Learn simply

Hepatitis B

Hepatitis B[1]

- Identify risk factors for hepatitis B virus (HBV) infection[2]
- Understand the risks to the mother[3]
- Understand potential risks to the fetus[4]

Is the woman currently symptomatic?[5]

No → Perform routine serologic screening[6]

- **Negative**
  - Discuss HBV prevention[7]
  - *Consider repeating serologic screening in the 3rd trimester in high-risk pregnancies*
  - Continue routine prenatal care
- **Positive**
  - **Check HBcAg, HBeAg, and liver function tests**
  - Continue supportive care[8]
  - √ ultrasound to confirm gestational age and document fetal wellbeing
  - Serial liver function tests q trimester
  - *Serial ultrasounds for fetal growth*

Yes → Confirm the diagnosis of acute HBV infection[9]

- **Diagnosis confirmed**
  - Screen for other sexually transmitted infections
  - Continue supportive care[8]
  - Consider checking for fetal infection[10]
  - √ ultrasound to confirm gestational age and document fetal wellbeing
  - **Consider inpatient care for acute infection with coagulopathy or encephalopathy**
  - Serial liver function tests q trimester
  - Serial ultrasounds for fetal growth
- **Diagnosis not confirmed**
  - If symptoms persist, consider alternative diagnoses[11]
  - Discuss HBV prevention[7]
  - Continue routine prenatal care

Prevent vertical transmission

- **No proven benefit to elective cesarean delivery**
- If possible, avoid early rupture of membranes, placement of fetal scalp electrode (FSE) or intrauterine pressure catheter (IUPC) in labor
- **Exposed neonates should receive HBIg by 12 hours of life and the hepatitis B vaccine by 6 months**
- **Breastfeeding is not contraindicated**

1. Viral hepatitis is caused by members of the hepatitis family of small DNA viruses.
2. Approximately
   - 80–85% of individuals infected with hepatitis B virus (HBV) clear the infection and develop lifelong protective immunity as evidenced by the presence of anti-hepatitis B surface antibodies (HBsAb);
   - 10–15% remain chronically infected with detectable hepatitis B surface antigen (HBsAg) but have normal hepatic function;
   - 5–10% are chronically infected with persistent viral replication, elevated liver function tests, and measurable HBeAg expression (a marker of high infectivity).

3. Acute hepatitis B occurs in 1 in 1,000 pregnancies,
4. chronic hepatitis B is seen in 10 in 1,000 pregnancies.

5. Risk factors for acute HBV infection include
   - intravenous drug abuse,
   - multiple sexual partners,
   - household or occupational exposure (especially working in a hemodialysis unit),
   - intravenous drug abuse,
   - prior blood transfusion,
   - chronic hospitalization.
6. Risk factors for chronic HBV carrier status include
   - infant or early childhood exposure,
   - immunosuppression,
   - endemic home origin such as Asia or Latin America.

1. Acute viral hepatitis is the most common cause of jaundice in pregnancy.
   - Other manifestations include:
   - right upper quadrant pain,
   - elevated liver function tests, and
   - (rarely) coagulopathy and encephalopathy.

2. Serious long-term complications include
   - cirrhosis and hepatocellular carcinoma.

3. The risk to the fetus of acquiring HBV infection is related primarily to two factors:
   - (i) gestational age (10% risk if infected in the first trimester versus 90% if infected in the third trimester); and
   - (ii) maternal infectivity status (10–20% if HBsAg-positive only versus 90% if HBsAg-positive and HBeAg-positive).

4. Every effort should be made to avoid amniocentesis.
5. Women with acute HBV infection are often asymptomatic.
6. Symptoms may include
   - low-grade fever,
   - malaise,
   - fatigue,
   - nausea,
   - abdominal pain,
   - jaundice.

1. Serologic screening is recommended for all pregnant women at their first prenatal visit regardless of their risk status.
2. The clinically relevant antigens include:
   - (i) surface antigen (HBsAg), which is found on the viral surface and free in maternal serum;
   - (ii) core antigen (HBcAg), which is found in hepatocytes;
   - (iii) envelope antigen (HBeAg), which is only expressed in the setting of a high viral load and is a marker of high infectivity.

3. Routine serologic screening includes HBsAg only.
4. If the HBsAg screen is positive, then HBcAg and HBeAg serology should be sent along with liver function tests (transaminase levels, bilirubin) and coagulation profile.
5. There is no place for imaging studies to confirm the diagnosis of viral hepatitis, although a right upper quadrant ultrasound may be useful in excluding other diagnoses (such as gallbladder disease).

1. Prevention of maternal HBV infection includes
   - avoidance of unprotected intercourse,
   - routine use of barrier contraception,
   - and stopping IV drug abuse.

2. If an exposure is documented, hepatitis B immunoglobulin (HBIg) 0.06 mL/kg IM should be administered with 12 hours, and the hepatitis B vaccine should be offered (two injections 6 months apart).

3. Reducing perinatal transmission is critical to reducing newborn HBV infection and is achieved by administering HBIg and the first dose of a three-dose series of HBV vaccine prophylactically within 12 hours of birth. Prevention also extends to all obstetrical providers who in addition to adhering to standard bloodborne pathogen precautions should receive the hepatitis B virus vaccine series.

1. The management of maternal HBV infection is primarily supportive.
2. Antiviral treatment with interferon-alpha may be recommended in non-pregnant women with chronic hepatitis, but is contraindicated in pregnancy. Lamivudine (100–150mg daily) can decrease viral load and reduce vertical transmission. It should be started in the 3rd trimester if the viral load is >106 copies/mL.
3. Physical examination is often unhelpful, but may show evidence of jaundice or abdominal tenderness. Maternal hepatitis B infection is typically confirmed by serologic testing.
4. Fetal infection can be confirmed by detection of viral particles or DNA in fetal serum, amniotic fluid, or placental tissues; however, invasive prenatal testing is not routinely recommended.
5. Differential diagnosis includes other viral hepatitis infections (such as hepatitis A, C, and D), cytomegalovirus hepatitis, pancreatitis, gallbladder disease, cholestasis of pregnancy, severe preeclampsia/HELLP (hemolysis, elevated liver enzymes, low platelets) syndrome, and acute fatty liver of pregnancy.