anti GAD Abs | 2.0 IU/ml | 0-5 |
| IA2 Abs | 1.6 IU/ml | 0-7.5 |
| Zinc Transporter 8 Abs | 2.6 IU/ml | 0-15 |
| Islet cell Abs | Negative | |
| Insulin Abs | 4.0 mg/L | 0-5 |

HbA1c 3 months prior to admission was 39

## References

[1]Godwin, James Luke, et al. "Nivolumab-induced autoimmune diabetes mellitus presenting as diabetic ketoacidosis in a patient with metastatic lung cancer." *Journal for immunotherapy of cancer* 5 (2017): 1-7.
[2]Wright, Jordan J., Alvin C. Powers, and Douglas B. Johnson. "Endocrine toxicities of immune checkpoint inhibitors." *Nature Reviews Endocrinology* 17.7 (2021): 389-399.

# Neck Pain & Cerebellar Infarcts: The Diagnostic Journey of Giant Cell Arteritis with Vertebral Artery Involvement "From the Assessment Suite to the Stroke team with a Rheumatology Pit-Stop"

Authors : Fahd A Khan, Ben Thompson-Department of Rheumatology, Freeman Hospital Newcastle Upon Tyne- Newcastle University Hospitals NHS Foundation Trust.

The Newcastle upon Tyne Hospitals NHS Foundation Trust

## INTRODUCTION

We describe the clinical course of a 76-year-old female who presented with a constellation of symptoms including neck pain, occipital headache, weight loss, and generalized malaise, off legs and weakness. Initial investigations revealed significantly elevated inflammatory markers. After extensive evaluation over a period of few weeks, including imaging and rheumatological consultation, the patient was diagnosed with Giant Cell Arteritis (GCA) For the internal medicine team, this case underscores the importance of maintaining a broad differential diagnosis and the need for thorough and timely evaluation in elderly patients presenting with atypical symptoms.

## MATERIALS AND METHODS

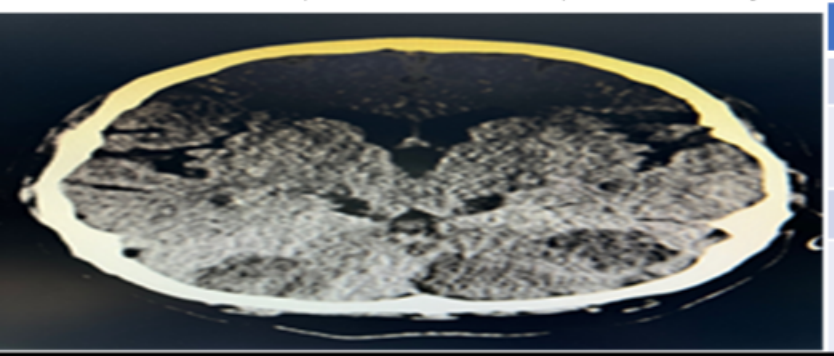
She was admitted mid-March with non specific symptoms, she was investigated by the acute medicine and subsequently by OPM team over a period of four weeks and was finally referred to the Rheumatology team after a PET scan. Upon admission, a thorough examination and comprehensive imaging studies were conducted. This included a CT thorax, abdomen, and pelvis (CT TAP), MRI spine, sacroiliac joints. Laboratory tests were performed to monitor inflammatory markers, autoimmune panels, and other relevant biochemistry. All infective causes including discitis and endocarditis were ruled out. Her inflammatory markers nearly halved with ESR improving to 65 and CRP to 14 without steroids.

## RESULTS AND DISCUSSIONS

Further PET-CT indicated metabolically active arteritis of both vertebral arteries, prompting a suspicion of GCA despite unusual presentation and lack of classic symptoms-eventually referred to Rheumatology. An ultrasound Doppler confirmed active inflammation in the left temporal artery/facial arteries. Despite typical GCA treatment with highdose steroids 60mg prednisolone, her symptoms and inflammatory markers improved over a period of 11 days and she was successfully discharged home. 2 days after discharge she was readmitted with new-onset dizziness, confusion, and cerebellar signs, which a CT angiogram confirmed as extensive bilateral cerebellar and left occipital infarcts due to thrombus in the vertebral and basilar arteries and Proximal likely secondary to vasculitis with risk of spinal cord infarct.She was given high dose aspirin and IV Methylprednisolone to little effect and soon after unfortunately passed away. This case highlights the diagnostic challenge in GCA, especially with atypical presentations. Due to the presence of atypical symptoms and lack of a clear cause of raised inflammatory markers, adjunctive treatments like aspirin may be warranted in such high-risk patients after careful consideration and an MDT discussion.

## CONCLUSION

For the internal medicine team, this case underscores the importance of considering GCA and timely referral to specialty in elderly patients with non-specific systemic symptoms and raised inflammatory markers, even in the absence of classic manifestations. Vigilance for cerebrovascular complications in GCA patients is crucial, and a multidisciplinary approach involving rheumatology, neurology, and stroke teams is essential for optimal patient outcomes. This case advocates for a low threshold for early recognition, discussion with the specialist team including the potential benefits of adjunctive therapies like aspirin. Ultimately, this case serves as reminder of the critical role of internal medicine teams in the early identification and comprehensive management of complex, multisystem disease.



| March-24 | CT TAP | Chronic sacroiliitis, indeterminate adrenal nodule |
|---|---|---|
| March-24 | MRI Spine/SI Joints | No active inflammation/Discitis |
| April-Mid- 2024 | PET-CT | Metabolically active arteritis of vertebral arteries, FDG uptake at gastrooesophageal junction |
| April-Mid Readmission, 2024 | CT Head/Angiogram | Bilateral cerebellar and occipital infarcts |
| April-Mid Readmission, 2024 | CT Carotid Angiogram | Proximal, bilateral vertebral and proximal basilar arterial occlusion in the setting of suspected vasculitis. Risk of spinal cord infarct |

