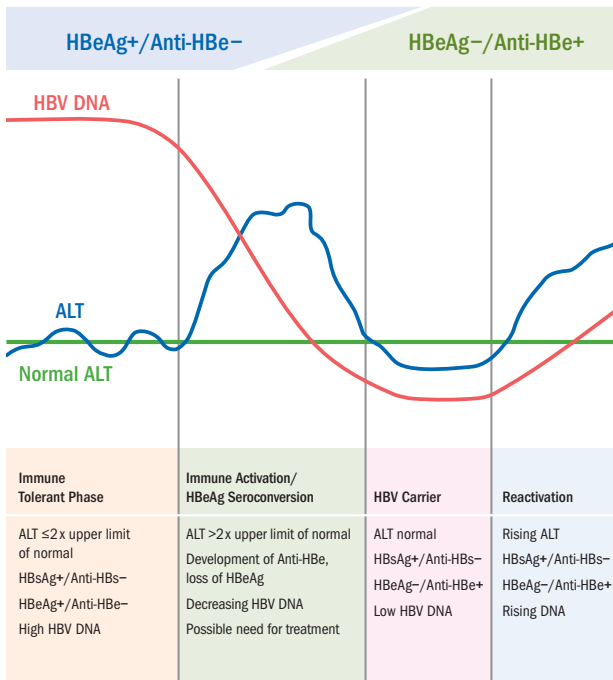


Natural History of Hepatitis B Infection



- Immune tolerant phase may last for less than 10 years or for more than 20 years
- 0.5% of “HBV carriers” annually will clear HBsAg, most of these will develop anti-HBs
- Up to 10% of inactive carriers may have reactivation of viral replication and hepatitis. These patients should be referred to Liver Clinic

Interpreting Hepatitis B Serology in Patients Older than 1 year**

HBsAg	Negative	Not infected
Anti-HBs	Positive	Immune to hepatitis B
HBsAg	Negative	Not infected
Anti-HBs	Negative	Not immune to hepatitis B
HBsAg	Positive	Active infection with hepatitis B
Anti-HBs	Negative	With normal ALT = immune tolerant phase of infection
HBeAg	Positive	With increased ALT = possible seroconversion or consider treatment
Anti-HBe	Negative	
HBsAg	Positive	With normal ALT = Hepatitis B “carrier”
Anti-HBs	Negative	Partial immune response to hepatitis B infection with HBeAg seroconversion
HBeAg	Negative	
Anti-HBe	Positive	
HBV DNA	$\geq 10^5$ iu/mL	High viral load Active replication of virus, expected in HBeAg + patients
HBV DNA	$\leq 10^4$ iu/mL	Low viral load Decreased viral replication, expected in HBeAg – patients

** In patients under 1 year of age, antibodies may be maternal. To verify infectious status, repeat full serology with HBV DNA between 12 and 18 months of age.

SickKids®

For more information please contact: 416-813-7270

Constance O'Connor, MN, Nurse Practitioner

Simon Ling, MBChB, Staff Gastroenterologist

Liver Clinic, Division of Gastroenterology,
Hepatology & Nutrition,
The Hospital for Sick Children,
Toronto, Ontario, Canada

Caring for the Child with Chronic Hepatitis B Infection

A Guide for Community Healthcare Providers



SickKids®

Children 0-5 years of age

Confirm chronic infection at 12-18 months of age with hepatitis B serology:

- HBsAg, Anti-HBs, HBeAg, Anti-HBe, HBV DNA

Action plan:

- All household members should be immunized against hepatitis B
- Patient should receive immunization against hepatitis A and all other recommended immunizations

Teaching for parents:

- Natural history of hepatitis B infection in childhood
- Blood and body fluid precautions
- Disclosure of hepatitis B status
- OTC and prescription medication

Monitoring:

- Blood work every 6 months: conjugated bilirubin, unconjugated bilirubin, ALT, AST, GGT, albumin, creatinine, CBC, differential
- Annual hepatitis B serology: HBsAg, HBeAg, anti-HBe, HBV DNA
- Liver ultrasound every 2 years

School-age Children

Action plan:

- All household members should be immunized against hepatitis B
- Patient should receive immunization against hepatitis A and all other recommended immunizations

Teaching for the child:

- General health: healthy diet, exercise
- Blood and body fluid precautions

Teaching for parents:

- Natural history of hepatitis B infection in childhood
- Blood and body fluid precautions
- Disclosure of hepatitis B status
- OTC and prescription medication

Monitoring:

- Blood work every 6 months: conjugated bilirubin, unconjugated bilirubin, ALT, AST, GGT, albumin, creatinine, CBC, differential
- Annual hepatitis B serology: HBsAg, HBeAg, anti-HBe, HBV DNA
- Liver ultrasound every 2 years

Adolescents and Young Adults

Action plan:

- All household members should be immunized against hepatitis B
- Patient should receive immunization against hepatitis A and all other recommended immunizations

Teaching for the adolescent:

- Natural history of hepatitis B infection
- General health: healthy diet, exercise
- Blood and body fluid precautions
- Disclosure of hepatitis B status
- Sexual transmission
- Alcohol
- OTC and prescription medication
- Illicit drugs
- Child-bearing
- Cancer risk and screening

Monitoring:

- Blood work every 6 months: conjugated bilirubin, unconjugated bilirubin, ALT, AST, GGT, albumin, creatinine, CBC, differential
- Annual hepatitis B serology: HBsAg, HBeAg, anti-HBe, HBV DNA
- Liver ultrasound every 2 years

* To refer to SickKids Liver Clinic use our on-line referral system at: www.sickkids.ca/referralsystem/default.asp

SickKids Liver Clinic is happy to accept referrals for all children with hepatitis B. Our program offers consultation and collaborative medical care, including treatment and patient and family education