### Chronic liver disease (CLD)

#### 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 discoloration, 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
  - Fetur 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
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 oesophageal 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
<table>
<thead>
<tr>
<th>Spontaneous bacterial peritonitis</th>
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<tbody>
<tr>
<td>Encephalopathy</td>
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<tr>
<td>Hepatorenal syndrome</td>
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<tr>
<td>HCC</td>
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**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