**1)Ref**: Beuker C, Wankner MC, Thomas C, Strecker JK, Schmidt-Pogoda A, Schwindt W, et al. Characterization of extracranial giant cell arteritis with intracranial involvement and its rapidly progressive subtype. *Ann Neurol.* (2021) 90:118–29. doi: 10.1002/ana.26101)

# PRESSURE RECOVERY IN SEVERE AORTIC STENOSIS: The clinical implication of overestimated severity.

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## INTRODUCTION

Aortic valve replacement (AVR) is the most common valvular surgery. Patients undergo rigorous surgical work-up at an estimated cost of of £2000—6000/ patient. Transthoracic echocardiogram (TTE) is often the initial diagnostic modality upon which subsequent decisions are made. However, a small aortic root can over-estimate the severity via a pressure recovery (PR) phenomena.

## CASE SUMMARY

•50-year-old female referred for TTE due to palpitations, exertional dyspnoea, and dizziness over three years.

Table 1: below shows the summary report of the TTE

(SoV- Sinus of vasalva; STJ- sinotubular junction; Asc- ascending)

| Parameter | Measurement | Normal ranges |
|---|---|---|
| Aortic valve area (AVA) | 0.89cm² | <1 = severe |
| Index AVA | 0.477cm²/m² | <0.60cm²/m² = severe |
| Dimensionless index | 0.25 | <0.25 = severe |
| Mean pressure gradient | 44.19mm Hg | >40 mm Hg = severe |
| Peak velocity | 4.27m/s | >4 m/s = severe |
| LVOT diameter | 2.07 cm | |
| Aortic root diameters (indexed to height – mm/m² | SoV: 17.62<br>STJ: 13.01<br>Asc aorta: 17.04 | SoV = 22-34<br>STJ = 18-30<br>Asc Aorta = 11-20 |

•TTE: tricuspid aortic valve with rheumatic left coronary cusp, mildly reduced leaflet movement and severe aortic stenosis (AS) suggested by:
•After correction for pressure recovery (PR), moderate AS was revealed.

## RESULTS

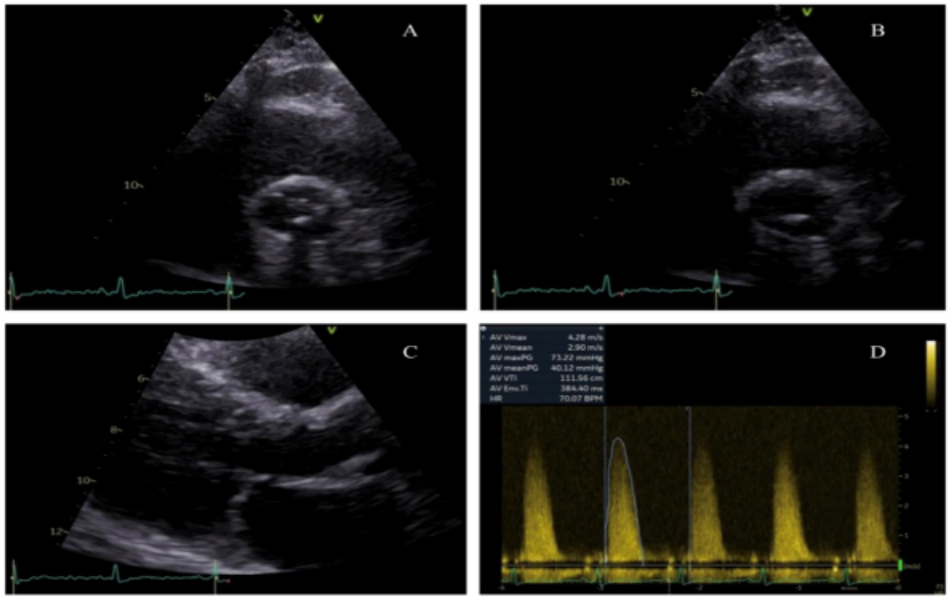



**Figure 1:** Echocardiogram: Short axis view with closed AV (A) and open AV (B), showing good excursion. Parasternal long axis view with open AV (C). Doppler AV velocity and PG measurements (D).

## CONCLUSION

**Should PR assessment become routine practice in AS assessment?**

## DISCUSSION

Echocardiography: non-invasive, accessible, and the gold standard for assessing valve disease, but it has limitations. Aortic stenosis assessment relies on:

- **Continuity equation:** Measures AVA by assuming that blood flow before the AV is equal to flow through the AV therefore LVOT velocity x LVOT area = AV velocity x AVA
- **Bernoulli principle:** Explains increased velocity and pressure drop across a stenotic aortic valve (AV), leading to high mean pressure gradient (PG).

Pressure recovery (PR): When blood flows through the stenotic AV and slows down in the wider aortic root, some pressure is recovered.

