

**Initial thoughts**

1. **Pattern – Hepatitic, Cholestatic or Mixed**
2. **Time course – previous LFTs**
3. **Past history and current medications**

The most common causes of mildly abnormal LFTs in Australia are -

- NAFLD/NASH - Non alcoholic fatty liver disease
- Alcoholic liver disease

**Hepatitic picture**

- ALT and/or AST elevation
- Causes
  - Drugs and toxins
  - Viral hepatitis
  - Autoimmune hepatitis
  - Metabolic (e.g. fatty liver)
- Isolated ALT & AST – think about
  - Heavy exercise and muscular disorders
- Isolated ALT and pain – think about
  - acute biliary duct stone

**Cholestatic picture**

- ALP and GGT elevation
- Causes:
  - Drugs
  - Biliary disease – obstruction, PSC, PBC
  - Infiltrative

**Isolated ALP elevation**

- Ask lab to fractionate the ALP to liver or bone origin
- Bone ALP elevation:
- Vit D def (osteomalacia)
  - Hyperparathyroidism
  - Paget’s
  - Bone mets

**Isolated GGT elevation**

- Does not usually warrant extensive liver investigation or referral
  - ETOH intake
  - Medications
  - Marker of other disease (pancreas, heart, renal, lung)

**Isolated bilirubin elevation**

- Fractionate to determine if it is mainly unconjugated
- Unconjugated bilirubin elevation
- Haemolysis
  - Gilbert’s disease

**AST>ALT**

- Suggests alcoholic hepatitis (esp if 2:1 ratio)
- But also seen in cirrhosis and fatty liver disease (NASH)

**ALT >1000 – severe hepatitis**

- Drug (e.g. paracetamol) and toxin
- Viral hepatitis (HBV, HAV, CMV, EBV, not usually HCV)
- Ischaemic hepatitis (cardiac arrest)

**DANGER!! Falling ALT in the setting of:**

- ↑ bilirubin
- ↑ INR
  - Suggests acute liver failure with poor prognosis
  - Refer immediately to ED (& call your friendly neighbourhood gastroenterologist if possible)

**Investigations**

**Hepatitic picture**

- HAV serology
- HBV serology – have to specifically ask for sAb/cAb
- HCV serology
- CMV and EBV serology
- Fasting lipids / glucose
- Autoimmune - ANA, ASMA, antiLKM, Ig levels
- Iron studies

**Optional (second tier)**

- α1AT level (low is abnormal)
- Ceruloplasmin level (low is abnormal)
- Coeliac serology
- TFTs

**Cholestatic picture**

- USS liver (then usually an MRCP)
- AMA (mitochondrial)

**Optional**

- IgG4 levels – autoimmune cholangitis

**Fibroscan** – non invasive marker for hepatitis fibrosis

**Liver biopsy** – often not required, but consider if cause if unclear and/or worsening derangement

**Important details in a referral**

- Longitudinal pattern of LFTs
- Up to date medication list including special note of episodic treatment during period of abnormal LFTs (i.e. Antibiotics)



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