**VANCOMYCIN**

**INDICATION**

Infections due to gram-positive bacteria including septicaemia

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| **DRUG** | **POSTCONCEPTIONAL AGE** | **DOSE** | **DOSES/DAY** | **ROUTE** |
| Vancomycin | 28 weeks or less  | 15mg/kg | Every 24 hours | IV infusion over 60 minutes |
| 29 to 35 weeks | 15mg/kg | Every 12 hours |
| 36 weeks+ | 15mg/kg | Every 8 hours |

**Postconceptional age** (= gestational + postnatal age)

**SUPPLY**

Vancomycin 500mg vial containing powder for reconstitution

**PREPARATION**

Add 9.7ml (Hospira and Wockhardt brands) of water for injections to 500mg vial resulting in a 50mg/ml concentration. For other brands, refer to local displacement value table, or Injectable Medicines Guide <https://medusa.wales.nhs.uk/Home.asp>

The Injectable Medicines Guide is also available under the Clinical Applications tab on the NHS Highland intranet.

Take 1ml of the 50mg/ml solution and dilute to 10ml with sodium chloride 0.9% or glucose 5% resulting in a final concentration of 5mg/ml.

**MONITORING**

Monitor renal function.

**Therapeutic Drug Monitoring:**

Trough levels (pre-dose) should be done 24 hours after starting vancomycin and after changing dose ie:

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| Frequency of dose | Trough levels pre- |
| 24 hourly | 2nd dose |
| 12 hourly | 3rd dose |
| 8 hourly | 4th dose |

Trough level should be 10 to 20mg/L. Peak levels are not normally required. If no change in dosage regimen or renal function, repeat trough levels every 4 days.

If trough is less than 10mg/L, the dosage interval could be shortened e.g. from 12 hourly to 8 hourly OR the dose could be increased proportionately to achieve therapeutic levels eg if the trough needs to increase by 25% to be in the therapeutic range, increase the dose by 25%. Repeat the trough level 24 hours after changing the dose.

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| **Trough level**  | **Increase in dose** |
| 5mg/L | 100% |
| 6mg/L | 70% |
| 7mg/L | 50% |
| 8mg/L | 25% |
| 9mg/L | 10% |

**VANCOMYCIN (cont)**

If trough is greater than 20mg/L, then withold the next dose and recheck the level 24 hrs later for gestational age 28 weeks or less, 12 hours later for gestational age 29 to 35 weeks, and 8 hours later for gestational age 36 weeks +. Consider increasing dosing interval eg from 8 hours to 12 hours. , If the trough level is greater than 25mg/L, recheck the trough when the next dose is due i.e. 8, 12 or 24 hours. Seek advice on dose from Pharmacy if required.

If renal function is impaired, e.g. a change in creatinine of more than 15 to 20%, the check the trough level and know the result before the next dose is administered.

**If the measured concentration is unexpectedly HIGH or LOW, consider the following:**

* Were the dose and sample times recorded accurately?
* Was the correct dose administered?
* Was the sample taken from the line used to administer the drug?
* Was the sample taken during drug administration?
* Has renal function declined or improved?
* Does the patient have oedema or ascites?

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

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| IV line compatibility | Aciclovir (in glucose 5%), adrenaline, amiodarone (in glucose 5%), anidulafungin (in glucose 5%), atracurium, caffeine citrate, calcium gluconate, cisatracurium, clarithromycin (in glucose 5%), dexmedetomidine, dobutamine, dopamine, esmolol, fentanyl (in glucose 5%), fluconazole, gentamicin, glyceryl trinitrate, insulin (soluble), labetalol, levofloxacin (in glucose 5%), magnesium sulphate (in glucose 5%), meropenem, metronidazole, midazolam (in glucose 5%), milrinone, morphine sulphate (in glucose 5%), naloxone, noradrenaline, potassium chloride, ranitidine (in glucose 5%), remifentanil, rifampicin, sodium bicarbonate, sodium nitroprusside, tigecycline in sodium chloride 0.9%), vecuronium.  |
| Solution compatibility | Sodium chloride 0.45%, sodium chloride 0.9%, glucose 5%, glucose 5% in sodium chloride 0.9%, glucose 10%, compound sodium lactate, (Hartmann's solution), TPN, lipid. |
| IV line incompatibility | Albumin, amphoteracin, ampicillin, benzylpenicillin, cefotaxime, ceftazidime, ceftriaxone, cefuroxime, chloramphenicol, dexamethasone, furosemide, foscarnet, heparin, omeprazole, pantoprazole, phenobarbital, phenytoin, piperacillin/tazobactam.  |