- Small aortic root (e.g., small STJ) reduces or eliminates PR, making the high mean PG potentially reflect the narrow aortic root instead of severe AS.
- Patient's small STJ (13.01mm/m) contributes to this phenomenon.
- **British Society of Echocardiography (BSE) presently ONLY recommends PR correction only for low-gradient aortic stenosis.**

## REFERENCES

1. Publication O. 2023 / 25 NHS Payment Scheme. 2023;(June):1–40.
2. Garcia D, Dumesnil JG, Durand LG, Kadem L, Pibarot P. Discrepancies between catheter and Doppler estimates of valve effective orifice area can be predicted from the pressure recovery phenomenon: practical implications with regard to quantification of aortic stenosis severity. J Am Coll Cardiol. 2003 Feb 5;41(3):435–42.
3. Garcia D, Pibarot P, Dumesnil JG, Sakr F, Durand LG. Assessment of aortic valve stenosis severity: A new index based on the energy loss concept. Circulation. 2000;101(7):765–71.
4. Ring L, Shah BN, Bhattacharyya S, Harkness A, Belham M, Oxborough D, et al. Echocardiographic assessment of aortic stenosis: A practical guideline from the British Society of Echocardiography. Echo Res Pract. 2021;8(1):G19–59.

# Minimising Unnecessary Blood Orders: A Cost Saving QIP in Respiratory Departments at Leeds University Hospital

NK Htwe[1], K. Htet Aung[1], CJ Rowan[1], I Clifton[1] 1. Leeds Teaching Hospitals NHS Trust, West Yorkshire

The Leeds Teaching Hospitals NHS Trust

## Introduction

Blood test investigations are central to health care services, contributing to 70-80% of the medical decisions affecting diagnoses and patient care. Nearly 800 million pathology tests are performed annually.[1] According to the Carter of Coles Review, pathology services in England cost about £2-3 billion per annum. It is estimated that about 25% are unnecessary repeat tests having no impact on patient care.[2]

## Aims

To study the costs of repeated blood tests and implement interventions with the aim of reducing unnecessary blood investigations to the minimum clinically indicated, reducing the inappropriate repetition of costly specialist tests and saving financial resources.

## Materials and methods

This project included both retrospective and prospective studies. The retrospective analysis of the repeated blood test costs from 2022-2023 focused on routine tests (high frequency, low cost) and specialist tests (low frequency, high cost), with data sourced from the electronic systems. A series of interventions including presentations and posters were implemented in 2023-2024 while the data were monitored during the same period.

Figure 1: Cost of Repeated routine tests

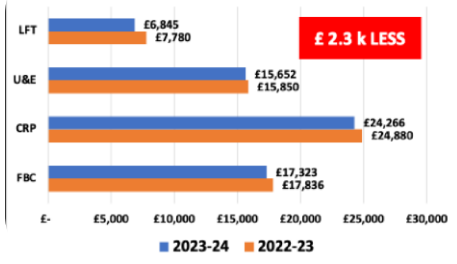



Figure 2: Cost of Repeated specialist tests

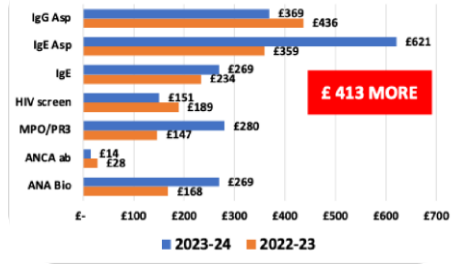



Figure 4 :Mean Volume of Repeated CRP tests per week 23-24

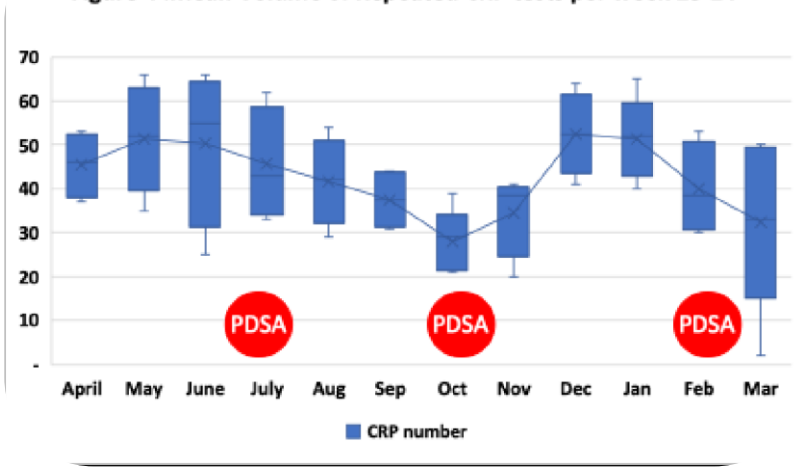
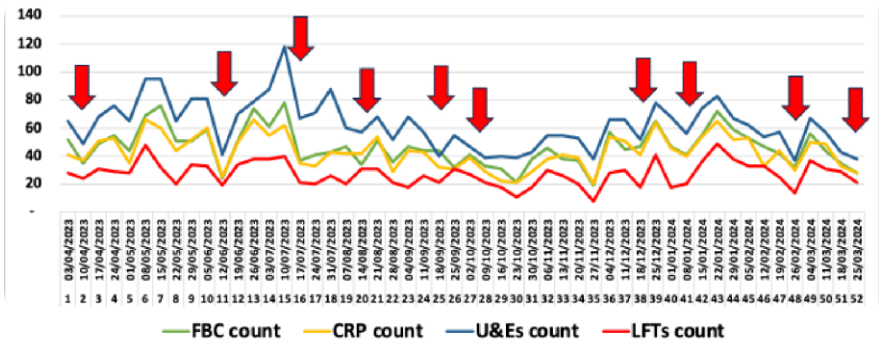



