Acute Hepatitis B

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INTRODUCTION

- During the **acute phase**, manifestations range from **subclinical** or anicteric hepatitis to icteric hepatitis and, in some cases, fulminant hepatitis

Clinical manifestations

- Approximately 70 percent of patients with acute hepatitis B virus (HBV) infection have subclinical or anicteric hepatitis, while 30 percent develop icteric hepatitis.

- The disease may be more severe in patients **coinfected** with **other hepatitis viruses** or with **underlying liver disease**

- Fulminant hepatic failure is **unusual**, occurring in approximately 0.1 to 0.5 percent of patients.

- Fulminant hepatitis B is believed to be due to massive immune-mediated lysis of infected hepatocytes. This explains why many patients with fulminant hepatitis B have **no evidence of HBV replication** at presentation

- The reasons why HBV has a fulminant course in some patients are not well-understood.

- A case control study evaluated risk factors for a fulminant course in an outbreak among injection drug users. Compared with control patients, case patients were more likely to have used acetaminophen during their illness (p = 0.08), used more alcohol and methamphetamine, and lost more weight in the **six months before illness**. Furthermore, all nine isolates were

- The method of acquiring HBV infection varies geographically.

- Perinatal transmission and occasionally horizontal transmission early in life are most common in high prevalence areas such as southeast Asia and China

- sexual contact and percutaneous transmission (eg, intravenous drug use) are most common in the United States, Canada, and western Europe

Epidemiology and modes of transmission of hepatitis B virus infection

	High	Intermediate	Low
Carrier rate	≥ 8%	2 to 7%	< 2%
Geographic distribution	Parts of sub-Saharan Africa (eg, Western Africa, South Sudan)	Mediterranean basin; Eastern Europe; Central Asia; Southeast Asia; China; Japan; parts of Latin and South America (eg, Peru, Colombia); Middle East	United States; Canada; Western Europe; Mexico; Australia; New Zealand
Predominant age at infection	Perinatal and early childhood	Early childhood	Adult
Predominant mode of infection	Mother to child; percutaneous	Percutaneous; sexual	Percutaneous; sexual

For updated information on the prevalence of chronic hepatitis B virus infection, refer to the United States Centers for Disease Control and Prevention and the World Health Organization websites.

- The incubation period lasts **1** to **4** months.
- A **serum sickness-like** syndrome may develop during the prodromal period, followed by constitutional symptoms, anorexia, nausea, jaundice, and right upper quadrant discomfort.
- The symptoms and jaundice generally **disappear** after **one to three months**, but some patients have **prolonged fatigue** even after normalization of serum aminotransferase concentrations.

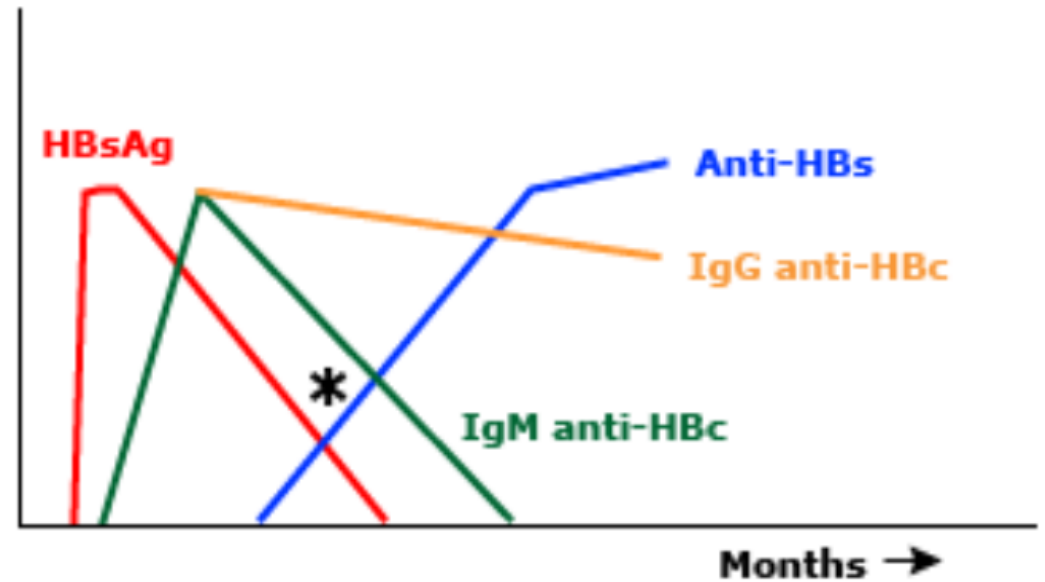
- Laboratory testing during the acute phase reveals elevations in the concentration of ALT and AST levels ; values up to 1000 to 2000 units/L are typically seen during the acute phase with **ALT** being higher than **AST**.

