MONOGRAPH

# Teicoplanin Monograph - Paediatric

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|---|---|
| **Scope (Staff):** | Medical, Pharmacy, Nursing |
| **Scope (Area):** | All Clinical Areas |

**Child Safe Organisation Statement of Commitment**

CAHS commits to being a child safe organisation by applying the National Principles for Child Safe Organisations. This is a commitment to a strong culture supported by robust policies and procedures to reduce the likelihood of harm to children and young people.

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


**QUICKLINKS**

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|---|---|---|---|
| Dosage/Dosage Adjustments | Administration | Compatibility | Monitoring |

## DRUG CLASS

- Glycopeptide antibiotic.[1, 2]

Teicoplanin is a High Risk Medicine.

## INDICATIONS AND RESTRICTIONS

- 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 e.g. Methicillin resistant *Staphylococcus aureus* (MRSA), methicillin resistant coagulase negative staphylococci and *Enterococcus faecium*.[2, 3]
- Teicoplanin is similar to vancomycin, but has a significantly longer duration of action, allowing once daily administration after the loading doses.[4]

**IV: Restricted (red) antibiotic**

ChAMP approval is required prior to prescription.

## CONTRAINDICATIONS

- Hypersensitivity to teicoplanin or any component of the formulation.[5, 6]

## 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.[2, 4]
- A history of vancomycin flushing syndrome is **not** a contraindication to the use of teicoplanin but care should be taken as infusion related reactions may also occur with teicoplanin.[1, 7]
- Care should be taken in patients with a history of thrombocytopaenia associated with vancomycin or teicoplanin use as it may be immune modulated.[2, 5, 7]
- Ototoxicity and nephrotoxicity may be more common in patients with renal failure, ensure dose is adjusted appropriately.[2, 5]
- Hearing impairment and/or concurrent use of ototoxic drugs may increase the risk of ototoxicity with teicoplanin.[2, 5]
- 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. Stop teicoplanin immediately if progressive skin rash, blisters or mucosal lesions occur.[2, 5, 6]
- Teicoplanin contains approximately 24 mg of sodium chloride per 400 mg vial.[7]

## FORMULATIONS

Listed below are products available at PCH, other formulations may be available, check with pharmacy if required:

- 400 mg powder for injection vial

Imprest location: Formulary One

## DOSAGE & DOSAGE ADJUSTMENTS

**Neonates (< 4 weeks):**

- Teicoplanin is not routinely used in neonates as vancomycin is the preferred agent.
- If teicoplanin is required the following doses have been used in term neonates:
- **Loading dose**: 16 mg/kg as a single dose.[2, 4, 5, 7]
- **Maintenance dose**: 8 mg/kg/day starting 24 hours after the loading dose.[2, 4, 5, 7, 8]

**Children ≥ 4 weeks:**

**IV:**

- **Loading:** 10 mg/kg/dose (to a maximum of 800 mg) 12 hourly for THREE (3) doses.[2, 7, 8]
- **Maintenance:** 6-10 mg/kg/dose (to a maximum of 400 mg) once daily. [2, 7, 8]

**Dosing in Overweight and Obese Children:** Dose based on actual body weight.[7]

**Renal impairment:**

- eGFR calculator
- The standard dose should be used for the **first three (3) days** then adjusted on day four (4) of treatment according to renal function.[3, 6, 7]
- Monitor trough concentrations for patients with renal impairment.[3, 5, 7]

| eGFR | Required dose adjustment[5, 7] |
|---|---|
| ≥ 80 mL/minute/1.73m$^2$ | Normal dosing |
| ≥ 30 to <80 mL/minute/1.73m$^2$ | 100% dose every 48 hours<br>OR<br>50% of standard dose every 24 hours |
| < 30 mL/minute/1.73m$^2$ | 100% dose every 72 hours<br>OR<br>33% of standard dose every 24 hours |

**Hepatic impairment:**

- There are no recommended dose adjustments for teicoplanin in hepatic failure. However, hepatic toxicity has been reported and monitoring of liver function recommended.[6]

## RECONSTITUTION & ADMINISTRATION

**Each vial of Targocid® contains a small excess. For doses of 400 mg only withdraw 3 mL of the reconstituted solution. Sandoz brand does NOT contain this excess.**[1, 6]

- **Targocid® brand:** Reconstitute each 400 mg vial with the supplied 3.14 mL diluent (water for injection) to give a 400 mg/3 mL solution. (A small excess is contained in each vial to allow a full 400 mg dose to be withdrawn.)[1, 6]
- **Sandoz brand:** Reconstitute each 400 mg vial with 3 mL of the supplied diluent (water for injection) to give a 400 mg/3 mL solution.[1, 6]
- The diluent should be injected slowly down the side of the vial. **Do not shake** the vial, gently rotate to dissolve as the product foams significantly when shaken. If the product foams, allow to sit for 15 minutes to allow the foam the settle before measuring the dose. [1, 6]

**IV infusion (preferred):**

- Dilute with compatible fluid and infuse over 30 minutes.[1, 2, 5]

**IV injection** (not suitable for neonates):

- May be given via slow IV injection over 5 minutes.[1, 2]

## COMPATIBILITY *(LIST IS NOT EXHAUSTIVE)*

**Compatible fluids:**

- Glucose 5%.
- Sodium chloride 0.9%.
- Glucose 4% with sodium chloride 0.18%.
- Hartmann's.[1]

**Compatible at Y-site:**

*Compatibilities of IV drugs* must be checked when two or more drugs are given concurrently.

## MONITORING

- In severe infections a trough level can be used to optimise treatment. Trough level should be greater than 15 mg/L (30-40 mg/L in patients with *S. aureus* endocarditis) [Note: levels are applicable when determined by Fluorescence Polarisation Immunoassay].[5, 7]
- Trough level should be taken immediately prior to the dose being administered and sent to PathWest on weekdays.

**Collection tube:**

- Serum, no gel (RED) or Lithium heparin, no gel (DKGNLITH)
- Minimum volume required for assay: 1 mL[9]

**Additional monitoring:**

- Renal, hepatic 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.[2, 4, 5]
- Consider audiometry testing for repeat or extended courses of treatment. Especially in patients with pre-existing renal impairment or on concurrent nephrotoxic or ototoxic agents.[2, 4, 5]

## ADVERSE EFFECTS

**Common:** Phlebitis, pain, rash, hypersensitivity, renal dysfunction, vomiting, pruritus, erythema.[2, 4, 6]

**Infrequent:** bronchospasm, diarrhoea, nausea, headache, leucopenia, nephrotoxicity (more common if used in combination with other nephrotoxic medications).[4, 5]

**Rare:** Ototoxicity (dizziness, vertigo, tinnitus), nephrotoxicity, thrombocytopaenia (may be immune mediated), infusion related events (e.g. erythema and flushing), blood dyscrasias, abscess.[2, 4, 6]

## STORAGE

**Vial:** Store below 25 °C.[1, 6]

## INTERACTIONS

This medication may interact with other medications; consult PCH approved references (e.g. Clinical Pharmacology), a clinical pharmacist or PCH Medicines Information Service on extension 63546 for more information.

***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 CAHS internal policies, procedures and guidelines

Antimicrobial Stewardship Policy

ChAMP Empiric Guidelines and Monographs

KEMH Neonatal Medication Protocols

## References

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8. Royal Australian College of General Practitioners, Pharmaceutical Society of Australia, Australasian Society of Clinical and Experimental Pharmacologists and Toxicologists. AMH: Children's Dosing Companion. Adelaide: Australian Medicines Handbook Pty Ltd; 2022.
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