Figure 3: Number of repeated tests during JD Strikes 2023-2024




## Results and discussion

- The total approximate cost of the blood tests in 2022/23 was £213,000, with repeated blood tests accounting for about 31% (£68,000) of this amount.
- Although the specific indications for each repeated test were not studied, it was observed that CRP tests were often repeated inappropriately, potentially without effecting patient management. - The mean CRP volume reduced after intervention but increased again with a new batch of junior doctors. (Fig 4)
- Duplicate requests for specialist tests frequently occurred, particularly during ward transfers when it was unclear if the necessary blood samples had already been taken. For instance, 3 HIV tests were taken in 3 patients over 3 days, and 6 patients had duplicate vasculitis screenings on the same day.
- The junior doctors' strikes led to a noticeable reduction in the number of routine blood test requests during the strike periods. (Fig 3)
- In 2023-2024, the cost of repeated routine tests decreased by £2,300 compared to the previous year, while the cost of specialist tests increased by £400. (Fig 1&2)

## Conclusion

This project highlighted the significant financial impact of unnecessary repeated blood tests. Implementation of routine and repeated educational interventions and promoting best practices resulted in a reduction of the cost of routine blood tests. However, ongoing efforts are needed to address the rise in specialist test costs and ensure sustainable improvements in test ordering practices.

Scan for poster

SCAN ME

**References**

[1] Royal College of Pathologist. *National Pathology Programme Digital First: Clinical Transformation through Pathology Innovation.* https://www.england.nhs.uk/wp-content/uploads/2014/02/pathol-dig-first.pdf. [Accessed 31 August 2024]

[2] Lord Carter of Coles. *Report of the Review of NHS Pathology Services in England.* https://www.bipsolutions.com/docstore/pdf/14047.pdf. [Accessed 31 August 2024]

# Recreational Nitrous Oxide Use and Venous Thromboembolic Events -- A Systematic Review of Cases.

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## RCP Med+ 2024

### Introduction

Recreational nitrous oxide (NO) use is a topic of urgent concern and growing interest in the medical community. It is known to have euphoric and anti-anxiety properties. It has caused complications like psychosis, functional vitamin B12 deficiency with resultant neurologic deficits (subacute combined degeneration of the cord), and venous and arterial thrombosis. Since November 2023, NO has been controlled as a Class C drug under the Misuse of Drugs Act 1971 and placed in Schedule 5 of the Misuse of Drugs Regulations 2001 in the UK[1]. The Netherlands is the other country where it is banned[2]

### Aim

To evaluate the pattern of venous thromboembolic events (VTE) in persons who use nitrous oxide recreationally.

### Method

A search strategy was developed using the PICO outline, and a literature search was conducted on July 6, 2024, on the Ovid database to identify case reports/series related to the topic. The identified papers underwent a review of titles and abstracts, a full-text review, and data extraction. Two authors reviewed each paper, and the lead author resolved conflicts from the review.

***Inclusion criteria***

- Age of 16 years and above
- Recreational nitrous oxide use
- Any form of venous Thromboembolic event

***Exclusion criteria***

- Age less than 16 years
- Malignancy of any sort
- History of thrombophilia
- Use of any form of hormonal medication

### Results

This work included 17 papers (see table 1) and 19 patients, ages 16 – 66. 11 (57.9%) were males, and 8 (42.1%) were females. About 10 (52.6%) had VTE events involving more than one site, while 9 (47.4%) had a single-site VTE event (see Figure 1).

### Discussion

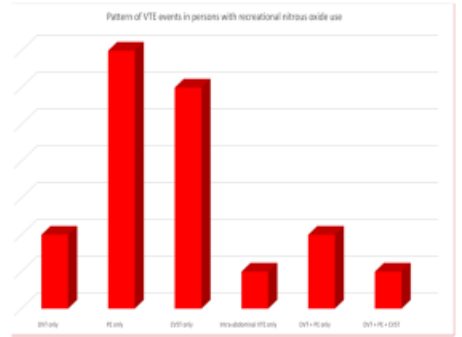
There have been a good number of publications on recreational NO use and the development of neurological complications like subacute combined cord degeneration. Some literature has mentioned a link between NO and venous thromboembolic events[3]. Evaluating the pattern and extent of VTE in persons who use NO recreationally is important. NO causes an irreversible inactivation of vitamin B12, a co-factor for methionine synthetase. This leads to hyperhomocysteinaemia, which results in a hypercoagulable state and the subsequent development of a venous thromboembolic event.

### Limitations

- The number of studies included in this work is small; therefore, the findings from this review cannot be generalised.
- Since case reports are observational and lack control groups, they cannot establish cause-and-effect relationships.
- A higher tendency of publication bias impacts systematic reviews done with case reports/case series.
- Despite these limitations, systematic reviews using case reports can still provide valuable insights on emerging conditions.

Table 1. Summary of the table characteristics of the included cases.

