Impact of Point of Care CRP testing on the management of patients with suspected Community Acquired Pneumonia in the ED

Jeremy Till, Matthew Strang, David Robinson
Background & aim

• Antimicrobial resistance is “an increasingly serious threat to global public health, and “health workers should only prescribe antibiotics when they are truly needed” (WHO).

• NICE CG191 (Pneumonia in adults, December 2014) recommends the use of POC CRP testing to guide antibiotic therapy in primary care.

• Does POC CRP testing have a role in the ED?

• This project aims to evaluate the impact of POC CRP testing in ED patients with low risk Community Acquired Pneumonia (CAP).
Study design

- Before and after study
- Included adults presenting to the ED with suspected Lower Respiratory Tract Infection AND CURB-65 0-1
- Compared current practice to prescribing based on POC CRP

<table>
<thead>
<tr>
<th>CRP &lt;20 mg/L</th>
<th>Do not routinely offer antibiotic therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRP 20-100 mg/L</td>
<td>Use clinical judgement – discuss with senior doctor as above. Advise patients who are not given antibiotics to seek medical attention (GP or ED) if symptoms worsen</td>
</tr>
<tr>
<td>CRP &gt;100 mg/L</td>
<td>Offer antibiotic therapy</td>
</tr>
</tbody>
</table>
Results

• 143 patients were included (50 pre-intervention, 93 intervention phase).

• Antibiotic prescribing rates were significantly lower in the POC CRP group (20% versus 70%, p<0.0001 Fisher’s exact test).

<table>
<thead>
<tr>
<th>POC CRP result (mg/L)</th>
<th>Number of patients</th>
<th>Proportion given antibiotics (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;20</td>
<td>69</td>
<td>0</td>
</tr>
<tr>
<td>20-100</td>
<td>19</td>
<td>74</td>
</tr>
<tr>
<td>&gt;100</td>
<td>5</td>
<td>100</td>
</tr>
</tbody>
</table>
Secondary outcome measures

• No significant difference in the proportion of patients returning to the ED within 30 days requiring further treatment for LRTI (2.2% POC CRP group versus 6% pre-intervention, p=0.34).

• No patients in either group developed new radiological pneumonia within 30 days of ED presentation.

• No significant difference in duration of time from seeing the clinician to discharge, suggesting that the addition of POC CRP testing did not adversely affect patient flow through the department.
Conclusions

• The introduction of POC CRP testing in ED patients with suspected CAP led to a significant reduction in antibiotic prescribing rates.

• This is consistent with evidence from primary care and NICE guidance, and we support the wider use of POC CRP testing in this group of patients in the ED.

• The addition of POC CRP testing did not adversely affect patient flow through the ED.
Questions?