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Isolated raised ALP in asymptomatic adult[#]

[#]Isolated = normal ALT and bili. Bone pain is suggestive of bone origin

ALP ULN = 130 IU/L

Exclude obvious cause e.g. pregnancy, recent #, hyperthyroidism.

- >200 IU/L
- <200 IU/L → Repeat 1 – 3 months later → Persistently raised ALP → Add-on/request GGT and calcium

Raised GGT → Probable liver pathology* (see BOX 1)

Normal GGT

- Low calcium
  - ? Vitamin D deficiency. http://www.sth.nhs.uk/clientfiles/File/sheffield_vit_D_guidance_Dec%202012%20master.pdf
- High calcium
  - ? PHPT (send purple top tube for PTH)
  - ? Bone mets (consider PSA & DRE in male)
- Normal calcium
  - ? Vitamin D deficiency
  - Consider PSA & DRE in male
  - Consider Paget's, particularly if bone pain present
  - If cause unclear d/w duty biochemist need for ALP isoenzymes

Liver USS

- **Normal US** (Clinical cause unclear) → Consider AMA & immunoglobulins → **Refer or discuss (see below) as appropriate**
- **Abnormal US** (dilated bile ducts or focal lesion) → **Refer as appropriate**

Drug history (see BOX 2)

- + ve → Discontinue (if appropriate) and observe. If discontinuing is not an option d/w appropriate specialist

*NB A small no. of patients may have both liver and bone pathology. Consider if ALP is more significantly raised than the GGT.

BOX 1 Some Causes of Cholestasis in Adults

1. Extrahepatic

- Stones
- Tumours
- Strictures

2. Intrahepatic

Hepatocellular cholestasis

- Alcoholic or non-alcoholic steatohepatitis
- Cholestatic variety of viral hepatitis
- Cirrhosis (any cause)
- Drug- or intestinal failure-induced
- Obstetric cholestasis
- Liver mets
- Amyloidosis, sarcoidosis hepatis
- Congestive hepatopathy (due to CCF)
- Sepsis-, endotoxaemia-induced cholestasis

Cholangiocellular cholestasis

- Drug-induced
- Primary biliary cirrhosis (AMA+/AMA-)
- Primary & secondary sclerosing cholangitis
- Cystic fibrosis

BOX 2 Most frequent drugs causing cholestasis:

- Flucloxacillin
- Trimethroprim-sulfamethoxazole
- Nitrofurantoin
- Amoxicillin-clavulanic acid
- Erythromycin, Clarithromycin
- Clindamycin
- Herbal medicines
- Allopurinol
- Carbamazepine
- Phenytoin
- Chlorpromazine
- Sulpiride
- Azathioprine
- Ciclosporin
- Captopril
- Nifedipine
- Sex hormones
- NSAIDS
- Barbiturates
- Propafenone

Need to discuss? The duty biochemist, immunologist or hepatologist can be contacted via switchboard (243 4343)

Ref: 1. EASL Clinical Practice Guidelines: Management of cholestatic liver diseases. Journal of Hepatology 51 (2009) 237–267. 2. Primary Care and Laboratory Medicine Venture publications, 2010.