| Authors | Year | Country | Gender, Age (years) | VTE event type/location | D-dimer | B12 level | Homocysteine level | Methylmalonic acid level |
|---|---|---|---|---|---|---|---|---|
| Hamdan et al. | 2004 | USA | Male, 16 | PE | Elevated | Low | Elevated | Not checked |
| Sun et al. | 2009 | China | Male, 29 | DVT PE | Elevated | Elevated | Elevated | Not checked |
| Erin Meir et al. | 2009 | USA | Male, 22 | DVT | Not checked | Low | Elevated | Elevated |
| Chiu and Lee | 2002 | Taiwan | Male, 19 | DVT PE CVST | Not checked | Low | Elevated | Not checked |
| De Kalbi et al. | 2001 | Netherland | Male, 24 | CVST | | Low | Elevated | Elevated |
| Peng et al. | 2019 | China | Male, 20 | CVST | Elevated | Normal | Elevated | Not checked |
| Farhoiu et al. | 2001 | France | Female, 26 | CVST | | Low | Elevated | Normal |
| Pavoin and Bollens. | 2003 | Belgium | Female, 21 | PE | Not checked | Low | Elevated | Elevated |
| Pedersen et al. | 2001 | Denmark | Male, 19 | PE | Not checked | Normal | Elevated | Elevated |
| Chazan et al. | 2015 | United Kingdom | Case 1 – Male, 27<br>Case 2 – Female, 21 | Case 1 – CVT<br>Case 2 – CVST | Not checked | Case 1 – Normal<br>Case 2- Normal | Case 1 – elevated<br>Case 2 - Elevated | Case 1 – Elevated<br>Case 2 - Elevated |
| Shulman et al. | 2007 | Australia | Female, 29 | DVT PE | Not checked | Low | Not checked | No checked |
| Shah and Naidu | 2012 | United Kingdom | Male, 20s | PE | Elevated | Not checked | Elevated | Not checked |
| McMahon et al. | 2004 | Sweden | Female, 21 | PE | Not checked | Normal | Elevated | Not checked |
| Pratt et al. | 2000 | USA | Female, 21 | CVST | Not checked | Normal | Elevated | Elevated |
| Vollenbrock et al. | 2000 | Netherlands | Female, 21<br>Male, 27 | Portal and splenic vein thrombosis<br>PE | Not checked | Normal<br>Low | Elevated<br>Elevated | Not checked<br>Not checked |
| Wagner and Liechty | 2011 | USA | Male, 66 | PE | Not checked | Low | Elevated | Elevated |
| Bunjongjit et al. | 2015 | Thailand | Female, 19 | CVST | Not checked | Low | Elevated | Not checked |




1. A bar chart showing the pattern of VTE sites in persons with recreational nitrous oxide use.
wp Vein Thrombosis
Pulmonary embolism
venous thromboembolic event
Cerebral Venous Sinus Thrombosis

### Conclusion

Persons with nitrous oxide-induced VTE events appear to have multiple-site VTE events. This review highlights recreational NO use as an emerging risk factor for VTE, and knowing this will allow for a prompt diagnosis and treatment in patients who use NO recreationally.

### References

1. Nitrous oxide ban [Internet]. GOV.UK. Available from: https://www.gov.uk/government/publications/nitrous-oxide-ban [Accessed 08/08/2024].
2. Netherlands to ban laughing gas from January. BBC News [Internet]. 2022 Nov 15; Available from: https://www.bbc.co.uk/news/world-europe-63634557 [Accessed 08/08/2024].
3. Shoaib H, Faryad S, Phan P, Asghar M. Pulmonary Embolism Associated with Nitrous Oxide Abuse. Chest. 2021 Oct;160(4): A2236. Available at: https://doi.org/10.1016/j.chest.2021.07.1969.

# A quality improvement project to improve the support available to IMT trainees through the development of an IMT Peer Support Scheme

Dr Rebecca Finch IMT3, Dr Aries Connolly IMT3, Dr Henrietta von Hawrylak IMT3, Dr Lindsay Jones IMT College Tutor

NHS
Royal Devon University Healthcare
NHS Foundation Trust

## Introduction

- Internal Medicine Training (IMT) is a demanding training programme with an extensive curriculum[1] that must be achieved alongside service provision, including out-of-hours work, in a pressurised system.
- For many, commencing IMT involves an increase in clinical responsibility which is often combined with additional stressors such as relocation, working in new departments and/or hospitals, working in unfamiliar specialities and sitting membership exams.
- We aimed to improve the support available to IMT trainees through the development and implementation of a Peer Support Scheme. This was in addition to the formal support provided by Supervisors and College Tutors.

## Methods

- A baseline survey was performed to gain feedback from IMT trainees on the support available prior to any intervention. Based on this feedback, we developed an IMT Peer Support Scheme which was implemented in August 2023.
- All IMT trainees were invited to participate. IMT 1/2s were invited to receive support and IMT 2/3s were invited to provide support. Eight peer supporters (4 IMT2s and 4 IMT3s) and twelve 'supportees' (10 IMT1s and 2 IMT2s) enrolled and were paired based on similar previous or upcoming rotations where possible.
- Participants were encouraged to arrange an initial meeting, with a view that contact following this could be flexible depending on the trainees' needs. Two group Peer Support sessions were conducted during the year which all IMT trainees were invited to attend.
- Post intervention surveys were performed in March 2024 allowing us to evaluate the scheme and develop it for the next cohort.

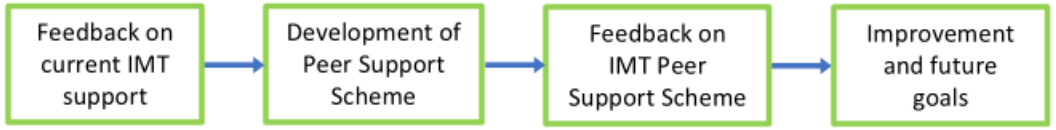



**Figure 1**: Flowchart to demonstrate QI project methodology

## References

1. Curriculum for Internal Medicine Stage 1 Training: Implementation August 2019 JRCPTB. https://www.thefederation.uk/sites/default/files/Internal%20Medicine%20stage%201%20curriculum %20FINAL%20111217.pdf [Accessed 22 August 2024]

## Results

- The pre-intervention survey (n=5) identified that 60% of current IMT trainees felt they didn't have enough support when commencing IMT (Figure 2) and 100% felt an IMT Peer Support Scheme would be useful. Curriculum and e-portfolio, exam preparation and maximising clinic attendance were areas that trainees particularly felt they would have valued extra support.
- Post-intervention surveys were conducted 7 months after implementation.
- The post-intervention survey of IMT 'supportees' (n=8) identified 87% found the IMT Peer Support Scheme helpful (Figure 3).
- The post-intervention survey of IMT supporters (n=4) found 100% felt comfortable supporting their peers, however 25% felt additional support in delivering this role would be beneficial.
- Qualitative feedback from a supporter established that the scheme 'makes for a supportive IMT atmosphere'.

