FINAL

# VANCOMYCIN Continuous infusion

**ACTION and USES**
Vancomycin is used to treat Gram positive multi resistant bacterial infections such as staphylococcal infections including Coagulase negative Staph(CoNS).

**DOSAGE/ADMINISTRATION**
**Not previously on vancomycin**

Loading dose: 15mg/kg over 1 hour followed immediately by the continuous infusion
This should be calculated using serum creatinine:

| Creatinine (micromol/L) | Corrected Gestational Age | Dose over 24 hrs |
|---|---|---|
| < 40 | ≥40 weeks | 50 mg/kg/day |
| <40 | <40 | 40mg/kg/day |
| 40 - 60 | all | 30 mg/kg/day |
| > 60 | all | 20 mg/kg/day |

**Baby was previously on intermittent vancomycin infusion**

If trough level has been within therapeutic range of 10-15mg/L calculate the total daily dose and ADJUST DOSAGE to ensure this continuous infusion will achieve a random trough level of 15-25mg/L (consult with consultant or clinical pharmacist for advice if required). Start continuous infusion within 4-6 hours of the last dose.

- If more than 6 hours has elapsed since previous dose the use above table to calculate dosage.

**THERAPEUTIC DRUG MONITORING**
**Frequency of drug level:**
**Check vancomycin level approximately 12 hours after commencing continuous infusion and then about the same time daily thereafter**.

**DOSE ADJUSTMENT** BASED ON LEVELS to achieve therapeutic range of **15-25mg/L (Different from intermittent)**

| Suggested dose alteration | Vancomycin Concentration |
|---|---|
| < 10 mg/L | Increase the daily dose by 50 %. Note: if trough is < 8mg/L then may need to increase by more than 50%, discuss with consultant or clinical pharmacist if required. |
| 10 to <15 mg/L | Increase the daily dose by 25 % |
| 15 to 25mg/L | No change |
| >25 to 30 mg/L | Decrease the daily dose by 25% |
| >30 mg/L | Stop until level <20 mg/L then discuss with consultant or clinical pharmacist about dose reduction if required. |

**Plasma Drug Sample: DO NOT take sample from the administration site.**
0.2mL in an orange topped capillary sample tube. A plain specimen tube (clotted sample) is also acceptable but the volume will need to be larger (0.5mL) as these are flat-bottomed tubes. Send

to Clinical Biochemistry Department (document time of sampling and that it is a continuous infusion level).

**ADMINSTRATION**

Continuous infusion

Rate(ml/hr) for a 5mg/ml solution = $\frac{\text{dose/kg/day(mg) x wt (kg)}}{120}$

**RECONSTITUTION**

Vancomycin injection is available in 500mg and 1g dry powder vials. Reconstitution is necessary.
**Note: There can be supply problems and many brands can be supplied with different displacement values. To avoid missed doses and delayed antibiotic administration, it has been agreed to have an average displacement value irrespective of the brand. PLEASE CHECK VIAL SIZE.**

**Vancomycin solution 50mg/mL**

Irrespective of brand, add 9.8mL of water for injection to a **500mg** vial or 19.6mL of water for injection to a **1g** vial and shake well to mix.
**This solution MUST be diluted further to 5mg/mL (see below).**

**Vancomycin solution 5mg/mL**

Add 1mL of 50mg/mL vancomycin solution to 9mL of sodium chloride 0.9% injection and shake well to mix.

**Other compatible diluents**

Glucose 5%, glucose 10%.

**INCOMPATIBILITIES**

Do not mix with any other drugs without checking with clinical pharmacist.

**STORAGE**

Use reconstituted intravenous solutions immediately, do not store. Syringes supplied by pharmacy are stable for 24 hours in the refrigerator. Unopened vials are stored in the IV drug cupboard.

**MONITORING**

'Red Man Syndrome' with flushing to the upper body and neck can occur if infusion is too rapid. Ototoxicity is possible but rarely seen if serum levels are kept below 30mg/L. Nephrotoxicity can occur and is more likely with pre-existing kidney dysfunction or with concomitant use of an aminoglycoside e.g. gentamicin. Observe site for extravasation and phlebitis. Neutropenia is reported after prolonged use (greater than 3 weeks). Consider potential changes in fluid balance when adjusting dose.