

1. Drugs causing jaundice

A junior doctor asks for advice. He has a patient on lisinopril, digoxin, furosemide, salbutamol, prednisolone and flucloxacillin. The patient has developed jaundice. He wants to know whether any of these drugs could be responsible.

Suggested questions to ask include:

(a) Has the patient any history of liver disease?

Is there a potential non-drug cause?

(b) When did the patient's jaundice start?

(c) Which drug(s) were started during the few weeks before signs/symptoms developed?

Medication which the patient has been taking for years can be discounted as an unlikely cause. But medicines started a few days or weeks before symptoms/signs first appeared are the most likely causes.

(d) Do you have recent LFTs and are they improving, deteriorating or stable?

Some drugs may produce a particular pattern of deranged LFTs and this may help with identifying a cause. If LFTs are improving despite no medication being changed, perhaps there is a non-drug cause. If LFTs are severely deranged and getting worse, there is a greater need for prompt identification and resolution of the cause.

(e) Has any other medication been stopped recently?

It's worth asking this question in case a potential cause is overlooked. Some drugs have been associated with delayed onset adverse effects.

(f) Is the patient taking any OTC drugs, herbal products or illicit drugs?

If you can't identify a cause this is worth looking into. Most doctors would ask about drug abuse in a patient with jaundice, but they may overlook less obvious drugs like anabolic steroids, and some herbal and OTC medicines have caused liver damage.

Suggested sources:

- Try SmPCs, Micromedex, AHFS Drug Information, and/or Martindale if you have them.
- You could try LiverTox or you may need to undertake a literature search (e.g. Embase, Medline, Google Scholar).

2. Simvastatin following a liver transplant

A GP calls to ask whether simvastatin may be used in a patient who had a liver transplant several years ago. They are currently stabilised on ciclosporin and azathioprine. A recent blood test indicated a raised total cholesterol.

Suggested questions to ask include:

(a) How is the transplant functioning? What is the clinical condition of the patient? What are the results of any recent liver function tests, or other diagnostic liver tests?

To check on whether simvastatin is suitable for this patient in view of their transplant and to advise on the dose and frequency.

(b) What is the patient's lipid profile? What other risk factors do they have?

Is a statin definitely indicated?

(c) Does the patient have any other medical conditions or take any other drugs?

To enable you to check on interactions or whether simvastatin may have any undesirable effects in this patient.

Suggested sources:

- SmPCs, Stockley's for interactions, Martindale, Micromedex and/or AHFS Drug Information if you have it.
- Check for expert guidance such as that produced by transplant or cardiovascular medicine bodies through the TRIP database.
- You could search for published literature using Embase, Medline or Google Scholar.

3. Memantine in a patient with liver cirrhosis

On a ward round, a consultant asks you about the use of memantine in a patient with liver impairment. The patient is 73 years old, has a diagnosis of dementia and a history of liver cirrhosis.

Suggested questions to ask include:

(a) What is the extent of the liver impairment, and what is the clinical condition of the patient?

You cannot advise the enquirer without knowing the extent, severity and duration of the liver damage and the clinical manifestations in this individual.

(b) What is the patient's renal function?

(c) Does the patient have any other medical conditions?

To further check on the suitability of memantine for this patient.

(d) Does the patient take any other medicines?

To check for drug interactions with memantine

Suggested sources:

- BNF, SmPC.
- Martindale, AHFS Drug Information, Lexicomp and/or Micromedex if you have access.
- LiverTox to check on the hepatic safety profile of memantine.
- Stockley's for drug interactions.
- The SPS site has some guidance on [prescribing in patients with liver disease](#) and [interpreting the Child-Pugh score](#).