Diagnosis and Management of Liver Diseases

**Primary Biliary Cirrhosis**

**Dx**: Hepatomegaly, splenomegaly, jaundice, pruritus, ANA, anti-smooth muscle antibodies.

**Management**

- Anti-thyroid drugs
- Steroids
- Gastrostomy feeding
- Blood transfusion
- Liver transplantation

**Hepatocellular Carcinoma**

**Dx**: Hepatomegaly, enlarged bursae, low-grade fever, ANA, ATG.

**Management**

- Surgery (early stage)
- Chemotherapy (late stage)
- Palliative care

**Viral Hepatitis**

**Dx**: Hepatomegaly, jaundice, pruritus, ANA, anti-smooth muscle antibodies.

**Management**

- Antiviral drugs
- Supportive care
- Liver transplantation

**Alcoholic Hepatitis**

**Dx**: Hepatomegaly, jaundice, pruritus, ANA, anti-smooth muscle antibodies.

**Management**

- Hospitalization
- Supportive care
- Liver transplantation

**Wilson’s Disease**

**Dx**: Hepatomegaly, jaundice, pruritus, ANA, anti-smooth muscle antibodies.

**Management**

- Chelators (d-penicillamine, trientine)
- Liver transplantation

**Diagnosis of Liver Disease**

- **Laboratory Tests**
  - Blood tests (CBC, serum chemistry, liver function tests)
  - Imaging studies (ultrasound, CT, MRI)

- **Clinical Evaluation**
  - Physical examination
  - History taking

- **Biopsy**
  - Liver biopsy
  - Percutaneous needle biopsy

**Prognosis of Chronic Liver Disease**

<table>
<thead>
<tr>
<th>Disease</th>
<th>Severity</th>
<th>Child-Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute</td>
<td>A</td>
<td>1 year mortality 100%</td>
</tr>
<tr>
<td>Chronic</td>
<td>B</td>
<td>5 year mortality 80%</td>
</tr>
<tr>
<td>Chronic</td>
<td>C</td>
<td>5 year mortality 50%</td>
</tr>
</tbody>
</table>

**Prognosis of Hepatorenal Syndrome (HRS)**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Prognosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>GFR: Crea &gt;2.0, or 24-hr CrCl &lt; 40 ml/dl</td>
<td>Good</td>
</tr>
<tr>
<td>Serum bilirubin &gt; 3 mg/dl</td>
<td>Poor</td>
</tr>
<tr>
<td>Serum creatinine &gt; 3 mg/dl</td>
<td>Poor</td>
</tr>
<tr>
<td>Serum sodium &lt; 125 mEq/L</td>
<td>Poor</td>
</tr>
</tbody>
</table>

**Prognostic Index for Portal-Systemic Encephalopathy (PSE) in the Cirrhotic Patient**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive ascitic fluid</td>
<td>1</td>
</tr>
<tr>
<td>Bilirubin 2.5 mg/dl or greater</td>
<td>1</td>
</tr>
<tr>
<td>Albumin &lt; 2 g/dl</td>
<td>1</td>
</tr>
<tr>
<td>Serum creatinine &gt; 3 mg/dl</td>
<td>1</td>
</tr>
</tbody>
</table>

**Progress of Chronic Liver Disease**

<table>
<thead>
<tr>
<th>Disease</th>
<th>Stage</th>
<th>Prognosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute</td>
<td>A</td>
<td>1 year mortality 100%</td>
</tr>
<tr>
<td>Chronic</td>
<td>B</td>
<td>5 year mortality 80%</td>
</tr>
<tr>
<td>Chronic</td>
<td>C</td>
<td>5 year mortality 50%</td>
</tr>
</tbody>
</table>

**Criteria for Hepatorenal Syndrome (HRS)**

- **GFR**: Crea >2.0, or 24-hr CrCl < 40 ml/dl
- **Serum bilirubin**: > 3 mg/dl
- **Serum creatinine**: > 3 mg/dl
- **Serum sodium**: < 125 mEq/L

**Treatment of Hepatorenal Syndrome**

- **Fluid restriction**: 1000 ml/day
- **Hypertonic saline (1.5 l of isotonic saline)**
- **Hemofiltration/hemodialysis**
- **Liver transplantation**
weight loss. If not possible consider liver biopsy.