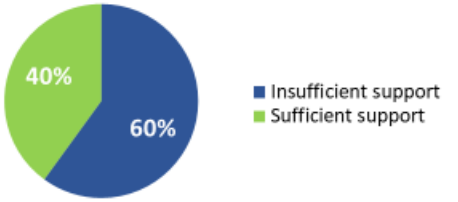



**Figure 2**: The proportion of IMT trainees that felt they didn't have enough support available when commencing IMT (pre-intervention)

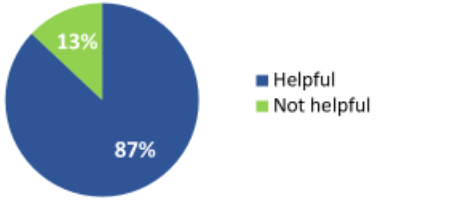



**Figure 3**: The proportion of IMT peer 'supportees' that found the IMT Peer Support scheme helpful

## Discussion

- The scheme has been shown to improve the support available to IMT trainees locally. Although not a primary aim, it has also facilitated a leadership opportunity for those providing support.
- Based on feedback we have identified areas for improvement, including a clear outline of expectations for both parties and the provision of further support for those acting as IMT peer supporters. We are currently creating a resource covering general and IMT specific topics.
- The scheme was re-implemented in August 2024 and we are performing a second cycle of this QI project.

## Conclusion

- We have demonstrated that an IMT Peer Support Scheme enhances trainees' experiences, providing an additional form of support that is tailored to the unique needs of IMT trainees.
- Following the success of the IMT Peer Support Scheme, the trust is considering the development of a similar scheme to support international medical graduates.

# Retrospective analysis to determine potential predictors of talc pleurodesis success in patients with malignant pleural effusion

Catherine Roberts, Junyi Zhang, Owais Kadwani

Guy's and St Thomas' NHS Foundation Trust

## 1 Introduction

Malignant pleural effusion affects up to 15% of patients with cancer[1] with an average prognosis of 3-12 months.[2] The treatment options include the use of chemical pleurodesis, with a reported 81.4% success rate as per the TIME1 trial.[3] Analysis of our local cohort was performed to determine if there were any specific factors to predict success.

## 2 Methods

Data were gathered from January 2020 to December 2023. The inclusion criteria were patients with a malignant pleural effusion given a talc slurry via chest drain or indwelling pleural catheter (IPC). Data were collected for several variables including:

- primary tumour type
- performance status (PS)
- procedure location (elective: inpatient or outpatient or acute i.e. performed opportunistically during a hospital admission)
- post-procedure drain care (including use of suction & any issues e.g. difficulty in aspiration)

Procedure failure was defined as evidence on imaging (USS/CT) of re-accumulation before 12 months post-pleurodesis or unplanned removal of the IPC/chest drain. Statistical analyses were performed using unpaired t-tests and Pearson correlation.

## 3 Results

- 24 patients (17 female, 7 male) aged 38-82 years were treated during the three-year period, median PS = 1.
- The most common primary tumours were ovarian (n=8) and lung (n=7).
- Pleurodesis was performed mainly in the inpatient setting (see Figure 1).
- Across the whole cohort, the overall success rate was 45.4% (n=10) with a failure rate of 54.5% (n=12) and no follow up data for 2 patients.
- For outpatients given pleurodesis through IPC (n=5) there was an 80% success rate. The location of treatment was statistically significant to predict success (p=0.003).
- Of the failed inpatient procedures, 36.3% had associated documentation of a post-procedure issue e.g. difficulty in aspiration or blockage resulting in drain removal.

### Key points

- The success rate of pleurodesis varied depending on setting (inpatient 35.3% vs outpatient 80%) and device (IPC 85.7% vs chest drain 26.7%)
- There was no correlation between pleurodesis success and patient age (p=0.74), performance status (p=0.53) or pre-procedure CRP (p=0.1).

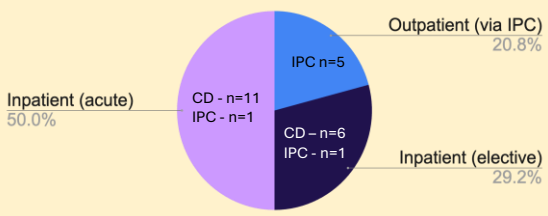



*Figure 1. Pie chart illustrating the location of pleurodesis: performed as an outpatient via IPC or as an inpatient, (elective or acute admission) via chest drain or IPC.*

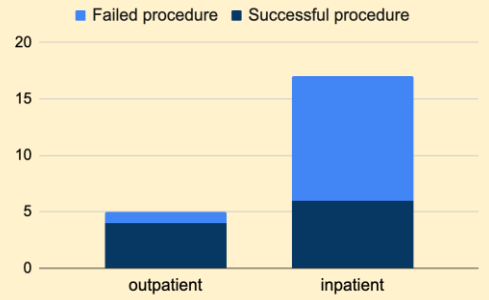



*Figure 2. Bar chart showing procedure success in the inpatient and outpatient setting.*

## 4 Discussion and conclusion

The reported success in those treated as an outpatient and given pleurodesis via IPC is promising, however difficult to generalise given the very small data set. The significant difference between the success rate of both devices (chest drain and IPC) contrasts with previous literature[4] and suggests the presence of confounding variables. For those treated as an inpatient there are likely to be important factors to consider, for example co-morbidities, operator differences and ward management of inpatient drains. Given the high rate of post-procedure drain issues (36.3%) this should be explored further and addressed to improve future practice. In summary, there is further work required to assess the impact of the inpatient versus outpatient setting for talc administration.

