Gloucestershire Hospitals NHS
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CRITICAL CARE CONTINUOUS VANCOMYCIN INFUSION PROTOCOL

Authors – Dr Rob Orme (Consultant anaesthetist) and Dr Alan Lees (Consultant microbiologist) [uploaded Nov 2012]

LOADING DOSE

based on the patient's actual body weight

Patient weighing <70kg give 1g ***Patient weighing >70kg give 1.25g***

Mix in 250ml 5% glucose, give IV over 2 hours

If the patient has recently received vancomycin - send levels prior to commencing

Serum level
< 10mg/L - load as above
10-15mg/L - load 500mg in 100ml 5% glucose infuse over 1 hour.
15-25mg/L - **DO NOT LOAD** but go to continuous infusion

CONTINUOUS INFUSION

to commence immediately after loading dose

Mix 1g vancomycin in 250ml 5% glucose

	Creatinine (µmol/L)	**Starting infusion rate (**ml/hr)
Normal renal function	<120	16
Impaired renal function	>120	10
CVVH		10

MEASUREMENT OF VANCOMYCIN LEVELS

An initial level should be taken after at least 18 hours of treatment at the time specified in the following table which outlines the minimum twice weekly testing schedule. Send 5ml of blood taken into a narrow gold top gel tube to Chemical Pathology using a Chemical Pathology request form.

First dose	1st level	2nd level	3rd level	4th level
Sun 1201 – Mon 1200	Tues 0600	Fri 0600	Mon 0600	Thur 0600
Mon 1201 - Tues 1200	Wed 0600	Fri 0600	Mon 0600	Thur 0600
Tues 1201 – Wed 1200	Thur 0600	Mon 0600	Thur 0600	Mon 0600
Wed 1201 – Thur 1200	Fri 0600	Mon 0600	Thur 0600	Mon 0600
Thur 1201 – Fri 1200	**Sat 0600**	Mon 0600	Thur 0600	Mon 0600
Fri 1201 – Sat 1200	**Sun 0600**	Tues 0600	Thur 0600	Mon 0600
Sat 1201 – Sun 1200	Mon 0600	Thur 0600	Mon 0600	Thur 0600

DOSE ADJUSTMENT

take levels at 6am each morning

Vancomycin level (mg/L)	**Infusion Rate Adjustment**
<15	*Increase* infusion rate to next level on table
15-25	**Target level*** = No change
26-30	*Decrease* infusion rate to next level on table
>30	STOP infusion for 6 hours, then restart at next level down on table

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ADJUSTMENT TABLE

Infusion Rate (ml/hr)	Infused dose (mg/h)	Equivalent Intermittent dose (mg)
3	12	250mg od
5	20	500mg od
10	40	500mg bd
16	64	750mg bd
21	84	1000mg bd
26	104	1250mg bd

Whenever possible use a separate CVC lumen or peripheral cannula for the vancomycin infusion – for compatibilities see below

Continuous infusions of vancomycin are only to be used in Critical Care.
If a patient is transferred to a ward while still on vancomycin, change to an intermittent dosing regimen based on their dose in the last 24 hours. Wait for 12 hours after stopping the continuous infusion before starting twice daily dosing.

COMPATIBILITIES

Vancomycin 1g and 1.25g is stable in 250ml (i.e. up to 5mg/ml) of sodium chloride 0.9% or glucose 5% for 24 hours.

Below is a list of drugs known (from laboratory data) to be compatible with vancomycin in specified diluents and concentrations.

Drug	Diluent	Conc. up to:-	Vancomycin diluent
Amiodarone	Glucose 5%	4mg/ml	Glucose 5%
Clarithromycin	Glucose 5%	4mg/ml	Glucose 5%
Fluconazole	-	2mg/ml	Unknown
Linezolid	-	2mg/ml	Glucose 5%
Magnesium sulphate	Glucose 5%	100mg/m = 0.4mmol/ml	Glucose 5%
Midazolam	-	5mg/ml	Unknown
Morphine	Glucose 5%	1mg/ml	Glucose 5%
Pantoprazole	-	4mg/ml	Unknown
Remifentanil	NaCl 0.9%	250microgram/ml	Glucose 5%

Vancomycin solution has a low pH that may cause chemical or physical instability when it is mixed with other compounds. Mixing with alkaline solutions should be avoided.

The following drugs have been reported to be incompatible with vancomycin:-

- Amoxicillin
- Barbiturates
- Ceftazidime
- Ceftriaxone
- Dexamethasone
- Furosemide
- Human albumin
- Phenytoin
- Amphotericin
- Benzylpenicillin
- Cefotaxime
- Cefuroxime
- Foscarnet
- Heparin
- Omeprazole
- Piperacilllin / tazobactam (Tazocin)