## Teicoplanin Monograph- Paediatric

| Scope (Staff): | Medical, Nursing, Pharmacy |
| Scope (Area):  | Perth Children’s Hospital (PCH) |

This document should be read in conjunction with this **DISCLAIMER**

### DESCRIPTION

- Teicoplanin is a glycopeptide antibiotic, it inhibits bacterial cell wall synthesis by preventing the formation of peptidoglycan polymers.\(^1\)\(^-\)\(^4\)
- Teicoplanin is active against a wide range of Gram-positive organisms. It is mostly used in the treatment of penicillin-resistant Gram-positive organisms when vancomycin is not suitable.\(^2\)
- Teicoplanin is similar to vancomycin, but has a significantly longer duration of action, allowing once daily administration after the loading doses.

### INDICATIONS AND RESTRICTIONS

**IV: Restricted (red) antibiotic**

- ChAMP approval is required prior to prescription.
- Contact the on-call ID consultant or registrar for approval prior to prescribing.
- Document the indication, the ChAMP approver, and the date and time on the prescription or in the medication chart indication box.

### CONTRAINDICATIONS

- Hypersensitivity to teicoplanin or any component of the product.\(^4\)

### PRECAUTIONS

- Teicoplanin should be used with caution in those patients with a previous severe reaction to vancomycin as cross reactivity has occurred between vancomycin and teicoplanin.\(^1\)\(^-\)\(^3\)\(^-\)\(^5\)
- A history of ‘red-man’ syndrome with vancomycin is **not** a contraindication to the use of teicoplanin.\(^1\)\(^,\)\(^4\)
- Ototoxicity and nephrotoxicity may be more common in patients with renal failure.\(^1\)
- Life threatening or even fatal cutaneous reactions such as Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN) have been reported with the use of teicoplanin.\(^5\)
| FORMULATIONS | • Teicoplanin Sandoz®: 400mg powder for injection vial  
• Targocid® Teicoplanin: 400mg powder for injection vial (Note: Targocid brand contains a surplus of 60mg allowing the full dose to easily be withdrawn from the vial.) |
| DOSAGE | • The doses listed below fall within the standard range.  
• Higher doses may be prescribed for certain situations in consultation with Infectious Diseases or Clinical Microbiology consultants.  
**IV:**  
• **Loading:** 10mg/kg (to a maximum of 800mg) 12 hourly for 3 doses.  
• **Maintenance:** 6-10mg/kg (to a maximum of 400mg) once daily.\(^1,3,4,5\)  
**Neonates:**  
• Teicoplanin is not routinely used in neonates as vancomycin is the preferred agent.  
• If teicoplanin is required the following doses have been used:  
  • **Loading dose:** 16mg/kg as a single dose.  
  • **Maintenance dose:** 8mg/kg/day 24 hours after the loading dose.\(^1,4\) |
| DOSAGE ADJUSTMENT | • Dosage adjustment may also be required in cases of impaired renal function (with creatinine clearance of less than 60mL/min).\(^1\)  
**Dosage adjustment required in renal impairment:**  
• The normal dose should be used for the first three days then adjusted on day four (4) of treatment according to renal function.\(^2\)  
• **CrCl > 60mL/minute:** normal dosing.  
• **CrCl 40-60mL/minute:** 100% dose 48 hourly OR 50% dose 24 hourly.  
• **CrCl <40mL/minute:** 100% dose 72 hourly.\(^1,2\)  
• Monitor trough concentrations for patients with renal impairment. |
| RECONSTITUTION | Sandoz brand:  
• Reconstitute each 400mg vial with 3mL of the supplied diluent (water for injection) to produce a 400mg/3mL solution.  
• The diluent should be injected slowly down the side of the vial. Roll the vial gently between the palms until dissolved. |
- **Do not shake.** If the product foams, allow to sit for 15 minutes to allow the foam to settle.