Finally, it would be pertinent to understand the patient experience between those treated as an inpatient versus those managed as an outpatient.

## References

1. Clive AO et al. Interventions for the management of malignant pleural effusions: a network meta-analysis. *Cochrane Database Syst Rev.* 2016;2016(5):CD010529.
2. Roberts ME, et al. Management of a malignant pleural effusion: British Thoracic Society pleural disease guideline 2010. *Thorax* 2010;65:ii32-ii40.
3. Rahman NM et al. Effect of Opioids vs NSAIDs and Larger vs Smaller Chest Tube Size on Pain Control and Pleurodesis Efficacy Among Patients With Malignant Pleural Effusion: The TIME1 Randomized Clinical Trial. *JAMA*. 2015;314(24).
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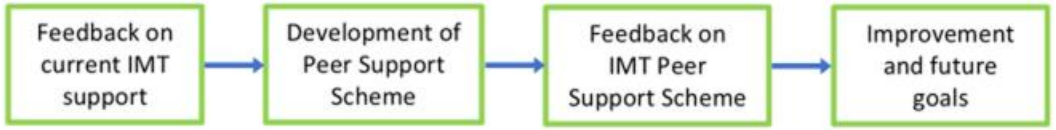


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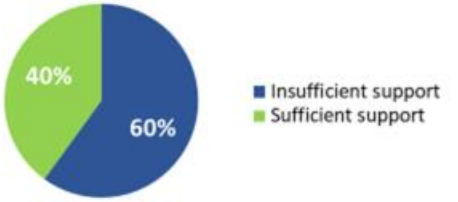


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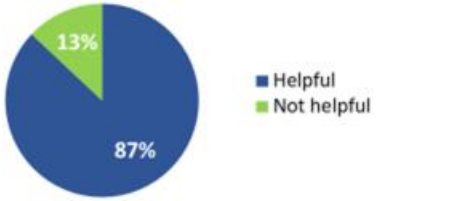


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# Significance Of Echocardiograms In The Acute Setting On Treatment Plans Following A Diagnosis Of Pulmonary Embolism

Dr S Sharma Dr A Dinesh, N Sujathan, Dr Y Bae, Dr H Atassai and Dr G. Aldik
*Respiratory Department Royal Surrey County Hospital, Guildford, UK*

Royal Surrey NHS Foundation Trust

## Introduction

The current NICE guidelines do not include echocardiograms (ECHO) in the immediate diagnostic work-up following a confirmed pulmonary embolism (PE)[1]. Current research suggests some benefit in conducting an ECHO after a PE only in those patients with signs of right ventricular (RV) strain noted on a CT pulmonary angiogram (CTPA). Some systematic reviews and meta-analyses posit that RV dysfunction on ECHO is associated with an increased risk of short-term mortality in haemodynamically stable patients [2]; however, its overall positive predictive value for PE-related mortality was low in a meta-analysis [3].

There is no conclusive evidence that patients diagnosed with PE require an ECHO in the acute setting unless right heart strain is detected on CT. Although the value of performing an ECHO for those with right heart strain on CT remains limited, it continues as the clinical standard due to evidence showing that ECHOs provide additional prognostic information and have higher specificity for right heart strain compared to CT. [4]

## Aims

Assess whether patients underwent an ECHO immediately after a radiologically confirmed diagnosis of PE and whether this impacted on their further management.

Conduct a preliminary financial analysis of unnecessary ECHO requests and subsequent clinical recommendations to ensure that ECHOs are requested when clinically appropriate and relevant to the patient's care.

Present findings of our study to the relevant teams and provide our recommendations based on the study.

Conduct a follow-up audit to confirm the success of our intervention and ensure adherence to the clinical recommendations.

Audit standards: 2019 European Society of Cardiology (ESC) Guidelines for the diagnosis and management of acute pulmonary embolism developed in collaboration with the European Respiratory Society (ERS)[2].

## Methodology

Retrospective study of patients with a CTPA confirmed PE.

Assessing whether those with radiological evidence of PE had evidence of right heart strain on CT.

Assessed whether they underwent an immediate ECHO following this diagnosis.

Analysed when the ECHO was conducted and whether this investigation had an impact on their clinical management using Surrey Safe Care, Cardiology Viewer and SECTRA.

Stratified patients into two groups: those with right heart strain on CT and those without.

Analysed clinical documentation to determine whether the ECHO result had an impact on management in the acute period.

Analysed the data and made recommendations based on the results.

Presented these findings to the Acute Medical Unit (AMU) team and at a local meeting.

Repeated audit 2 months post-intervention to ensure our recommendations were being followed.

## Results- Cycle 1

- 776 reports were analysed for a potential PE across the four-month period from October 2023 – January 2024. 104 reports were identified as having radiological evidence of PE.
- 50 patients (48%) had ECHOs conducted of which 28 (56% had no CT evidence of right heart strain.
- 12 scans (24%) demonstrated a raised pulmonary artery systolic pressure (PASP).
- Four patients had repeat ECHOs (in one to six months' time) of which 1 demonstrated an ongoing raised PASP.
- There was one documented change to management following these ECHO scans.
- There were 46 patients (96%) who had ECHOs which had no documented impact on their management plan.

