1. High lithium levels

A surgical ward doctor phones you for advice about how to manage a patient taking lithium for bipolar disorder. They have had a plasma level taken recently and it has been reported back as high.

Suggested questions to ask include:

(a) What is the plasma level including the units?
(b) When was the level taken?
To aid with interpretation.
(c) What is the dose, frequency and formulation of lithium? Has the dose changed recently?
(d) How long has the patient been taking lithium?
To check that enough time has passed after starting lithium before taking a level.
(e) Does the patient have any symptoms of lithium toxicity?
(f) What is the patient's renal function and is it stable?
Gather data on creatinine levels, age, weight and sex to calculate creatinine clearance.
(g) Is the patient taking any other drugs and when were they started?
To check for potential interactions that may have resulted in the increased lithium plasma level.

Suggested sources:

- Some, but not all SmPCs, have guidance on dose adjustment for narrow therapeutic range drugs such as lithium.
- Find out if your hospital or your local mental health trust has guidance on the matter such as a therapeutic drug monitoring guide.
- Consider signposting to the patient's specialist mental health team.

2. Managing immunosuppressants in a patient having surgery

A doctor asks you how to manage a patient on your ward who is stabilised on ciclosporin after a renal transplant several years ago. The patient will be fasting from tomorrow morning in preparation for a surgical 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) What type of surgery is the patient having?
If the patient is having surgery on the gastrointestinal tract, then potentially the absorption of ciclosporin may be altered after the procedure.

(d) What intravenous access does the patient have?
If you establish that the patient requires a switch to intravenous ciclosporin, you'll need to ensure they have the correct access (i.e. central or peripheral).
(e) Is there other oral medication which needs to be converted to a parenteral alternative?
Patients take a variety of medicines after a transplant and it is important not to overlook these other drugs. If multiple intravenous drugs are required, you'll need to ensure the patient has enough access and/or think about injection compatibility. It may also be worth reminding the doctor that ciclosporin has the potential to interact with other medicines in case anything new is started perioperatively.

Suggested sources:

- The BNF, SmPC and Medusa Injectable Medicines Guide may help with the dose conversion between oral and intravenous ciclosporin, and administration of the drug.
- The Handbook of Perioperative Medicines (UK Clinical Pharmacy Association)
- Find out if you have a local policy on managing patients in the perioperative period.

3. Medicines after bariatric surgery

A neurologist contacts you to ask whether bariatric surgery may impact the handling of lamotrigine by the body. He has a patient whose epilepsy is usually well-controlled, but it has deteriorated recently after gastric bypass surgery.

Suggested questions to ask include:

(a) What is the dose, frequency and formulation of lamotrigine?
(b) Have any levels been taken?
This may help to establish whether the medicine is being absorbed.
(c) What type of bariatric surgery did the patient have?
There are several types of bariatric surgery that may impact drug pharmacokinetics differently.
(d) When did the epilepsy control start to deteriorate relative to the bariatric surgery?
To try to establish if the surgery could be responsible for the loss of epilepsy control. If the surgery was many months/years ago, this may point to an alternative explanation.
(e) Does the patient take any other medicines or have any other relevant medical history?
(f) Have there been any recent changes to the patient's medicines?
Has anything been recently introduced that might account for the loss of epilepsy control such as an interacting medicine.
(g) Does the patient claim to be compliant with lamotrigine?

Suggested sources:

- The SmPC for lamotrigine might be a good starting point to find out about where it is absorbed in the gut. These documents rarely have any other helpful information about dose adjustment in patients who have had bariatric surgery but there are a few exceptions (e.g. lithium).
- The SPS website has some brief guidance on managing medicines in patients who have undergone bariatric surgery.
- The TRIP Pro database may help to signpost you towards expert guidance on the matter.
- For more detailed information you may need to undertake a search for published literature such as case reports and/or reviews using Embase, Medline or Google Scholar.