HEPATITIS B

• Transmission:
  Sexual, parenteral, perinatal, direct contact between individuals

• Clinical Signs:
  Asymptomatic in 90% of cases

• Cure:
  95% of cases (adults)

• Complications:
  Cirrhosis and hepatocellular carcinoma

• Development of chronic form:
  Yes (5% of adult cases)

• Prevention:
  Vaccination ++++; specific IgG

• Main Marker:
  HBS Ag, anti HBc IgM, total anti HBc Ab, Anti-HBs Ab, Anti-HBe Ab, HBV DNA

How to request for Hepatitis B Surface Antigen / Australia Antigen

Negative
- Proceed to Full Hep B Profile (undertaken by TDL as routine reflex testing to identify active information)

Weakly Reactive or Positive
- HepB e Antigen
- HepB core Specific IgM

How to request for Hepatitis B Immunity (anti-HBs)

Vaccination/At Risk Population

<table>
<thead>
<tr>
<th>Anti HBs</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 10 mIU/ml</td>
<td>Non-immune to Hepatitis B</td>
</tr>
<tr>
<td>10–50 mIU/ml</td>
<td>Borderline – Booster indicated</td>
</tr>
<tr>
<td>50–100 mIU/ml</td>
<td>Low level immunity – Booster suggested</td>
</tr>
<tr>
<td>&gt; 100 mIU/ml</td>
<td>Immune to Hepatitis B</td>
</tr>
</tbody>
</table>

Sample Requirements

<table>
<thead>
<tr>
<th>Test</th>
<th>Top Type</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBS Ag</td>
<td>Gold</td>
<td>B</td>
</tr>
<tr>
<td>Anti-HBc IgM</td>
<td>Gold</td>
<td>B</td>
</tr>
<tr>
<td>Total anti-HBc Ab</td>
<td>Gold</td>
<td>B</td>
</tr>
<tr>
<td>Anti-HBs Ab</td>
<td>Gold</td>
<td>B</td>
</tr>
<tr>
<td>HBe Ag</td>
<td>Gold</td>
<td>B</td>
</tr>
<tr>
<td>Anti HBe Ab</td>
<td>Gold</td>
<td>B</td>
</tr>
<tr>
<td>HBV DNA</td>
<td>Purple/EDTA</td>
<td>A</td>
</tr>
<tr>
<td>Anti-HCV Ab</td>
<td>Gold</td>
<td>B</td>
</tr>
<tr>
<td>HCV RNA</td>
<td>Purple/EDTA</td>
<td>A</td>
</tr>
<tr>
<td>Hep B Immunity</td>
<td>Gold</td>
<td>B</td>
</tr>
<tr>
<td>HIV/p24 antigen</td>
<td>Gold</td>
<td>B</td>
</tr>
<tr>
<td>Proviral HIV</td>
<td>Purple/EDTA</td>
<td>A</td>
</tr>
<tr>
<td>HIV RNA</td>
<td>Purple/EDTA</td>
<td>A</td>
</tr>
</tbody>
</table>

* At Risk Subjects: Drug abusers, Haemodialysis patients, Close family/friends of infected subject, Healthcare workers, Subjects with multiple sexual partners, Children born to infected mothers.
How to request for Hepatitis C Antibodies

HEPATITIS C
- **Transmission:** Parenteral, nosocomial
- **Clinical Signs:** Asymptomatic in 90% of cases
- **Cure:** 95% of cases (adults)
- **Complications:** Cirrhosis and hepatocellular carcinoma
- **Development of chronic form:** Yes (80% of adult cases)
- **Prevention:** Hygiene, no vaccination
- **Main Marker:** Anti HCV Ab, HCV RNA, HCV

**Incubation**
- Acute phase: 4-12 weeks
- Cure: 2-12 weeks

<table>
<thead>
<tr>
<th>Incubation</th>
<th>Acute phase</th>
<th>Cure</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-7 weeks</td>
<td>4-12 weeks</td>
<td>years</td>
</tr>
</tbody>
</table>

**Clinical signs**
- HCV RNA
- HCV Ag
- Anti-HCV Ab

**Total anti-HBc Ab**
- Anti-HBc IgM
- Anti-HBs Ab

**Anti-HBe Ab**
- HBV DNA
- HBe Ag
- HBs Ag

**Increase in transaminase levels**

**HepC RNA Quantitative (reports copy load)**
- < 10,000 copies/ml considered low levels
- 10,000 – 100,000 copies/ml considered moderate levels
- > 100,000 copies/ml considered high levels

**RIBA: Confirmation of Antibodies (not quantitative)**
- Positive (Proceed to HepC RNA)
- Negative (No further investigation)

**The prognostic value of HCV genotyping**
- Chronic hepatitis; cirrhosis may, ultimately develop in up to 20% of HCV cases. Genotype 1b is more frequent (~70%) Genotype 1a, 2a and 2b are less frequent (~10%)

**Patient / treatment management**

How to request for HIV 1 & 2 Antibodies (Serum)/p.24 Antigen

HIV (Human Immunodeficiency Virus)
- **Transmission:** Sexual, infected blood, sharing needles/stick injury, pregnancy and birth
- **Clinical Signs:** Flu-like symptoms possible within a month or two after exposure to the – fever, headache, fatigue, and enlarged lymph nodes (time of high infectivity). Long asymptomatic period followed by enlarged glands before onset of AIDS. AIDS applies to the most advanced stages of HIV infection.
- **Cure:** Currently, there is no cure for HIV or AIDS. However, certain therapies can help. Early initiation of treatment is the best course.
- **Complications:** HIV is the that causes AIDS (acquired immunodeficiency syndrome). By destroying cells of your body’s immune system, HIV progressively destroys the body’s ability to fight infections and certain cancers. Most people infected with HIV will develop AIDS but this may take several years. It is estimated that approximately 50% of people with HIV will develop AIDS within 10 years of becoming infected.
- **Prevention:** Education, safe sex, no vaccine.
- **Main Diagnostic Markers:** HIV 1&2 Abs/p24 antigen, Proviral HIV for early diagnosis, HIV RNA.

**Incubation**
- Acute phase: 4-12 weeks
- Cure: 2-16 months

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**Clinical signs**
- Total anti-HBc Ab
- Contact
- HBs Ag
- HCV RNA
- HBV DNA
- HBe Ag
- HBs Ag
- Anti-HBc IgM
- Total Anti-HBc Ab
- Anti-HBe Ab
- Anti-HBs Ab

**For earliest Possible Diagnosis:**
- Proviral HIV (HIVP 14 days post exposure). Testing for Antibody status is not appropriate. Proviral HIV gives a negative/positive DNA result (not Quantitative). If positive HIV RNA provides a quantitative result.

**Suggestion confirmation using 3 independent techniques**

**HIV RNA (Quantitative)**
- Negative
- Positive

**OR**

**Refer for Patient Management**