Polymyxin B & Colistin Dosing Tip Sheet

What: Polymyxin B is preferred over Colistin (polymyxin E) for infections due to multidrug resistant gram-negative bacilli at Stanford Health Care.

SHC formulary restriction criteria – Polymyxin B
1. Infectious Disease Consultation and ID recommendation for use
2. Cystic Fibrosis team

SHC formulary restriction criteria – Colistin
1. Treatment of urinary tract infections
2. Inhalation route

Why: Polymyxin B and Colistin have the same spectrum of activity. However, Polymyxin B has favorable clinical pharmacologic properties compared to Colistin
- Polymyxin B is an active drug, whereas Colistin is administered as the prodrug colistimethate sodium (CMS) and has variable and slow (hours) conversion to the active moiety
- Polymyxin B may be less nephrotoxic

How: Polymyxin B and Colistin dosing is NOT interchangeable
- Polymyxin B is usually dosed by “unit”, not “mg”
- Note that with Polymyxin B, each 500,000 units is diluted in 300-500mL: a typical dose may result in 1L of fluid
- Consult ID pharmacists if MIC ≥ 2 for alternative dosing strategies

<table>
<thead>
<tr>
<th>Route</th>
<th>≥80 mL/min</th>
<th>50-79 mL/min</th>
<th>30-49 mL/min</th>
<th>10-29 mL/min</th>
<th>IHD CRRT</th>
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</thead>
<tbody>
<tr>
<td>Polymyxin B</td>
<td>IV</td>
<td></td>
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<tr>
<td>Use actual body weight; adjusted body wt for obese</td>
<td></td>
<td>7,500 – 12,500 units/kg Q12H</td>
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<td></td>
<td>No Data; Consult ID pharmacist</td>
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<tr>
<td>Colistin</td>
<td>IV</td>
<td></td>
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<td></td>
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<tr>
<td>Use ideal body weight</td>
<td></td>
<td>5 mg/kg/day in 2-3 divided doses</td>
<td>1.25–1.9 mg/kg Q12H</td>
<td>2.5 mg/kg Q24H OR 1.25 mg/kg Q12h</td>
<td>1.5 mg/kg Q36H</td>
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<tr>
<td>Doses expressed in colistin base activity</td>
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</table>

Inhalation | 150 mg inhalation Q12H

Conversions:
- Colistimethate sodium 1 mg = ~12,500 units of colistimethate sodium
- Colistimethate sodium ~2.67 mg = 1 mg of colistin base activity
- 1 mg colistin base activity (CBA) = 30,000 IU colistin

1 mg polymyxin B = 10,000 IU polymyxin B
References:

Micromedex online, accessed 2/17/2016


