

PAEDIATRIC VANCOMYCIN PRESCRIPTION

Hosp:	Ward:	Patient:	Hosp No:
Cons:			
Height (cm):	Serum Cr:	Address:	Date of birth:
eGFR (see below)=	ml/min/1.73m ²		
Indication for vancomycin:			
Target trough (pre-dose) level(tick):			
10-15 mg/L <input type="checkbox"/> (usual) 15-20mg/L <input type="checkbox"/> (MRSA or MSSA Bacteraemias or deep-seated infections)			

Renal function: eGFR mL/minute/1.73 m²= k x (height in cm) / serum Cr (µmol/L)

(k = 30 in children <1 month, k = 35 in children ≥1month)

If eGFR <50ml/min/1.73m² consider reducing dose frequency, discuss with pharmacist

Determine initial dosing schedule based on age and weight:

Dose and frequency calculation	Patient weight (kg)	Dose based on 15mg/kg
<input type="checkbox"/> 8 hourly – neonate post conceptual age ≥ 35 weeks and child 1 month to 1 yearKgmg
<input type="checkbox"/> 6 hourly- child 1 year to 18 years		Dose rounded to the nearest 0.5mg Maximum daily dose = 3g (750mg QDS)

Monitoring levels:

Pre-dose levels are taken immediately prior to the next dose being given. The dose should then be given without waiting for the level to come back (unless advised otherwise) but the level should be interpreted before any further doses are given after that.

Frequency of dose	Levels to be taken at
8 hourly	4 th Dose
6 hourly	5 th Dose

If levels within range, then continue to monitor renal function and consider twice weekly levels. If levels are out of range see tables overleaf, contact pharmacy for dosing adjustment advice if needed. The first level taken may not represent steady state and the level may continue to increase. The dose should not usually be adjusted after a single low level unless the patient is clearly not on a big enough dose. Monitor for ototoxicity

Prescription

** Dose to be given over 60 minutes or doses > 500mg to given at a rate of 10mg/min**

Date	Current regime (Dose per kg and frequency e.g. 15mg/kg 6 hourly)	Pre dose level required (v)	Level	Dose	Time to be given	Infusion duration (in minutes)	Dose authorised by Doctor (signature)	Checked & supplied by pharmacist (date, time, signature)	Administered/checked by	Date/time given

Dose changes

If levels are out of range, communicate any changes in dosing or dosage intervals in the following table:

Date & time:	Action to be taken i.e. changes in dose, dosing interval:

Dose Adjustments

If aiming for level of 10-15mg/mL (usual)		
Level (mg/mL)	Action	When to do next level
<8	Increase the frequency to add an extra dose in each 24 period (e.g. change from 12-hourly to 8-hourly). If already on 6-hourly dosing, increase dose by 20% but do not increase frequency.	After 24 hours
8-10	Increase dose by 10 - 20%	After 24 hours
10-15	No change needed	In 3-4 days, assuming renal function remains stable
15-18	Reduce dose by 10%	After 24 hours
18-22	Increase the dosing interval to give one fewer dose in each 24-hour period e.g. reduce from 8-hourly to 12-hourly.	After 24 hours
>22	Check renal function and wait for trough to fall into range before giving any further doses. Once level is back in range, recommence dosing with an increased interval (e.g. change from 8-hourly to 12-hourly). Re-check level after 24 hours of treatment at new dose.	

If aiming for level of 15-20mg/mL (MRSA or MSSA Bacteraemias or deep-seated infections)		
Level (mg/mL)	Action	When to do next level
<10	Increase the frequency to add an extra dose in each 24 period (e.g. change from 12-hourly to 8-hourly). If already on 6-hourly dosing, increase dose by 20% but do not increase frequency.	After 24 hours
10-15	Increase dose by 10-20%	After 24 hours
15-20	No change needed	In 3-4 days, assuming renal function remains stable
20-22	Reduce dose by 10%	After 24 hours
>22	Check renal function and wait for trough to fall into range before giving any further doses. Once level is back in range, recommence dosing with an increased interval (e.g. change from 8-hourly to 12-hourly). Re-check level after 24 hours of treatment at new dose.	

References:

Eiland, L.S., English, T.M. and Eiland, E.H. (2011) *Assessment of Vancomycin Dosing and Subsequent Serum Concentrations in Pediatric Patients*. The Annals of Pharmacotherapy. 45: 582-9.

Frymoyer, A. et al. (2011) *Impact of a hospital wide increase in empiric pediatric vancomycin dosing on initial trough concentrations*. Pharmacotherapy. 31(9):871-6.

Paediatric Formulary Committee. *BNF for Children* [2015]. London: BMJ Group, Pharmaceutical Press, and RCPCH Publications; [2023] Nottingham Children's Hospital. (2014) *Guideline: Intravenous Vancomycin*. Nottingham University Hospitals NHS Trust: [2023]

Vancomycin 500mg powder for concentrate for solution for infusion vials - Summary of Product Characteristics (SmPC) - (emc) (medicines.org.uk)

Development of Guidelines:	Kayleigh Lehal, Shahnaz Nasmin, Lisa Taylor
Consultation With:	Consultant Paediatricians Dr Bowker 2/3/17 Antimicrobial Pharmacist
Version:	V3
Changes from previous version:	<p>Neonatal dosing removed and put on to a separate chart</p> <p>Change in dosing frequency for 1 year – 18 years. Literature has shown that 8 hourly dosing rarely reaches trough levels between 10-15mg/L. New recommended doses are 15mg/kg QDS.</p> <p>New maximum daily dose for children weighing more than 50kg.</p> <p>Addition of new target range for MRSA/MSSA/Deep seated infections (15-20mg/L).</p> <p>Improved layout for documenting levels and prescribing doses, with inclusion of pharmacist signature for each dose. Advice for dose adjustments added.</p> <p>2024 changes Updated k values for use in the eGFR equation, in line with the BNFC Percentage adjustments in table changed as per Microbiology pharmacist recommendation.</p>
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Key Contact:	Paediatric Pharmacists