

A 33-year-old Caucasian female delivers a healthy full term-male child by spontaneous vaginal delivery. At her last prenatal appointment three days ago, she complained of malaise, myalgia, nausea, vomiting, and mild right upper quadrant abdominal pain. Physical examination of the woman at that time demonstrated jaundice but was otherwise unremarkable. Laboratory test results returned shortly before she delivered today and included the following:

Hepatitis panel

HBsAg	Positive
Anti-HBsAg	Negative
IgM Anti-HBcAg	Positive
HBeAg	Positive
Anti-HBeAg	Negative

Which of the following would be the most appropriate management of the infant's condition?

- ☐ A. No treatment is necessary
- ☐ B. Administration of hepatitis B immune globulin followed by hepatitis B vaccine vaccination
- ☐ C. Administration of hepatitis B vaccine
- ☐ D. Administration of hepatitis B immune globulin
- ☐ E. Observation of child with repeat serological testing for hepatitis B

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HBsAg	Positive
Anti-HBsAg	Negative
IgM Anti-HBcAg	Positive
HBeAg	Positive
Anti-HBeAg	Negative

Which of the following would be the most appropriate management of the infant's condition?

A. No treatment is necessary [1%]



B. Administration of hepatitis B immune globulin followed by hepatitis B vaccine vaccination [87%]



C. Administration of hepatitis B vaccine [2%]



D. Administration of hepatitis B immune globulin [8%]



E. Observation of child with repeat serological testing for hepatitis B [2%]



Proceed to Next Item



D. Administration of hepatitis B immune globulin [0%]

E. Observation of child with repeat serological testing for hepatitis B [2%]

Proceed to Next Item

### Explanation:

User Id: [REDACTED]

Vertical transmission of hepatitis B from pregnant females to the unborn child can occur with active hepatitis B infection. Typically, such transmission takes place during the passage of the fetus through the birth canal, but transplacental infection can also occur. This is especially common in those women who developed acute hepatitis B infection in the third trimester.

The diagnosis of acute hepatitis B infection is supported by this woman's positivity for HBsAg (a surface antigen that is the first evidence of infection), HBeAg (a soluble protein that is a marker of viral replication and infectivity), and IgM anti-HBcAg (antibody to hepatitis B core antigen). Were this woman HBeAg negative, her neonate's risk of infection would be 20%. Since she is HBeAg positive, however, her neonate's risk of infection is 95%. If the infant does become infected, his chance of progression to chronic hepatitis is 90%. Therefore, the newborns of all mothers with active hepatitis B should be passively immunized at birth with hepatitis B immune globulin (HBIG), followed by active immunization with recombinant HBV vaccine.

**(Choices A and E)** Withholding treatment in this case is highly inappropriate because 90% of cases of hepatitis B in the newborn will progress to chronic hepatitis. In contrast, the rate of progression to chronic hepatitis in adults with hepatitis B is only 10%.

**(Choice D)** Passive immunization with HBIG provides only temporary protection and is therefore not sufficient treatment when given alone.

**(Choice C)** Active immunization with HBV is of some benefit but does not provide suitable protection alone in post-exposure cases. Fortunately, hepatitis B vaccination has now been included in the standard neonatal immunization schedule, and all newborns should receive three doses of the HBV vaccine.

### Educational Objective:

Newborns of mothers with active hepatitis B infection should be passively immunized at birth with hepatitis B immune globulin (HBIG) followed by active immunization with recombinant HBV vaccine.

Time Spent: 2 seconds

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