



NEONATAL MEDICATION GUIDELINE

Vancomycin – Continuous Infusion

Scope (Staff): Medical, Nursing and Pharmacy Staff

Scope (Area): NICU KEMH, NICU PCH, NETS WA

This document should be read in conjunction with the [Disclaimer](#).

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Restrictions

[Formulary: Highly Restricted](#)

Requires (Neonatologist/Microbiologist/Paediatric Infectious Diseases physician) approval before commencing

[HIGH RISK Medication](#) 

Incorrect dosing with respect to age, weight and renal function may result in significant ototoxicity and nephrotoxicity. Under dosing may result in treatment failure, monitoring of drug levels is required.

Description

Antibiotic: Bactericidal glycopeptide

Presentation

Vial: 500mg

Pre-filled syringe: 40mg/8mL (5mg/mL) available at KEMH

Storage

Vial: Store at room temperature, below 25°C

Pre-filled syringe: Refrigerate at 2-8°C, do not freeze.

Indications

- Confirmed (**positive blood culture**) gram positive infections including methicillin resistant *S. aureus* (MRSA)
- Confirmed (**positive blood culture**) coagulase negative staphylococcal (CoNS) infections, *staphylococcal*, *enterococcal* and *bacillus* infections due to strains resistant to other antibiotics

Contraindications and Precautions

- Concurrent use of nephrotoxic medications (e.g. gentamicin, piperacillin/ tazobactam, furosemide, aciclovir or indometacin)
- Low urine output (less than 1mL/kg/hour)
- Pre-existing renal impairment (raised serum creatinine from age specific normal ranges)
- Haemodynamic instability

Dosage modification/reduction and earlier/frequent trough level monitoring may be required in patients with above risk factors. Consider contacting microbiology or paediatric infectious diseases physician for advice.

Dose

Infections due to susceptible organisms:

IV Continuous Infusion:

Corrected Gestational Age	Dose	Frequency
Less than 30 weeks	30mg/kg	Over 24 hours
30 - 37 weeks	45mg/kg	Over 24 hours
37 – 44 weeks	50mg/kg	Over 24 hours

Monitoring

Sampling of Levels

Vancomycin levels should be taken every 48 hours while infant is on a vancomycin infusion.

Target Plasma Levels

Continuous infusion:

Targeted treatment: **15 to 25 mg/L**

Blood levels will need repeating if a drug dose is altered or if the infant's clinical situation (i.e. renal failure) is likely to lead to unpredictable levels.

Consider more frequent monitoring if renal function declines or on other nephrotoxic medications.

Renal function (Creatinine, Urea and Electrolytes) should be monitored regularly throughout treatment.(every 3 days at minimum)

Dose Adjustment

$$\frac{\text{Target Level}}{\text{Measured Level}} \times \text{Current Daily Dose} = \text{New Daily Dose}$$

Suggested target level= 20 mg/L

The new dose must be administered over 24 hours

Preparation

Use pre-filled syringes where available to prevent any need for double-dilutions.

Doses can also be ordered from Pharmacy at PCH.

Safety Tip: Discard an appropriate volume from a pre-filled syringe to achieve the correct dose prior to administration

IV Continuous Infusion: Method for double dilution

Safety Tip: Preparation requires a double dilution- minimise distractions during the preparation of this solution

Step 1 Reconstitution:

Add 10mL of water for injections to a 500mg vial. Concentration is now 50mg/mL

Step 2 Dilution:

Withdraw 5mL of the above solution and dilute to 50mL with glucose 5% or sodium chloride 0.9%

Safety Tip: Discard the contents of the first syringe immediately after the 5mL is withdrawn

Final Concentration is 5mg/mL

Maximum concentration: Concentrations of up to 10mg/mL may be used if neonate is fluid restricted. 10mg/mL solutions must be infused through a central line.

Administration

IV Continuous Infusion

Administer the dose over 24 hours

Compatible Fluids

Glucose 5% (Preferred), Glucose 10% or Sodium Chloride 0.9%

Adverse Effects

Common: Local pain, thrombophlebitis, erythematous rash

Serious: Nephrotoxicity, auditory and vestibular deafness, tachycardia, palpitations, red man syndrome, neutropenia, eosinophilia, thrombocytopenia

The symptoms of red man syndrome are fever, chills, erythema, rash (head, neck and upper chest), hypotension

Interactions

There is an increased risk of nephrotoxicity in patients who receive combination therapy with other nephrotoxic medications such as NSAIDs (Indometacin), gentamicin or piperacillin with tazobactam.

Guidelines & Resources

[Sepsis: Neonatal](#)

[Ventriculoperitoneal \(VP\) Shunt or CSF Reservoir Insertion](#)

[Neonatal Vancomycin Monograph- Intermittent Empirical Therapy](#)

[Neonatal Vancomycin Monograph- Highly Restricted Intermittent Infusion for Blood Culture Positive Infections](#)

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