vancomycin

500mg injection

Note

This guideline provides advice of a general nature. This statewide guideline has been prepared to promote and facilitate standardisation and consistency of practice, using a multidisciplinary approach. The guideline is based on a review of published evidence and expert opinion.

Information in this statewide guideline is current at the time of publication.

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Health practitioners in the South Australian public health sector are expected to review specific details of each patient and professionally assess the applicability of the relevant guideline to that clinical situation.

If for good clinical reasons, a decision is made to depart from the guideline, the responsible clinician must document in the patient's medical record, the decision made, by whom, and detailed reasons for the departure from the guideline.

This statewide guideline does not address all the elements of clinical practice and assumes that the individual clinicians are responsible for discussing care with consumers in an environment that is culturally appropriate and which enables respectful confidential discussion. This includes:

- The use of interpreter services where necessary,
- Advising consumers of their choice and ensuring informed consent is obtained,
- Providing care within scope of practice, meeting all legislative requirements and maintaining standards of professional conduct, and
- Documenting all care in accordance with mandatory and local requirements

Checklist

Before administering a dose:

- Check if vancomycin serum level results need to be acted upon prior to the administration of the next dose;
- Check if the dose or dosing interval needs amendment as a result of the blood level results;
- Check the date and time when the next blood level is required; and
- Document the ongoing plan in the Nursing Care Plan and/or Medication Chart.

Dose and Indications

Infection due to susceptible organisms

Intravenous Infusion

Corrected Age (weeks) [Gestational Age PLUS Postnatal Age]	Dose (mg/kg)	Frequency (hours)	Timing of trough concentration measurement
< 34	25mg/kg	Every 24 hrs	Prior to third dose
34 to 44	25mg/kg	Every 12 hrs	Prior to fifth dose

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Preparation and Administration

Intravenous Infusion

There are **TWO STEPS** to this process.

STEP ONE: Add 10mL of Water for Injection to the vial (500mg) and shake gently to dissolve (total of 10mL). The resulting solution contains 50mg/mL vancomycin.

The reconstituted solution is stable for 24 hours stored under refrigeration – check with local policy about re-accessing vial for the same patient.

STEP TWO: Further dilute 2mL of the 50mg/mL vancomycin solution with 18mL of compatible fluid (total of 20mL). The resulting solution contains 5mg/mL vancomycin.

Dose	20mg	30mg	40mg	50mg	60mg	75mg
Volume	4mL	6mL	8mL	10mL	12mL	15mL

Infuse over at least 2 hours. Discard remaining solution from the second dilution.

Compatible Fluids

Glucose 5%, glucose 10%, sodium chloride 0.9%

Adverse Effects

Common

Thrombophlebitis, nephrotoxicity (more common when administered with other nephrotoxic drugs such as aminoglycosides)

Rare

"Red man" syndrome (see practice points), thrombocytopenia, neutropenia, leucopenia, ototoxicity (more common when administered for extended periods of time, in impaired renal function and when given with other ototoxic medications such as aminoglycosides).

Monitoring

- Renal function
- Full blood count periodically, particularly with prolonged therapy.
- Trough serum levels are recommended prior to the third dose in neonates less than 34 weeks gestation (corrected) or prior to fifth dose if ≥ 34 weeks gestation (corrected)
- Consider more frequent monitoring if renal function declines or on other nephrotoxic medications
- Aim for trough serum levels of 5-10mg/L
- Higher troughs may be necessary if treating MRSA pneumonia, endocarditis, meningitis or osteomyelitis. Infectious Diseases consultation is recommended in these circumstances

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Practice Points

- Vancomycin may induce nephrotoxicity and ototoxicity, although uncommon these are more often seen when given in conjunction with other nephrotoxic/ototoxic medications
- "Red man" syndrome symptoms include erythema, flushing, facial and upper torso rash, which may be followed by hypotension, angioedema and itch. The effect is largely due to histamine release after too rapid an IV infusion
- Vancomycin is very irritant to tissue and may cause necrosis if extravasated
- Because the vancomycin needs to be infused over 2 hours, it is imperative to consider the infant's nutrition requirements. You may need to consider glucose for the second dilution (STEP 2)
- Y-site compatibility has been demonstrated between vancomycin and some parental nutrition preparations, consult your pharmacist for further advice
- If necessary in fluid restricted infants infusion strength of 10mg/mL may be used if administered via a central line

Reference

1. eTG complete [Internet]. Melbourne: Therapeutic Guidelines Limited; 2011 July.

Version control and change history

PDS reference: OCE use only

Version	Date from	Date to	Amendment
1.0	November 2012	current	Original version

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