

## HEPATITIS B IN PREGNANCY

### Hepatitis B is:

- Polypeptide encapsulated virus with a DNA predominate nucleocapsid core
- Incubation period of 45-160 days
- Found in blood and certain body fluids
- Spread by blood and body fluids and perinatally

The **laboratory findings of Hepatitis B** depend on the stage.

- All pregnant patients are screened with a Hep BsAg test with their prenatal labs.
- If they are not already known to have chronic Hep B and they have a positive antigen test, then they need follow-up testing to differentiate chronic Hepatitis B from acute Hepatitis B:  
HepBsAb (anti-HBs),  
HepBcAb,  
HepB IgM
- Acute Hep B can occur in pregnancy, and, while usually asymptomatic, can result in acute liver failure. Acute Hep B in pregnancy has a higher rate of transmission to the newborn than chronic.

**Chronic Hepatitis B:** most common in people exposed either perinatally or as infants and these patients are at risk of spreading the virus in a similar manner.

### Risk Groups:

- HBV is endemic in Asia, South Pacific, sub-Saharan Africa, and in certain indigenous populations residing in the Arctic, Australia, New Zealand, South America, and the Middle East.
- In the US, there is a 13% rate of HBsAg+ is persons born in the above mentioned areas.
- The risk groups for native born people who have ever used IV drugs, men having sex with men, people with multiple sexual partners, patients with a history of an STD, dialysis patients, and household contacts of Hep B patients.

In MN, **universal screening** of all pregnant ladies for Hep B is REQUIRED because:

- Perinatal transmission of the Hepatitis B virus (HBV) from mother to infant at birth is very efficient, as high as 70-90%.
- Up to 90% of perinatally infected babies who are not treated will develop a chronic Hepatitis B infection.
- Treatment initiated within 12 hours after birth is up to 90% effective at prevention

- Approximately 100,000 new Hepatitis B cases are diagnosed in the U.S. each year. One third of the chronic infections are acquired perinatally or in early childhood through close household contact.

**Minnesota Perinatal Prevention Project components:**

- Obstetric patients are evaluated and screened for HBV infection early in *each* pregnancy. If the patient is high risk, screening tests are repeated later in the pregnancy.
- HBV-infected women receive further medical evaluation and follow-up.
- Hepatitis B serology results are documented in the patient’s prenatal record and forwarded to the hospital to be placed prominently in the patient’s chart.
- Pregnancies in HBV-infected women are reported to Minnesota Department of Health MDH.
- Local public health nurses receive referrals from MDH and follow up with the expectant mother to educate her about her infection, and the implications and recommended preventive treatment for her baby.
- Infants born to HBV-infected mothers receive:
  1. Hepatitis B immune globulin (HBIG) and HBV vaccine within 12 hours of birth,
  2. Additional doses of HBV vaccine to complete the series in accordance with the recommended schedule, and
  3. Post-vaccination serology (3-6 months after the initial series is complete)
- Document treatment in the infant’s medical record.
- Infants who do not demonstrate an immune response in post-vaccination serologic testing receive a second vaccine series.
- HBV-infected infants are referred for further medical evaluation and follow-up.
- Household members and other close contacts of the mother and infant are screened; HBV-susceptible individuals are vaccinated; and infected individuals receive further medical evaluation and follow-up.

**Universal newborn Hep B vaccinations:**

- Vaccination prior to discharge from hospital, vaccination in 2 weeks or 1 month gives no added protection from waiting until 2 months for the combined vaccines
- Universal immunization prior to hospital discharge will prevent neonatal HepB in 65-95% of exposed infants, without HBIG.

**Sources:**

(1) Harrison's Textbook of Internal Medicine

(2) Minnesota Department of Health Hepatitis B Perinatal Prevention Project

(<http://www.health.state.mn.us/divs/idepc/diseases/hepb/perinatal/index.html>)

(3) AASLD Practice Guidelines "Chronic Hepatitis B" 2007 American Association for the Study of Liver Disease

Tests	Results	Interpretation
HBsAg anti-HBc anti-HBs	negative negative negative	susceptible
HBsAg anti-HBc anti-HBs	negative negative positive with ≥10mIU/mL*	immune due to vaccination
HBsAg anti-HBc anti-HBs	negative positive positive	immune due to natural infection
HBsAg anti-HBc IgM anti-HBc anti-HBs	positive positive positive negative	acutely infected
HBsAg anti-HBc IgM anti-HBc anti-HBs	positive positive negative negative	chronically infected
HBsAg anti-HBc anti-HBs	negative positive negative	four interpretations possible <sup>†</sup>