Intravenous Flucloxacillin Prescribing in Skin and Soft Tissue Infections in the Emergency Department

Tee Indawongse, Shannon Baker, Jacob O’Gorman, Shea Roffey | RBWH Emergency & Trauma Centre (ETC)

Background

- Skin and soft tissue infections (SSTIs) such as cellulitis are an extremely common Emergency Department (ED) presentation.
- An option for first-line treatment of uncomplicated SSTIs includes flucloxacillin, which shows good oral (PO) bioavailability and equal efficacy to intravenous (IV).
- Inspired by a Gold Coast University Hospital (GCUH) study, *Picking the low-hanging fruit: Why not choose oral antibiotics for skin and soft-tissue infections in the emergency department*, that suggests PO antibiotics over IV as primary therapy for most SSTIs in ED.

Method

- A retrospective audit was undertaken where Pyxis data for all IV flucloxacillin doses dispensed in ETC Short Stay Unit (SSU) over 3 months (December 2019 – February 2020) was reviewed and corresponding ETC SSU admissions interrogated using EDIS notes.
- Inclusion criteria: all patients admitted to the ETC SSU for IV flucloxacillin for treatment of SSTI (n=76).
- Criteria suggested by Hamill et al (2019) in their GCUH study was used as a framework to categorise patient indications for IV therapy for SSTIs: consideration of immunocompromise (malignancy, AIDS, prolonged steroid use), special areas (such as hands, eyes, face), or other factors (malabsorption, sepsis).

Results

**Number of Criteria Met for ETC SSU Admissions for IV Flucloxacillin for SSTIs Over 3 Months**

- NO CRITERIA: 28%
- ONE CRITERIA: 50%
- TWO CRITERIA: 18%
- THREE CRITERIA: 4%

**Doses given in grams for NO CRITERIA cohort**

<table>
<thead>
<tr>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2g</td>
<td>18g</td>
<td>16g</td>
<td>457g</td>
</tr>
</tbody>
</table>

**Length of stay in bed hours for NO CRITERIA cohort**

<table>
<thead>
<tr>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.3 hours</td>
<td>49.7 hours</td>
<td>21.3 hours</td>
<td>425.1 hours</td>
</tr>
</tbody>
</table>

Aim

- Identify potentially inappropriate use of IV antibiotics in treating SSTIs within RBWH ETC using guidelines suggested by the GCUH study.
- Find potential areas for improvement of patient care and departmental workload in relation to above.

Conclusion

- 25-30% of the ETC SSU admissions who received IV flucloxacillin could have potentially been treated with and/or discharged initially with PO antibiotics.
- Reducing unnecessary SSU admissions for IV therapy could save on departmental costs and workload, as well as decrease patient risks associated with cannulation.
- Factoring this insight, we in ETC have changed our guidelines to reflect best practice:
  - If the presentation is an uncomplicated SSTI, we aim to discharge the patients on oral antibiotics.
  - If concerns are in relation to compliance (e.g. in the setting of a vulnerable/elderly patient), we can consider admitting the patient to ETC SSU on oral antibiotics for observation.