Chronic liver disease (CLD) - compensated

Definition of chronic liver disease (CLD)

- Progressive destruction of the liver parenchyma over a period greater than 6 months leading to fibrosis and cirrhosis

Epidemiology of chronic liver disease (CLD)

- Literature on the incidence and prevalence of liver cirrhosis is scarce but figures suggest that around 0.1% of the population in Europe is affected
- The figures vary depending on the aetiology

Aetiology of chronic liver disease (CLD)

- **Alcohol**
  - Commonest cause of CLD in the UK
- **Viral**
  - B, C and D
- **NAFLD/NASH**
  - Due to diabetes, metabolic syndrome
    - DM type II, Hypertension, Obesity, Hyperlipidaemia
  - Investigations
    - AST:ALT usually <1 (i.e. low)
    - Biopsy: microvesicular steatosis
- **Genetic**
  - Cystic fibrosis
  - Hereditary haemachromatosis
    - Excessive iron absorption leading to iron deposition in the liver and other organs
    - HFE gene on chromosome 6 – variable penetrance
    - Carrier prevalence 1 in 10 in northern Europe
    - Leads to liver cirrhosis, diabetes, skin discolouration, hypogonadism, arrhythmias, heart failure
    - Treat with regular venesection or desferrioxamine
  - Wilson's
    - Autosomal recessive disorder leading to copper accumulation
    - Leads to liver cirrhosis, neuropsychiatric symptoms including parkinsonism, cardiomyopathy, arrhythmias
    - Low serum caeruloplasmin and high urinary copper
    - Treat with copper chelators such as penicillamine
  - Glycogen storage diseases
- **Autoimmune**
  - PBC
  - PSC
  - AIH
    - Females > males
    - 2 peaks
      - Peri- and post- menopausal (types I and III)
      - Teenage/early twenties (predominantly type II)
    - Genetic predisposition thought to combine with unknown environmental trigger to set it off.
    - Associated with other autoimmune disease
      - PA, thyroiditis and autoimmune haemolytic anaemia.

        - Three types
            - Type I: Anti-nuclear and/or anti-smooth muscle antibodies
            - Type II: Anti liver/kidney microsomal (anti-LMK1)
            - Type III: With soluble liver antigen (course same as type I)
        - Investigations
            - Ant- smooth muscle abs
            - IgG usually up as well
        - Treatment
            - Prednisolone 60mg AND/OR azathioprine
- **Drugs**
    - Isoniazid, methotrexate, amiodarone, phenytoin, sodium valproate, nitrofurantoin
- **Vascular**
    - Budd-Chiari
- **Idiopathic/Cryptogenic**

Presentations of chronic liver disease (CLD)

- Fatigue
- Encephalopathy
- Hands
    - Dupuytren's contracture, palmar erythema, leuconychia
- Asterixis
- Face
    - Jaundiced sclera
    - Fetor hepaticus
- Chest
    - Spider naevi, gynaecomastia
- Abdomen
    - Hepatomegaly, splenomegaly (due to portal hypertension)
    - Ascites, caput medusa
- Polyneuropathy

Scoring systems for chronic liver disease (CLD)

There are various scoring systems, each used by different institutions in slightly different situations. The basic parameters of these scores are below:

- **MELD** (model of end-stage liver disease)
    - Bilirubin
    - Creatinine
    - INR
- **UKELD** (UK model of end-stage liver disease)
    - Bilirubin
    - Creatinine
    - INR
    - Sodium
- **Childs-Pugh**
    - Ascites
    - Bilirubin

- Albumin
- PT
- Encephalopathy

Initial management of chronic liver disease (CLD)

- Bloods
  - Severity assessment
    - FBC: normocytic normochromic anaemia with leukopenia and thrombocytopenia often present
    - LFTs: deranged across the board. Note can be normal in very advanced disease.
    - Coagulation
    - Note that the tests of synthetic liver function are **albumin**, **PT** and **platelets**
      - If these are deranged suspect severe disease
    - U+Es can be deranged in hepatorenal syndrome or excess diuretic therapy in response to ascites and oedema
  - Search for causes
    - Viral screen: Hep B,C and delta, HIV 1&2
    - Autoantibodies (PBC/PSC)
    - Serum Immunoglobulins
    - Iron studies and ferritin (Haemochromatosis)
    - Copper and Ceruloplasmin (Wilson's)
    - Alpha-1 antitrypsin level (deficiency)
- Imaging
  - USS
    - Can demonstrate fatty liver, nodularity of cirrhosis, distortion of architecture, and can detect HCC
  - CT
    - Hepatosplenomegaly; triple-phase scan will show contrast-enhancing HCC
- Endoscopy
  - All patients should have a screening gastroscopy to check for oeseophageal varices
  - If varices present patient should be enrolled on a banding programme or commenced on a non-selective beta-blocker (e.g. propranolol)
- Abstinence from alcohol
  - Important for other causes of cirrhosis, not just alcohol-related CLD
- Treat cause
  - Antiviral treatment; steroids; ursodeoxycholic acid etc

Further management of chronic liver disease (CLD)

- Treat complications and decompensations
- 6-monthly USS
  - 3-monthly if haemochromatosis) and ALP to screen for hepatocellular carcinoma
- Liver Biopsy
  - Shows type and severity of disease
  - Can be used for staging prior to consideration of liver transplantation
- Liver transplantation

Complications of chronic liver disease (CLD)

- Variceal bleeding
- Ascites

- Spontaneous bacterial peritonitis
- Encephalopathy
- Hepatorenal syndrome
- HCC

Prognosis of chronic liver disease (CLD)

- Varies depending on cause and severity
- Poor prognostic factors include grade III or IV encephalopathy, age >40, drug-induced hepatic failure, high INR