Antimicrobial Stewardship: An ED Perspective

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AMS is the systematic effort to educate and persuade ABx prescribers to follow evidence-based prescribing, in order to stem antibiotic overuse, and thus antimicrobial resistance.
- Undifferentiated patient
- Is this infective?
- Is this sepsis?
- Is this septic shock?
- Where is the source?
- What ABx are appropriate?
- Give within golden hour!
• Diagnosis of Sepsis
  – Definitions & interpretation – Septic shock, sepsis versus bacteraemia

• Time to Antibiotic prescribing
  – BS-ABx < 1 hour of hypotension a/w survival

• Other ED pressures
• Overall Guideline adherence – 63.7% (596/935 patients)

• Initial source prediction in ED accurate 84.7% (n=792/935)
  – 66.3% of these patients received ABx as per guideline (525/792)

• Factors related with increased risk for deviation
  – SBP <90 mmHg (OR 2.17 p=0.002)
  – Inaccurate ED source (OR 2.11 p=0.002)
  – Weekend presentation (OR 1.43 p=0.03)

Shetty et al. pending publication
• Factors not shown to associate with deviation
  – Time to antibiotics (60 minute threshold)
  – Night time presentations
  – Antibiotic allergy (better adherence when allergy present)
  – ED LOS (no impact of 4 hour rule performance)
Conclusions

- > 8 out of 10 patients the ED gets the predicted source right
- 7 / 10 in this group prescribed correct ABx as per guideline
- Clinicians seem to deviate when faced with uncertainty and critically unwell patients
eMEDs Perspective

Enter name to create sequence:

Search: vancom

Type: Inpatient

vancomycin 1 g intravenous injection
vancomycin 1 g intravenous injection (750 mg, Intravenous, Vial, 12 hourly)
vancomycin 1 g intravenous injection (1 g, Intravenous, Vial, 12 hourly)
vancomycin 1 g intravenous injection (1 g, Intravenous, Vial, 24 hourly)
vancomycin 1 g intravenous injection (1 g, Intravenous, Vial, 48 hourly)
vancomycin 1 g intravenous injection (1.5 g, Intravenous, Vial, 12 hourly)
vancomycin 1 g intravenous injection (15 mg/kg, Intravenous, Vial, 12 hourly)
Decision Support

Identified Order: **vancomycin**

<table>
<thead>
<tr>
<th>Drug Reference</th>
<th>Education Leaflet</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>vancomycin</td>
<td></td>
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**Restricted (Red) Antimicrobial**
This is a restricted antimicrobial that must be logged on Guidance MS prior to use.

Click [here](#) to obtain an approval number.
OR

**Contact the Infectious Diseases Service, Antimicrobial Stewardship Service or your local Pharmacy Department as appropriate via switch**

**Policies or Procedures**
Click [here](#) for the Vancomycin Guidelines for Adult.
Click [here](#) for the IV Vancomycin Administration in Paediatrics Procedure.
### eMEDs Order Fields

**Details for vancomycin (vancomycin 1 g intravenous injection)**

<table>
<thead>
<tr>
<th>Details</th>
<th>Order Comments</th>
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</table>

- **Dose:** 1 g
- **Drug Form:** Vial
- **Duration:**
- **Approval Number:**
- **First Dose Date/Time:** 18-09-2017 15:00

**Remaining Administrations:** (Unknown)

- **Route of administration:** Intravenous
- **Frequency:** 48 hourly
- **Indication:**
- **First Dose Priority:**
- **STOP Date/Time:**
Recommendations for ED

• Develop/Educate/Implement
  – Guideline adherence
  – Broad-spectrum for limited time only:
    • Stat orders
    • Max 24 hours
  – AMS + medical teams to have diligent follow-up processes
Thank you

@NarenGunja