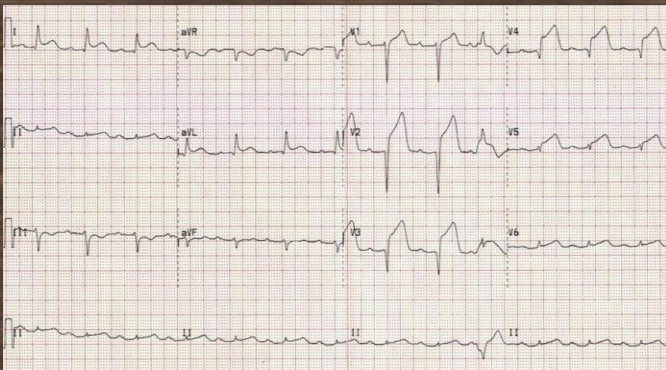


Introduction

Rituximab is a genetically engineered chimeric mouse/human monoclonal antibody representing a glycosylated immunoglobulin with human IgG1 constant regions and murine light-chain and heavy-chain variable region sequences. The antibody is produced by mammalian cell suspension culture and purified by affinity chromatography and ion exchange, including specific viral inactivation and removal procedures. It is used in

1. Non-Hodgkin Lymphoma
2. Chronic Lymphocytic Leukaemia
3. Granulomatosis with polyangiitis and microscopic polyangiitis
4. Pemphigus vulgaris
5. In treatment of Epstein-Barr Virus infection.

Takotsubo Cardiomyopathy is a syndrome characterized by transient regional systolic dysfunction, principally, of the left ventricle, mimicking myocardial infarction, but in the absence of angiographic evidence of obstructive coronary artery disease or acute plaque rupture. The onset of stress cardiomyopathy is frequently but not always triggered by intense emotional or physical stress (eg death of relatives, particularly if unexpected, domestic abuse, arguments, catastrophic medical diagnoses, devastating financial or gambling losses, natural disasters, or acute medical illness). Infusion-related reaction by Rituximab were reported in more than 50% of patients in clinical trials, and were predominantly seen during the first infusion, usually in the first one to two hours. These symptoms mainly comprised fever, chills and rigors. Other symptoms included flushing, angioedema, bronchospasm, vomiting, nausea, urticaria/rash, fatigue, headache, throat irritation, rhinitis, pruritus, pain, tachycardia, hypertension, hypotension, dyspnoea, dyspepsia, asthenia and features of tumour lysis syndrome. Severe infusion-related reactions (such as bronchospasm, hypotension) occurred in up to 12% of the cases.

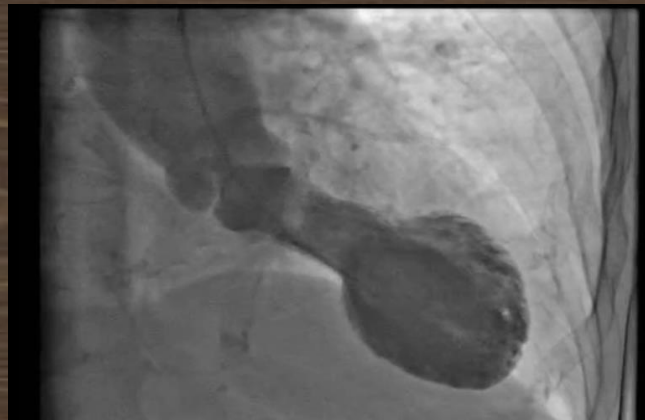


Takotsubo cardiomyopathy or hidden cardiotoxic event by Rituximab

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Results and Discussions

A 52-year-old Gentleman presented to Haematology Unit with Fever of unknown origin, was found out to have Epstein-Barr Virus active infection. He has past medical history of unstable angina and treated acute myeloid leukaemia with allogenic stem cell transplant. IV Rituximab treatment was given according to MDT discussion. 10 mins after the start of IV Rituximab infusion (15 ml has been given already), patient developed fever, rigors, hypotension which is normally found as infusion related reaction. However, in difference to usual reaction, patient also complained of cardiac sounding chest pain with unstable haemodynamic status. ECG was performed and there was evidence of ST elevation MI. Patient was transferred immediately to Tertiary centre for urgent coronary angiogram and later was diagnosed as Takotsubo cardiomyopathy with typical appearance of apical ballooning findings on LV gram in the absence of angiographic evidence of obstructive coronary artery disease or acute plaque rupture



Materials and methods

Retrospective study of a clinical case of cardiac reaction caused by Rituximab infusion in haematological day unit by history taking, physical examination, ECG, Blood test and coronary angiogram report.

Conclusion

Acute infusion related reaction can be considered as a medical stress in causing Takotsubo Cardiomyopathy, unusual and hidden side effect of Rituximab infusion. There were reported evidences of angina pectoris, cardiac arrhythmias such atrial flutter and fibrillation, heart failure and/or myocardial infarction, Takotsubo Cardiomyopathy after Rituximab infusion. Therefore, Patient with a history of cardiac disease and/or cardiotoxic chemotherapy should be monitored closely during Rituximab infusion and also should have a proper and thorough pre-assessment cardiovascular risks before Rituximab infusion.

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