Article type: Opinion

Home Page URL: https://www.alliedacademies.org/gastroenterology-and-digestive-diseases/

Hepatitis B reactivation in cancer patients undergoing immunotherapy: A clinical insight.

Roongruedee Maung*

Department of Medicine, Chulalongkorn University, Thailand

***Correspondence to:** Roongruedee Maung, Department of Medicine, Chulalongkorn University, Thailand. E-mail: Roonmaung.33@chula.ac.th

***Received:** 01-Apr-2025, Manuscript No. JGDD-25-167164; **Editor assigned:** 02-Apr-2025, Pre QC No. JGDD-25-167164 (PQ); **Reviewed:** 15-Apr-2025, QC No. JGDD-25-167164; **Revised:** 19-Apr-2025, Manuscript No. JGDD-25-167164 (R); **Published:** 26-Apr-2025, DOI: 10.35841/JGDD-10.2.251*

Introduction

Hepatitis B Virus (HBV) infection remains a global public health concern, with more than 250 million chronic carriers worldwide. In cancer patients, the risk of HBV reactivation becomes especially significant when receiving therapies that modulate immune responses. Traditionally, chemotherapy and targeted agents have been associated with HBV reactivation. However, recent studies suggest that Immune Checkpoint Inhibitors (ICIs) a revolutionary class of immunotherapies used in cancers such as melanoma, lung, and hepatocellular carcinoma can also trigger reactivation in patients with past or chronic HBV infection. This presents a major clinical challenge, as reactivation can lead to acute hepatitis, liver failure, treatment interruption, and even mortality. Understanding the mechanisms, risks, and prevention strategies is essential for oncologists and hepatologists managing this vulnerable population [1].

HBV reactivation occurs when viral replication increases suddenly in a host with prior exposure or latent infection, especially under immune suppression or immune modulation. This process is often defined in three phases. Increase in HBV DNA levels, sometimes after a long period of viral quiescence. Biochemical flare, with rising ALT/AST and evidence of liver injury.Clinical hepatitis, which can progress to fulminant hepatic failure.In patients with chronic HBV (HBsAg-positive), the virus is integrated into the host hepatocyte DNA and can persist for life. In resolved HBV (HBsAg-negative, anti-HBc-positive), viral covalently closed circular DNA (cccDNA) may remain dormant in the liver. Immunosuppression or immunomodulation disrupts this equilibrium. Checkpoint inhibitors, particularly PD-1/PD-L1 and CTLA-4 inhibitors, unleash T-cell responses by blocking negative immune regulators. Paradoxically, this immune activation can disrupt the delicate host-virus tolerance and allow viral replication or immune-mediated liver damage [2].

Duration of treatment prolonged exposure to immunotherapy correlates with risk accumulation.HBV reactivation during immunotherapy can range from asymptomatic elevation of liver enzymes to severe hepatitis with jaundice, coagulopathy, and liver failure. Symptoms may be masked or attributed to immune-related adverse events (irAEs), which complicates diagnosis.Sudden ALT/AST elevation in a patient with prior HBV exposure.Detection of rising HBV DNA titers. Seroconversion (e.g., reappearance of HBsAg in a previously resolved case)The American Association for the Study of Liver Diseases (AASLD) and other international guidelines recommend universal HBV screening in all patients before initiating cancer therapy, including immunotherapy. Recommended tests include [3].

Screening is especially vital in areas with intermediate to high HBV endemicity, such as East Asia, sub-Saharan Africa, and certain parts of Europe. For patients with chronic HBV (HBsAg-positive), prophylactic antiviral therapy is strongly recommended before starting ICIs. First-line agents. Prophylaxis should continue throughout immunotherapy and for at least 6–12 months after treatment cessation. Patients with resolved HBV (HBsAg-negative, anti-HBc-positive) may not need prophylaxis but should undergo **close monitoring** of ALT levels and HBV DNA every 1–3 months.Initiate or intensify antiviral therapy temporarily hold ICIs in cases of severe hepatitis.

Citation: Maung R. Hepatitis B reactivation in cancer patients undergoing immunotherapy: A clinical insight. J Gastroenterology Dig Dis. 2025;10(2):251

Consider multidisciplinary consultation with hepatology [4].

Recent cohort studies from Asia and Europe have reported reactivation rates between 5–25% in HBsAg-positive patients receiving immunotherapy. In most cases, antiviral prophylaxis was effective in preventing severe liver complications. However, delayed initiation or missed diagnoses contributed to poorer outcomes.A 2022 study in patients with hepatocellular carcinoma treated with atezolizumab plus bevacizumab showed that adequate HBV control correlated with better cancer outcomes, underscoring the dual importance of viral management and oncologic efficacy [5].

Conclusion

HBV reactivation is a clinically significant and potentially life-threatening complication in cancer patients undergoing immunotherapy. With the expanding use of ICIs in global oncology practice, screening, risk stratification, and antiviral prophylaxis must be integrated into standard care pathways. Multidisciplinary coordination between oncologists, hepatologists, and infectious disease specialists is essential to balance cancer control with liver safety. Continued research is needed to clarify optimal prophylaxis duration, cost-effectiveness of universal treatment, and long-term outcomes in HBV-infected patients on immunotherapy.

References

1. Uchino S. Acute renal failure in critically ill patients: a multinational, multicenter study. JAMA. 2005;294:813-8.
2. Clark WR, Hamburger RJ, Lysaght MJ. Effect of membrane composition and structure on solute removal and biocompatibility in hemodialysis. Kidney Int. 1999;56(6):2005-15.
3. Lee K, Jeong JH, Mun CH, et al. Convection enhanced high-flux hemodialysis. Artif Organs. 2007 (8):653-8.
4. Schetz M. Anticoagulation for continuous renal replacement therapy. Curr Opin Anaesthesiol. 2001;14(2):143-9.
5. Damus PS, Hicks M, Rosenberg RD. Anticoagulant action of heparin. Nature. 1973;246(5432):355-7.

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