- The **serum bilirubin** concentration may be normal in patients with anicteric hepatitis.

- The **prothrombin time** is the **best indicator of prognosis.**

- In patients who recover, the normalization of serum aminotransferases usually occurs within **one to four months**. A persistent elevation of serum ALT for more than **six months** indicates a progression to **chronic hepatitis.**

Window period of acute HBV infection



Diagnostic tests to determine phase of acute or chronic hepatitis B virus infection [1]

HBsAg	HBeAg	IgM anti-HBc	Total anti-HBc*	Anti-HBs	Anti-HBe	HBV DNA	ALT¶	Interpretation
Acute HBV infection								
+	+	+	±			+ + +	Elevated	Early phase
		+	±			+	Elevated	Window phase
			+	+	+	±	Normal	Recovery phase

Outcome

- Among patients who recover from acute hepatitis B, traces of HBV are often detectable in the blood by PCR testing for many years, ***despite*** the presence of serum antibodies to hepatitis B surface antigen (anti-HBs) and HBV-specific cytotoxic T cells, which can be present at high levels.

- **HBV-specific cytotoxic T cells** may express activation markers, indicating recent contact with antigen in patients studied up to 23 years after clinical and serologic recovery.

- One study found that HBV DNA was detected in the liver tissues in 13 of 14 healthy liver transplant donors who were positive for hepatitis B core antibody (anti- HBc) and anti-HBs

- Persistent histologic abnormalities (including fibrosis and mild inflammation) were present for as long as **10 years** in another series focusing on nine patients who demonstrated a complete serologic recovery after acute infection.

- These observations suggest that complete eradication of HBV rarely occurs after recovery from acute HBV infection and that latent infection can maintain the T cell response for decades following clinical recovery, thereby keeping the virus under control

- . Although some studies suggest that ***liver damage*** may be present in patients with latent infection, it is not clear how common this is since these studies were based on very few patients. However, immunosuppression in such patients can lead to reactivation of the virus.

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- The rate of progression from acute to chronic hepatitis B in immunocompetent persons is determined primarily by the **age** at infection.

- The rate is approximately 90 percent for a perinatally acquired infection, 20 to 50 percent for infections between the age of **1** and **5** years, and less than 5 percent for an adult-acquired infection

Treatment

- Treatment for acute HBV is mainly supportive.
- The decision to hospitalize patients should be individualized.

- Coagulopathy
- deeply jaundiced
- Encephalopathic
- Older
- significant comorbidities
- cannot tolerate oral intake
- poor social support systems

- Whether patients should be treated with nucleos(t)ide analog therapy is unsettled since few studies have addressed the benefits of antiviral therapy during acute infection.

- We do not believe that all patients with acute HBV require antiviral treatment since the likelihood of fulminant hepatitis B is less than 1 percent, and in immunocompetent adults, the likelihood of progression to chronic HBV infection is less than 5 percent.

