

Intravenous Vancomycin Use in Adults - Intermittent Infusion

Vancomycin is a glycopeptide antibiotic and has bactericidal activity against gram positive organisms. It should routinely be administered intravenously as it is not absorbed from the gut.

- Indications:**
- Serious proven or suspected MRSA or coagulase negative staphylococcal infections
 - Infections due to other resistant gram positive organisms
 - Native (with severe sepsis or where MRSA suspected) or prosthetic valve endocarditis [See Guidance](#)
 - Other infections – after consultation with ID Physician or Microbiologist

Does your patient have?

- Severe Burns, Ascites, Receive Dialysis, Pregnant Seek advice from pharmacist or specialist area

- PREFERRED METHOD:** Loading Dose and maintenance dose can be calculated using online [Vancomycin Calculator](#) (available on NHST antibiotic website or Right Decision Service App – NHS Tayside toolkit)

ALTERNATIVE METHOD: Estimate CREATININE CLEARANCE (ml/min) (a)

$$\frac{(140 - \text{age (years)}) \times \text{weight (Kg)}}{\text{Creatinine (micromol/L)}} \times \begin{matrix} 1.23 \text{ (males)} \\ 1.04 \text{ (females)} \end{matrix}$$

→ If Cr <60 micromol/L use 60 in calculation

→ Use actual body weight or max body weight whichever is lower. [See table](#)

- Determine **LOADING DOSE** and **MAINTENANCE DOSE** from table below (b/c)

Creat Cl (ml/min)	Actual body weight < 60 kg**			Actual body weight 60 – 90 kg			Actual body weight > 90 kg		
	Loading Dose (once off)	Start maintenance dose after	Maintenance Dose	Loading Dose	Start maintenance dose after	Maintenance Dose	Loading dose	Start maintenance dose after	Maintenance dose
<20	1g	48 hours	500mg every 48 hours	1.5g	48 hours	500mg every 48 hours	2g	48 hours	500mg every 48 hours
20-29	1g	24 hours	500mg daily	1.5g	24 hours	500mg daily	2g	24 hours	500mg daily
30-39	1g	24 hours	750mg daily	1.5g	24 hours	750mg daily	2g	24 hours	750mg daily
40-54	1g	12 hours	500mg twice daily	1.5g	12 hours	500mg twice daily	2g	12 hours	500mg twice daily
55-74	1g	12 hours	750mg twice daily	1.5g	12 hours	750mg twice daily	2g	12 hours	750mg twice daily
75-89	1g	12 hours	1g twice daily	1.5g	12 hours	1g twice daily	2g	12 hours	1g twice daily
90-110	1.25g	12 hours	1.25g twice daily	1.5g	12 hours	1.25g twice daily	2g	12 hours	1.25g twice daily
>110	1.5g	12 hours	1.5 g twice daily*	1.5g	12 hours	1.5 g twice daily*	2g	12 hours	1.5 g twice daily*

*or 1g three times daily to achieve higher trough concentrations then follow <60kg column for maintenance dose

**for patients <40kg use 750mg once off loading dose

3. Administration:

Dilution: Doses up to 1.25g in 250ml 0.9% sodium chloride. Doses above 1.25g up to 2g in 500ml 0.9% sodium chloride. Glucose 5% may be used in patients with sodium restriction. **Infusion Rate: Do not infuse faster than 500mg over 60 minutes (to avoid risk of vancomycin infusion reaction, pain or muscle spasm)**

4. Monitoring:

Always state exact time of sample in relation to dose on request. Check renal function daily. If renal function is stable, give the next dose before the trough result is available. If renal function is deteriorating, withhold until the result is available. If co-prescribed with gentamicin monitor for ototoxicity

Trough levels (at end of dosage interval just prior to next dose: first measured within 48 hours then every 2-3 days or more frequently if renal function is unstable.

Target concentrations: Standard 10-20mg/l

Seriously ill (severe or deep seated infections) 15-20mg/l (e.g. bacteraemia, endocarditis, osteomyelitis, meningitis, and hospital acquired pneumonia)

5. Delayed Doses:

For additional information on managing missed or delayed doses see [SAPG recommendations](#)

6. Adjusting Dosage:

Vancomycin concentration	Suggested dose change
<10mg/L	Increase dose by 50% and consider reducing dosage interval or seek advice
10-15mg/L	If patient is responding maintain present dosage regimen.
15-20mg/L	Maintain present dosage regimen
>20mg/L	Seek advice

If in doubt, take another sample before modifying the dosage regimen and/or contact pharmacy for advice