

## Guidelines for the use of Vancomycin / Teicoplanin

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### Introduction

The glycopeptide antibiotics Vancomycin and Teicoplanin are indicated primarily for the treatment of resistant Gram positive infections such as coagulase negative staphylococci and MRSA.

Vancomycin is first choice agent except in clinical areas with agreed protocols for the use of Teicoplanin. These two agents should **only** be used on the advice of microbiology or infectious diseases physician, except in areas with agreed protocols. Inappropriate use of these agents can lead to the spread of GRE (glycopeptide resistant enterococcus), VISA (vancomycin intermediate staphylococcus aureus) and VRSA (vancomycin resistant staphylococcus aureus), organisms which are resistant to virtually all antibiotics.

### VANCOMYCIN

<b>Dosing and Administration</b>			
Usual adult dose	GFR <sup>1</sup> >50ml/min calculated using the Cockroft and Gault formula <sup>1</sup> (see below)	1g every 12 hours	1g in 250mls NaCl 0.9% given IV over at least* 100 minutes
	GFR <sup>1</sup> <50ml/min calculated using the Cockroft and Gault formula <sup>1</sup> (see below)	1g stat dose	
*Vancomycin <b>must not</b> be given by bolus injection or any quicker than stated above. This may result in the patient suffering from exaggerated hypotension, including shock, and, rarely cardiac arrest. Stopping the infusion usually results in a prompt cessation of these reactions.			
<b>Monitoring</b>			
<b>General Considerations</b>	An on call assay service is only available by prior arrangement and in exceptional circumstances. Levels may be measured during normal working hours without prior arrangement, <b>except at Freeman Hospital</b> where all assays must be arranged in advance by discussion with a microbiologist.		
<b>Target levels</b>	Pre dose Taken immediately before next dose 10-15mg/L <sup>2</sup>  <sup>2</sup> For serious/deep seated infections trough levels above 15mg/L may be preferred. Please discuss with microbiology.		
<b>GFR&gt;50ml/min</b>	Take a pre dose level after 3 <sup>rd</sup> or 4 <sup>th</sup> dose.		
<b>GFR&lt;50ml/min</b>	Monitor pre dose levels at agreed intervals (following discussion with microbiology) until the desired trough level is reached and then give the next 1g stat dose.		

## CAUTIONS

Vancomycin should be used with caution in patients receiving concomitant nephrotoxic drugs e.g. Gentamicin, Tobramycin, Amikacin, Ciclosporin, Tacrolimus and Amphotericin preparations e.g. Ambisome.

Rapid infusion: see administration.

## TEICOPLANIN

### Dosing and Administration

<b>Usual adult dose</b>	GFR>60ml/min	400mg 12hrly for 3 doses then 400mg daily	May be given IV as bolus injection or infusion over 30 mins
	GFR 40-60ml/min	As above, on day 4 reduce dose to 400mg alternate days, or 200mg daily	
	GRF <40ml/min	As above, on day 4 reduce dose to 400mg every three days	
<b>General Considerations</b>	Loading dose must be given (including patients with renal impairment)		
	Doses may need to be increased in severe infections as recommended by microbiology or infectious diseases		

### Monitoring

The pharmacokinetics of Teicoplanin are difficult to predict and there may be considerable interpatient variability. Therefore in the treatment of serious infections, Teicoplanin assays may be performed. Please contact microbiology for advice.

### <sup>1</sup>Cockcroft and Gault formula

$$\text{CrCL(ml/min)} = \frac{(140 - \text{Age(yrs)}) \times \text{Weight}^* (\text{kg}) \times (0.85 \text{ women})}{\text{Serum Creatinine (micromol/L)} \times 0.81}$$

\*Use Ideal body weight (IBW) in significantly obese patients e.g. BMI >30

IBW for males (kg) = 50 + (0.9 x cm over 152.4 cm )

IBW for females (Kg) = 45 + (0.9 x cm over 152.4 cm)

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