**Targocid brand:**
- Reconstitute each 400mg vial with the supplied 3.14mL diluent (water for injection) to give a 400mg/3mL solution.
- **Do not shake** the vial, gently rotate to dissolve as the product foams significantly when shaken.\(^6\)
- **Note** – Each vial contains a small surplus to ensure the full dose can be withdrawn, therefore each vial contains 460mg.\(^5,6\)

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<tr>
<th>ADMINISTRATION</th>
<th>IV injection:</th>
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<tr>
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<td>• May be given via slow IV injection over 5 minutes.(^6)</td>
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<td>IV infusion:</td>
<td>• Dilute with compatible fluid and infuse over 30 minutes.(^1,4,6)</td>
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<th>MONITORING</th>
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<td>• In severe infections a trough level can be used to optimise treatment. Trough level should be greater than 10mg/L ((&gt;20)mg/L in patients with septic arthritis or <em>S. aureus</em> endocarditis) but less than 60mg/L.(^4)</td>
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<td>• Trough level should be taken before the morning dose where possible and sent to PathWest on weekdays. A minimum of 1mL sample is required in a Lithium Heparin (Dark Green top) 1 mL (No gel) or Serum (Red top) 1 mL (No Gel) sample container.(^7)</td>
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<td>• Renal and haematological function should be monitored weekly with prolonged therapy (i.e. longer than 7 days) but should be conducted more frequently in patients with impaired renal function or on prolonged, high doses(^1)</td>
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<td>• Consider audiometry testing for repeat or extended courses of treatment.(^1)</td>
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<th>ADVERSE EFFECTS</th>
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<td><strong>Common:</strong> Pain on injection, rash, fever, renal dysfunction, nausea, vomiting, diarrhoea, rigors and pruritis.(^1,5)</td>
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<td><strong>Rare:</strong> Ototoxicity, nephrotoxicity, infusion related events (e.g. erythema and flushing), hypersensitivity (including rash, erythema, bronchospasm, anaphylaxis), phlebitis, blood dyscrasias.(^1,8)</td>
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<th>COMPATIBLE FLUIDS</th>
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<tr>
<td></td>
<td><strong>Glucose 5%</strong>.(^6)</td>
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<td></td>
<td><strong>Sodium chloride 0.9%</strong>.(^6)</td>
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<td></td>
<td><strong>Glucose 4% with sodium chloride 0.18%</strong>.(^6)</td>
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<td></td>
<td><strong>Hartmann’s</strong>.(^5)</td>
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<th>STORAGE</th>
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<td><strong>Vial:</strong> Store below 25 °C(^6)</td>
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INTERACTIONS

- Treatment with nephrotoxic drugs, eg aminoglycosides, may increase risk of nephrotoxicity; monitor renal function and drug concentration.
- IV aminoglycoside antibiotics are inactivated by IV cephalosporins, penicillins and teicoplanin.
- Administration of these agents should be separated by at least one (1) hour.
- If this is not possible, (for example HITH patients) lines should be flushed well with sodium chloride 0.9% before and after giving each medication.\(^5\)\(^6\)

COMMENTS

- Targocid contains 24.8mg of sodium chloride per 400mg vial.\(^6\)
- Sandoz brand teicoplanin contains 24mg of sodium chloride per 400mg vial.\(^6\)

MANUFACTURER SAFETY DATA SHEET (SDS)

- To access to the Manufacturer SDS for this product, use the following link to [ChemAlert](#).

**Please note: The information contained in this guideline is to assist with the preparation and administration of teicoplanin. Any variations to the doses recommended should be clarified with the prescriber prior to administration**

Related internal policies, procedures and guidelines

- [Antimicrobial Stewardship Policy](#)
- [ChAMP Empiric Guidelines](#)

References

5. MIMS Australia Pty Ltd. MIMS [online]. St Leonards (NSW): CMPMedica Australia Pty Ltd; accessed online 16th May 2017.
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