## VANCOMYCIN

### Presentation
Vial: 500mg

### WNHS Restrictions
**High Risk Medication List**

**Antimicrobial Restriction: ORANGE Monitored** (IV)
In urgent situations (e.g. sepsis due to proven or suspected MRSA), use can be initiated without approval but subsequent doses require approval.

### Indication
- **Severe infections** caused by susceptible organisms resistant to penicillins and cephalosporins (MRSA and S. epidermidis)
- **Serious penicillin allergy**
- **Surgical prophylaxis** (selected indications only)
  
  NB Treatment of C. difficile required ORAL Vancomycin - not discussed in this monograph

### Precautions
- **“Red man” syndrome** due to rapid infusion consisting of flushing, muscle spasm and pruritus
- **Allergy to teicoplanin**: allergic cross-reactivity between teicoplanin and vancomycin has occurred
- **Renal Impairment**: May increase risk of ototoxicity, nephrotoxicity.
- **Caution with concomitant therapy of other ototoxic drugs** e.g. aminoglycosides
- **Pre-existing hearing impairment**
- **Elderly**: have increased rate of adverse reactions
- **Surgery**: may interact with a number of anaesthetic agents; complete vancomycin infusion before induction of anaesthesia

### Dose

**Loading dose**: 25mg/kg actual body weight to max of 1.5g BD

**Maintenance dose**: 15mg/kg actual body weight BD, usual dose 1g BD, max dose 1.5g BD. Any doses beyond 1.5g are to be prescribed only at the direction of a clinical microbiologist

Round doses to closest 250mg

**Renal Impairment**: Less frequent dosing required to achieve target trough concentrations: seek specialist microbiology advice. Both dose and dose interval may need adjustment

### Administration
**Preparation**: Add 10mL Water for Injection to vial

**Intravenous Infusion**: Further dilute to 5mg/mL with glucose 5% or sodium chloride 0.9% and give as below:
<table>
<thead>
<tr>
<th>Dose</th>
<th>Volume</th>
<th>Rate Infusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>500mg</td>
<td>≥ 100mL</td>
<td>≥ 60 mins</td>
</tr>
<tr>
<td>750mg</td>
<td>≥ 100mL</td>
<td>≥ 75 mins</td>
</tr>
<tr>
<td>1g</td>
<td>≥ 250mL</td>
<td>≥ 100 mins</td>
</tr>
<tr>
<td>1.25g</td>
<td>≥ 250mL</td>
<td>≥ 125 mins</td>
</tr>
<tr>
<td>1.5g</td>
<td>≥ 250mL</td>
<td>≥ 150 mins</td>
</tr>
</tbody>
</table>

**Fluid restricted patients** may be administered using a concentration NOT exceeding 10mg/mL via a central line or PICC and at a rate NOT exceeding 10mg/minute

Complete administration prior to induction of anaesthesia if used as surgical prophylaxis

Can be given as continuous infusion – seek microbiology advice re dosing and monitoring

Administration should not exceed 10mg/minute to avoid “red man “ syndrome

| Pregnancy | 1st Trimester: Considered safe to use  
2nd Trimester: Considered safe to use  
3rd Trimester: Considered safe to use |
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Breastfeeding</td>
<td>Considered safe to use</td>
</tr>
<tr>
<td>Clinical guideline links</td>
<td>Cardiac Disease and Pregnancy</td>
</tr>
</tbody>
</table>
| Other guidelines or policy links | Standard Procedure for the Reconstitution and Administration of Intravenous Drugs  
Medication Safety: Parenteral Dilution  
WNHS Policy: Administration of parenteral drugs  
WNHS Policy: Antimicrobial Stewardship at KEMH |

**Comments**

- **Sampling time:**
  - Trough - immediately before fourth dose
  - Monitor every 3 days thereafter
  - For continuous infusions check level at 36-48h

- **Target trough concentrations:**
  - 15 -20 mg/L for 12 hourly dosing
  - 20- 25 mg/L for continuous infusion

- **Monitoring:**
  - Patients with impaired renal function may require less frequent dosing to achieve target trough concentrations
  - Contact a clinical microbiologist if levels fall outside the recommended therapeutic range for advice re dose adjustments
Possible adverse effects via IV infusion include local pain, thrombophlebitis.