- **ETOH**: AST > 300; ALT > 30; GGT > 300, 4-6 plackets.

- **Injection**: Acoc. AV = 100, hepatitis C, F/P, pressure of offering Rx.

- **Obstruction**: Rx, consider CPB.

**W/U for Isolated Fasting Alcoholic Phosphatase Elevation**  
**GGT**:  
**GGT**: for extrahepatic source: bane (Papage’s tumor, fracture), infection, pleurisy, malignancy, CHF.

**W/U for Isolated Bilirubin Elevation**  
**Direct**:  
**Direct**: if ETOH: repeat TS after 6 weeks of abstinence. If abstinence not possible and 1 feritin: consider liver biopsy.

TS < 350, norm. = biopsy for liver disease.

TS < 45%: no further necessary.

TS-testing of index cases 1st and 2nd degree relatives. Note: Genetic testing may fail to identify 20% of white and African-American (mutation rare). cases.

**Screening for Methotrexate Hepatotoxicity**  
Liver biopsy after 1-3 yr for both poisonings and RA patients.

**Screening for Hemochromatosis**  
**Hemochromatosis**: iron overload.

**Hemochromatosis**: iron overload.

- **TS < 45% and no ETOH**: if Ferror and LFT abnormal, explore liver biopsy. If Ferror and lift LFT < 2 for 2 months, then liver biopsy.

**W/U for Isolated Fasting Alcoholic Phosphatase Elevation**  
**GGT**:  
**GGT**: for extrahepatic source: bane (Papage’s tumor, fracture), infection, pleurisy, malignancy, CHF.

**Contraindications to CPB**:

- **Anticoagulation**: targeted dose may be administered in alcoholics.

- **Anticoagulation**: targeted dose may be administered in alcoholics.

- **Anticoagulation**: targeted dose may be administered in alcoholics.

- **Anticoagulation**: targeted dose may be administered in alcoholics.

- **Obesity or DM**: hepatomegaly with T echogenicity = rev AST/ALT after 3 months

**W/U and Treatment of Alcohol Hepatitis**  
**Hepatic**: AST > 300 (both < 300, T, F). T, pyro, liver and myeloproliferative leucocytosis w/ infection.  
**Liver Transplantation**

- **Liver Transplantation**: Insufficient liver biopsy results.

**Screening for Methotrexate Hepatotoxicity**  
Liver biopsy after 1-3 yr for both poisonings and RA patients.

**Screening for Hemochromatosis**  
**Hemochromatosis**: iron overload.

**Hemochromatosis**: iron overload.

- **TS < 45% and no ETOH**: if Ferror and LFT abnormal, explore liver biopsy. If Ferror and lift LFT < 2 for 2 months, then liver biopsy.

**W/U for Isolated Bilirubin Elevation**  
**Direct**:  
**Direct**: if ETOH: repeat TS after 6 weeks of abstinence. If abstinence not possible and 1 feritin: consider liver biopsy.

TS < 350, norm. = biopsy for liver disease.

TS < 45%: no further necessary.

TS-testing of index cases 1st and 2nd degree relatives. Note: Genetic testing may fail to identify 20% of white and African-American (mutation rare). cases.

**Treatment of Established Hemochromatosis**  
(1yr = 20 gns Fe3% for lifetime of Ed)  
**Phlebotomy of 1 Unit PRBC (120g-150g Fe3%) per week

**W/U and Treatment of Alcohol Hepatitis**  
**Hepatic**: AST > 300 (both < 300, T, F). T, pyro, liver and myeloproliferative leucocytosis w/ infection.  
**Liver Transplantation**

- **Liver Transplantation**: Insufficient liver biopsy results.