1. Vancomycin levels and doses

A doctor phones you for advice about a patient with infective endocarditis. The patient has been on intravenous vancomycin 1g bd for 48 hours but their level has come back as 45mg/L. Should he omit any doses?

Suggested questions to ask include:

(a) What is the patient's renal function?
Gather data on creatinine levels, age, weight and sex to calculate creatinine clearance. (You should also ask if the patient is undergoing any form of renal replacement therapy.)
(b) When was the last vancomycin infusion completed?
(c) When was the level taken?
You need these data to understand how near to peak or trough levels this value is.
(d) Is the patient taking any other drugs?
Check for interactions.

Suggested Sources:

- In-house vancomycin or TDM guidelines if you have them, SPC.

2. Ciclosporin in nil-by-mouth patient

A senior nurse bleeps you to ask how to manage a renal transplant patient on her ward who has been stabilised on ciclosporin for three years. She is unfamiliar with this type of patient, and he will be nil-by-mouth from tomorrow morning in preparation for a procedure.

Suggested questions to ask include:

(a) What dose and formulation of oral ciclosporin is being used?
Information needed to convert to an equivalent dose as accurately as possible.
(b) How long is the patient likely to be nil-by-mouth?
A prolonged period makes monitoring of blood levels and subsequent dose adjustments more likely.
(c) Is there other oral medication which needs to be converted to a parenteral alternative?
Most transplant patients take a variety of medicines and it is important not to overlook these other drugs. The omission of any of the immunosuppression drugs could trigger rejection. If there are a variety of IV drugs required this may require multiple ports of IV access and may also require you to look at which ones can be given in the same IV lines. It may also be worth reminding the nurse that ciclosporin interacts with many drugs and that if any new ones are initiated as a result of the operation these could affect ciclosporin levels.

Suggested Sources:

- SPC, BNF, The Handbook of Peri-Operative Medicines (UKCPA), local guidelines, local experts

3. Timing of digoxin sampling

A junior doctor phones you to ask when to take digoxin levels.

Suggested questions to ask include:

(a) Do you have a specific patient in mind?
(b) If so, why are levels required?
For suspected toxicity or non-compliance an immediate sample is required. To determine if a recent loading dose has provided sufficient plasma levels or to test the effects of a drug interaction or dose adjustment, time is required for the digoxin to reach steady-state.
(c) When was digoxin started?
Has there been time to acquire steady-state levels?
(d) How is the digoxin being given?
Intravenous or oral?
(e) What is the patient's renal function?
Renal dysfunction may explain toxicity or a high level, but will also delay the patient reaching steady-state if the drug has just been initiated or if levels have changed because of a dose adjustment or interaction.

Suggested Sources:

- Local TDM guidelines, SPC, BNF.