## Results- Cycle 2

- 415 reports were analysed for a potential PE across the four-month period from June 2024-August 2024.
- 40 reports were identified as having radiological evidence of PE.
- 17 patients (42.5%) had ECHOs conducted of which 6 scans (35%) had no CT evidence of right heart strain (RHS). (Image 2)
- Overall ECHOs reduced by 6% and those without RHS reduced by 21%
- 5 scans (26%) demonstrated a raised pulmonary artery systolic pressure (PASP).
- 1 patient had repeat ECHO in 1 month time which showed low probability of raised pulmonary pressures ( this patient had high PASP on initial ECHO).
- 0 patients had any documented change in management as a result of the echocardiograms done. (Image 1)

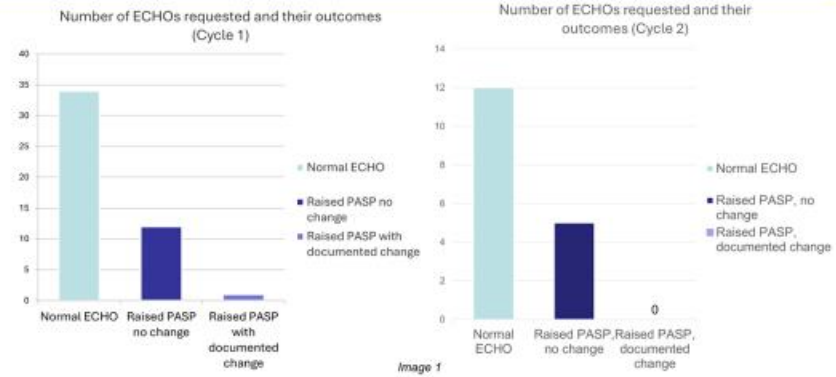


*Image 1*

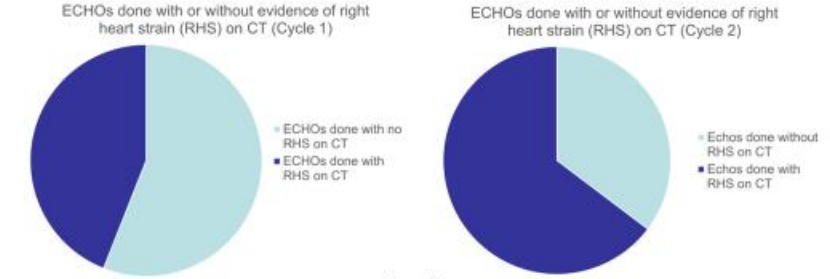


*Image 2*

## Conclusions

- Our analysis shows that, although less than half of patients diagnosed with pulmonary embolism (PE) received an echocardiogram (ECHO) in the acute setting, those who did generally saw no subsequent change in management.
- Following our intervention, unnecessary ECHOs—specifically those for patients without right heart strain on CT—were reduced by 21%, and the overall number of ECHOs decreased by 6%.
- According to the NHS England 2021/22 financial report, the average cost of an ECHO is £87[5], translating into approximately £828 in savings from out-of-guideline ECHOs over the two-month period of our second audit cycle.
- However, around £522 was still spent on unnecessary ECHOs during this time, highlighting room for further improvement.
- Given that our data indicates echocardiograms in acute settings generally do not impact management for PE, we propose conducting a systematic review to evaluate current evidence on the value of echocardiograms in these cases.
- We will use the findings from this systematic review to serve as the basis for updating clinical guidelines, providing definitive evidence on whether routine ECHOs should be recommended or avoided in acute settings for PE.

To optimize patient care and resource utilization, it is essential to continue avoiding unnecessary echocardiograms (ECHOs) in acute pulmonary embolism (PE) cases. While we don't currently have high-quality research to support that ECHOs do not impact management in these settings, our data suggest a limited effect on treatment decisions.

**References**

1. *NICE (2020). Overview | Venous thromboembolic diseases: diagnosis, management and thrombophilia testing | Guidance | NICE. [online] www.nice.org.uk. Available at: https://www.nice.org.uk/guidance/ng158.*
2. *Konstantinides, S.V., Meyer, G., Becattini, C., Bueno, H., Geersing, G.-J., Harjola, V.-P., Huisman, M.V., Humbert, M., Jennings, C.S., Jiménez, D., Kucher, N., Lang, I.M., Lankeit, M., Lorusso, R., Mazzolai, L., Meneveau, N., Ni Áinle, F., Prandoni, P., Pruszczyk, P. and Righini, M. (2019). 2019 ESC Guidelines for the diagnosis and management of acute pulmonary embolism developed in collaboration with the European Respiratory Society (ERS). European Heart Journal, [online] 41(4). doi:https://doi.org/10.1093/eurheartj/ehz405.*
3. *Coulange, G., Cauderlier, E., Ehtisham, J., Hanson, M. and Hanson, M. (2011). The prognostic value of markers of right ventricular dysfunction in pulmonary embolism: a meta-analysis. Critical Care, 15(2), p.R103. doi:https://doi.org/10.1186/cc10119.*
4. *Dudzinski, D.M. et al. (2017) 'Assessment of right ventricular strain by computed tomography versus echocardiography in acute pulmonary embolism', Academic Emergency Medicine, 24(3), pp. 337–343. doi:10.1111/acem.13308.*
5. *NHS England (2021). National Cost Collection for the NHS. [online] www.england.nhs.uk. Available at: https://www.england.nhs.uk/costing-in-the-nhs/national-cost-collection/.*