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## Serologic Test for Viral Hepatitis, Part 2

Hepatitis B (HBV) is a parenterally transmitted viral infection of the liver. The incubation period is 6 weeks to 6 months. Approximately 5-10% of infected individuals become carriers. Distinguishing acute from chronic infection is possible with the use of serologic tests. Interpretation of these tests requires familiarity with the following serologic markers:

Table 1. Serologic markers for hepatitis B (HBV).

Marker	Abbreviation	Interpretation
Hepatitis B surface antigen	HBsAg	First marker to appear - as early as 1-2 weeks after infection and prior to clinical illness. Indicates infection with HBV, usually persists throughout clinical illness, <b>present in acute and chronic infection.</b>
Hepatitis B core antibody IgM class	IgM HBcAb (IgM anti-HBc)	Detectable during first 6 months after infection; presence of <b>this marker indicates acute infection.</b>
Hepatitis B core antibody IgG class	IgG HBcAb (IgG anti-HBc)	May be present in acute or chronic infection, persists indefinitely.
Hepatitis B surface antibody	HBsAb (anti-HBs)	Indicates recovery from HBV, noninfectivity, immunity. Develops following successful vaccination.
Hepatitis B e antigen	HBeAg	May be present in acute or chronic infection, high infectivity.
Hepatitis B e antibody	HBeAb (anti-HBe)	May be present in acute or chronic infection, low infectivity.

The above markers are present in different combinations during various stages of infection and convalescence. A simplified diagnostic approach in patients presenting with acute hepatitis is presented below (Table 2).

The presence of IgM anti-HBc establishes the diagnosis of acute HBV infection. **The presence of HBsAg alone is not sufficient for the diagnosis of acute infection.** IgG anti-HBc is reported simply as anti-HBc (or HBcAb) and may be present in acute or chronic infection as well as in patients who have recovered, developed immunity and are no longer infectious.

Table 2. Simplified diagnostic approach in patients presenting with acute hepatitis.

HBsAg	IgM anti-HAV	IgM anti-HBc	Diagnostic Conclusion
-	+	-	Acute hepatitis A
+ or -	-	+	Acute hepatitis B
+	-	-	Chronic hepatitis B
+ or -	+	+	Acute hepatitis A and B
+	+	-	Acute hepatitis A superimposed on chronic hepatitis B
-	-	-	Compatible with non-A, non-B hepatitis*

\* Follow-up in 6-12 months with hepatitis C antibody test.