

Hepatitis B virus infection

DIAGNOSING AN ACUTE VERSUS A CHRONIC INFECTION

Patient 1

Case history

- Loss of appetite
- Nausea
- Exhaustion
- Onset some weeks ago
- Unprotected sexual encounters



Billy Doe,
32-years-old

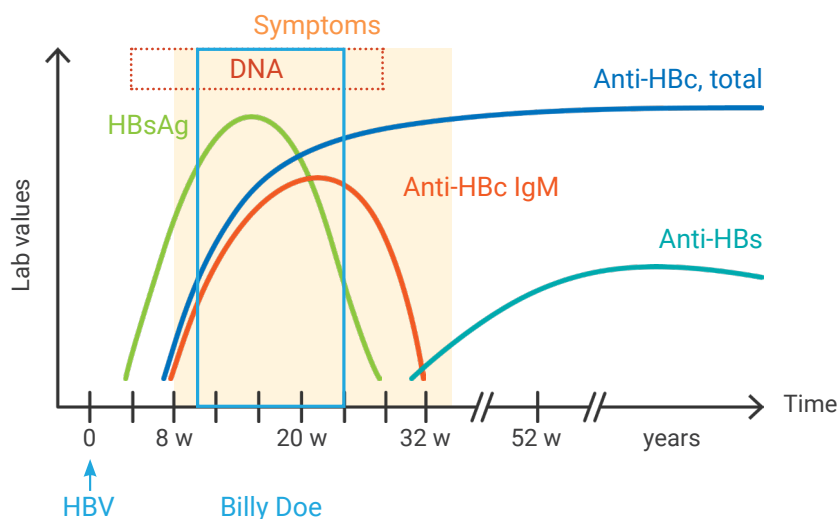
Laboratory report

ALT	1090 (5–35 IU/L)
Hepatitis B:	
HBsAg	+
Anti-HBc IgM	+
Anti-HBc, total	+
Anti-HBs	–
HBV DNA	300,000 IU/mL

Interpretation

Billy Doe suffers from the classic symptoms of hepatitis, supported by elevated ALT activity levels in his lab report. Billy's hepatitis B screening is positive: HBsAg and HBV DNA are positive, both indicating the presence of an active virus and thus an ongoing

infection. Anti-HBc IgM antibodies are positive, which indicates an acute status. Furthermore, anti-HBc, total (i.e., IgM+IgG) is positive and anti-HBs antibodies are not detectable.



Patient 2

Case history

- Fatigue
- Muscle pain
- Unknown onset
- Born and raised in Vietnam
- Mother died in a car accident when Bian was young



Bian Doe,
24-years-old

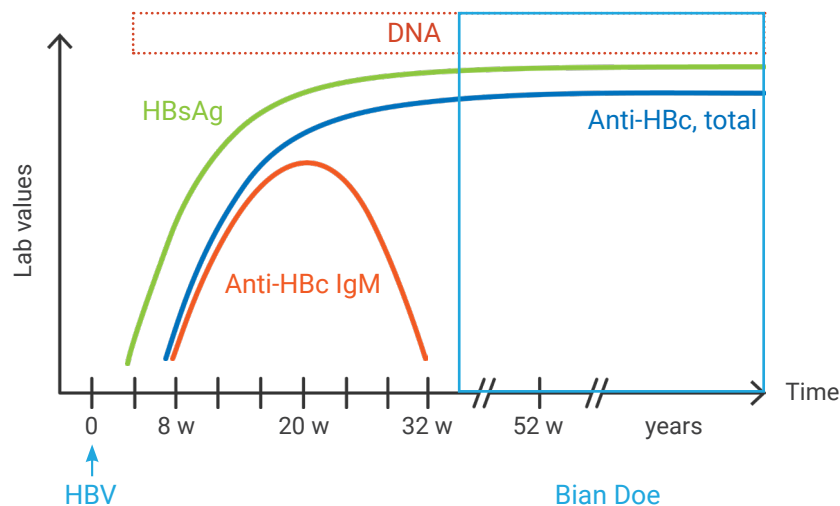
Laboratory report

ALT	85 (5–35 IU/L)
Hepatitis B:	
HBsAg	+
Anti-HBc IgM	–
Anti-HBc, total	+
Anti-HBs	–
HBV DNA	14,000 IU/mL

Interpretation

Bian Doe suffers from symptoms of chronic hepatitis. Her lab report shows elevated ALT activity levels as well as a positive hepatitis B screening. Her positive HBsAg, as well as her high viral load (HBV DNA) indicate an ongoing, active infection with HBV. Accordingly, anti-HBs is negative, indicating that

there has been no seroconversion yet. The negative anti-HBc IgM, together with the positive anti-HBc, total (IgM+IgG), show that her infection likely took place many weeks or even years ago. Bian's history and country of origin suggest that her infection occurred years ago, when she lived in Vietnam.



DIAGNOSIS

Billy Doe suffers from an acute hepatitis B infection.

Bian Doe suffers from a chronic hepatitis B infection.