Reducing anti-cholinergic burden in elderly patients

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AIMS

• To reduce anticholinergic burden (ACB) score of elderly patients’ regular medications
• To encourage routine review of polypharmacy in elderly population of inpatients
• To improve patient’s prospective long-term cognition on discharge

BACKGROUND

Anticholinergic burden (ACB) is the cumulative effect of taking 1 or more medications with anticholinergic activity. The higher the cumulative score the higher the accumulative risk of deteriorating cognition and mortality¹.

In a study of >3000 people age 65 and over, the risk of dementia and Alzheimer’s disease after 10 year follow up increased in a dose-response relationship with use of anticholinergic drugs².

An anticholinergic burden score of 3+ is particularly associated with an increased cognitive impairment and mortality³.

METHODS

2 cycles of QIP where patients ACB scores were calculated on arrival to the ward, and then re-calculated on discharge. ACB calculated using http:// www.acbcalc.com/.

Cycle 1: recorded a 2 week baseline cohort of patients, measured without any intervention. Followed by a further 2 week cohort of patients after the QIP was promoted to ward team, emphasising need to review medications to attempt reduction of ACB prior to discharge.

Cycle 2: poster on ACB created to educate ward MDT and placed in MDT office. Pharmacist involved to input ACB score of patients into their notes, to flag scores and encourage review of medications. ACB scores calculated for further 2 week cohort of patients.

Results: high risk anticholinergic burden patients (score ≥3)

<table>
<thead>
<tr>
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<th>Baseline</th>
<th>Cycle 1</th>
<th>Cycle 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of patients with admission score of ≥3</td>
<td>8</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td>Number of patients that had ACB score ≥3 reduced on discharge</td>
<td>3</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>% patients with high risk ACB reduced on discharge</td>
<td>37.50</td>
<td>37.50</td>
<td>46.67</td>
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EVALUATION

• Each cycle had 10+ patients die whilst inpatient and were subsequently removed from data extraction.
• Morphine was the most common drug responsible for patients discharged with a higher ACB than on admission.
• More success at reducing burden of highest scorers – good but need to be vigilant on lower scoring patients, as medications left on GP repeats may not be re-reviewed for years.

Score ≥3 is associated with ↑ cognitive impairment + ↑ mortality

CONCLUSION

• Higher risk patients / higher scoring anticholinergic burden were more likely to have medications stopped as inpatient.
• There is still a lot of scope to improve stopping of medications that contribute to ACB whilst inpatient.
• Plan to expand on last cycle to other wards and involve pharmacists in taking bigger role on reducing ACB.

Summary of Results Table

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>Cycle 1</th>
<th>Cycle 2</th>
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</thead>
<tbody>
<tr>
<td>Total number of patients</td>
<td>42</td>
<td>45</td>
<td>47</td>
</tr>
<tr>
<td>Number of patients with ACB reduced on discharge</td>
<td>6</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>% with ACB reduced (of patients with ACB score ≥1 on admission)</td>
<td>35.29</td>
<td>32</td>
<td>29</td>
</tr>
<tr>
<td>Number of patients with ACB increased on discharge</td>
<td>6</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>% patients with ACB increased (from all patients included in cycle)</td>
<td>14.28</td>
<td>4.84</td>
<td>10.64</td>
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References