

VANCOMYCIN DOSING & MONITORING GUIDELINES

Initial Dose Note: for overweight patients use "Adjusted Body Weight" rather than actual body weight.		When to take first Vancomycin level Note: phone the lab to warn them of sample if waiting for the result to give the dose
Neonates less than 29 weeks corrected gestational age	15mg/kg every 24 hrs	Just before the 2 nd dose is due. Wait until you have the result before giving the next dose.
Neonates 29 to 35 weeks corrected gestational age	15mg/kg every 12 hrs	Just before the 3 rd dose is due. Wait until you have the result before giving the next dose.
Neonates over 35 weeks corrected gestational age	15mg/kg every 8 hrs	Just before the 4 th dose is due. Wait until you have the result before giving the next dose.
Infants over 44 weeks corrected gestational age and up to 6 months old and normal renal function	10mg/kg every 6 hrs	Just before the 4 th dose is due. DO NOT wait , go ahead and give the next dose
Children aged greater than 6 months old and no renal impairment	15mg/kg (max. 500mg) every 6hrs	Just before the 4 th dose is due. DO NOT wait , go ahead and give the next dose
Children greater than 44 weeks corrected gestational age with mild to moderate renal impairment or post-renal transplant (ensure renal team aware unless patient is on PICU)	15mg/kg (max 1g). Prescribe a single dose only	8 hours after the first dose Wait until you have the result before prescribing the next dose and then decide on regime in consultation with a pharmacist or renal consultant
Patient with severe renal impairment or haemo-filtration	15mg/kg (max 1g). Prescribe a single dose only	12-24 hours after the first dose Wait until you have the result before prescribing the next dose and then decide on regimen in consultation with a pharmacist or renal consultant (NB half-life may be extended 20 times in ESRD)
<i>Patients on intermittent dialysis</i>	<i>Consult renal team for advice</i>	

Target levels

Record target trough (pre) level range in the 'Dose instruction' on the Meditech prescription:

- 10-15mg/L = Usual target range
- 15-20mg/L = Only on Microbiology/Infectious Diseases advice for organisms with reduced sensitivity

Measure U&Es and subsequent trough levels at the times recommended overleaf.

Administration

See Injectable therapy guidelines for information on reconstitution and dilution

Infuse over at least 60 minutes

Maximum rate for administration is 10mg/min, so if more than 600mg is given, this needs to be administered over more than 60 mins (e.g. 660mg should be given over 66 minutes)

Flush the line at the same rate as the Vancomycin was administered

Sampling factors affecting levels

Contaminated sample - Finger or heel prick samples should always be used to check levels. Samples from lines may be contaminated and will need to be repeated. Do not adjust the dose based on a contaminated sample.

Flushing the line - ensure line is flushed through after completing the infusion

Hydration status - Dehydration may increase the drug concentration. Check trough levels before giving the next daily dose and involve a pharmacist if trough is high.

Trough (Pre) level	Action to take
Less than 10 mg/L	Contact a pharmacist as the dose or interval may need to be changed
10 – 15 mg/L	Recommended range - continue at the current dose
15 – 20 mg/L	Recommended range for severe infections or reduced sensitivity – continue at current dose if Microbiology/Infectious Diseases have confirmed this range If aiming for 10-15mg/l consider dose reduction before giving the next dose.
Greater than 20 mg/L	Do not give the next dose. Consider dose reduction, and wait one dose interval to recheck the level before giving any further doses.

Measure U&Es and subsequent trough levels at the times recommended below:

Frequency of monitoring: check U&E at least every time vancomycin level is checked

Neonates up to 35 weeks corrected gestational age	Before every dose until stable and then every 2 days
Neonates over 35 weeks corrected gestational age	Every 2 days
Children over 44 weeks corrected gestational age and normal renal function	Every 3 days
Children over 44 weeks corrected gestational age with renal impairment	Before every dose until regime is established

Daily monitoring is recommended in the following situations:

- Dose has been adjusted to 80mg/kg/day or more than 3g/day, whichever is greatest
- Concomitant nephrotoxic drugs (e.g. aciclovir, amphotericin, gentamicin, ibuprofen, ciclosporin, tacrolimus, furosemide, ACE inhibitors) and chemotherapy regimen containing nephrotoxic drugs e.g. cisplatin, ifosfamide, melphalan, high dose methotrexate.
- Signs of intravascular compromise, or hypoalbuminaemia even if serum creatinine is normal
- Patient has a low muscle mass
- 25% rise in serum creatinine even if creatinine level is still within normal limits (*at risk of acute kidney injury*).

Consider if patient is developing Acute Kidney Injury and contact the Renal Team if:

- 50% rise in serum creatinine even if creatinine level is still within normal limits.
- Oliguria (urine output less than 1ml/kg/hr)
- Dose adjustment has led to a disproportionate increase in vancomycin level (e.g. 20% dose increase should increase vancomycin level by 20%, but if level has increased by 50% this would not be proportional)

Discontinuation of vancomycin and alternative therapy should be considered after consultation with the Microbiology / Infectious Diseases team in the following situations:

- Acute Kidney Injury
- Not achieving therapeutic plasma levels despite dose greater than 80mg/kg/day

**DOCUMENT ALL RECOMMENDATIONS REGARDING THERAPEUTIC DRUG MONITORING ON
MEDITECH USING STANDARD DOCUMENTATION**

Vancomycin Dosing and Monitoring Guidelines

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