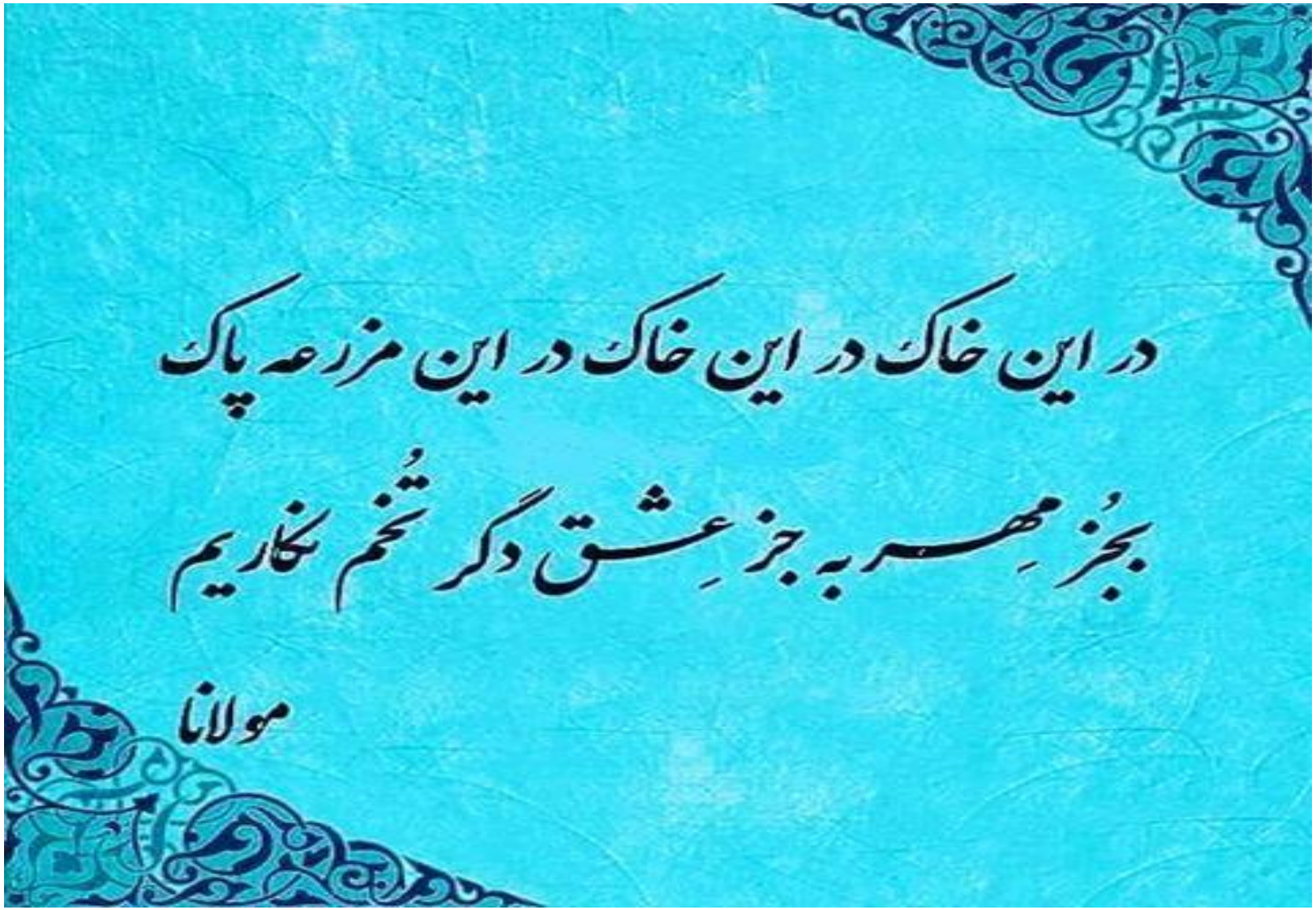
- **As a general rule**, we treat patients with a severe (such as those who develop a **coagulopathy [INR >1.5**]) or a protracted course (such as persistent symptoms or marked jaundice [bilirubin >10 mg/dL] for more than four weeks after presentation).

- We also suggest treating patients with fulminant hepatitis B to reduce the likelihood of reinfection post-liver transplant, those who are immunocompromised, have a **concomitant infection** with hepatitis C or D virus, have a preexisting liver disease, or are elderly.

- **Interferon should be avoided** because of the increased risk of *hepatic necroinflammation*.

- Entecavir, tenofovir, lamivudine, adefovir or telbivudine are acceptable options given as **monotherapy** as the duration of **treatment should be short.**

- However, in situations in which it is unclear if the patient has acute HBV or an acute exacerbation of chronic HBV, entecavir or tenofovir is preferred since these agents have a higher barrier to resistance. **Treatment can be stopped after confirmation (two consecutive tests four weeks apart)** that the patient has cleared HBsAg.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بجز مِهر به جز عِشق دگر تُخم نکاریم
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