VANCOMYCIN IV INTERMITTENT DOSING IN ADULTS

Doncaster and Bassetlaw Hospitals NHS Foundation Trust

Uses:	On Microbiology advice for Gram-positive aerobic and anaerobic infections including MRSA
Exclusions:	Dialysis patients, children under 16 years, CrCl < 10ml/min, patients allergic to vancomycin or other glycopeptides

Step one: Loading Dose

- Weigh patient.
- Select loading dose as per table below.
- If patient cannot be weighed, use IBW.
- If patient looks underweight, estimate weight (do not use IBW).
- Prescribe in stat section of chart.
- Loading is independent of renal function.
- Send urgent U&E (if not possible, can use a creatinine level not more than 24 hours old).
- Refer patient to pharmacy.

LOADING DOSE	Actual Body Weight (kg)	Dose	Volume of sodium chloride 0.9% or glucose 5%	Duration of infusion
	< 60	1000mg	250ml	120 mins
	60 – 90	1500mg	500ml	180 mins
	> 90	2000mg	500ml	210 mins

Step two: Maintenance Dose

- Calculate renal function using creatinine clearance (DO NOT USE eGFR).

$$\text{Female} = \frac{1.04 \times (140 - \text{age}) \times \text{weight}^* \text{ (kg)}}{\text{SrCr } (\mu\text{mol/L})} \qquad \text{Male} = \frac{1.23 \times (140 - \text{age}) \times \text{weight}^* \text{ (kg)}}{\text{SrCr } (\mu\text{mol/L})}$$

- *Use IBW (see below).
- If patient is underweight, use actual body weight.
- If patient unfit to be weighed, estimate body weight.

Female IBW (kg) = height (cm) – 105 Male IBW (kg) = height (cm) – 100

Give first maintenance dose 12, 24 or 48 hours after start of loading dose according to dose interval in table below

MAINTENANCE DOSE	CrCl (ml/min)	Dose	Volume of sodium chloride 0.9% or glucose 5%	Duration of infusion	Dose Interval (time since loading dose and time between maintenance doses)	Timing of levels
	<10	Policy not appropriate – seek microbiologist advice				
	10-19	500mg	100ml	60 mins	48 hours	Trough level immediately before 1st and 2nd maintenance doses
	20-29	500mg	100ml	60 mins	24 hours	
	30-39	750mg	250ml	90 mins	24 hours	
	40-54	500mg	100ml	60 mins	12 hours	Trough level immediately before 3rd or 4th maintenance dose – whichever falls before morning dose
	55-74	750mg	250ml	90 mins	12 hours	
	75-89	1000mg	250ml	120 mins	12 hours	
	90-110	1250mg	250ml	150 mins	12 hours	
	>110	1500mg	500ml	180 mins	12 hours	

Step three: Monitoring

Target Trough Level 10 – 15mg/L (may be upto 20mg/L in certain infections – as guided by microbiology)

- See maintenance dose table for timing of levels.
- Dose and sample time must be recorded accurately, document on the drug card:
  - Time each infusion started.
  - Time sample taken.
- Monitor creatinine daily.
- DO NOT WAIT FOR RESULT BEFORE GIVING THE DOSE unless patient has severe renal impairment or poor urine output (<0.5ml/kg/hr).
- Record on blood sample request form:
  - Dose of vancomycin.
  - Date and start time of infusion last administered to patient.
  - Dosing regimen.

Step four: Adjustment of doses

- Always check dosage history and sampling times are appropriate before interpreting the result.
- Contact microbiology or pharmacy if assistance is required.
- If renal function impaired but stable, check trough concentration on alternate days.
- If renal function changing rapidly (deteriorating OR improving), check levels daily to prevent over or under dosing.
- If dose has to be changed, take further levels before appropriate dose (see maintenance dose table).

DOSE ADJUSTMENTS	Vancomycin Level	Suggested dose changes
	<10mg/L	Increase dose by 50%. Round dose to nearest 250mg. If this increase will exceed 1500mg BD, seek immediate advice from microbiology.
	10 – 15mg/L	Maintain present dose. Check renal function daily, if stable re-check trough concentrations twice weekly
	>15mg/L	Stop until level <15mg/L. Seek Microbiology advice. Check levels daily unless otherwise advised.

For further advice, contact your ward pharmacist, the antimicrobial pharmacist (bleep 1184), medicines information (ext 3317) or Consultant Microbiologist (DRI – ext 6517 or BDGH ext 2490. Out of hours via switchboard.)