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# Reactivation of hepatitis B virus replication due to cytotoxic therapy: a five-year prospective study

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ABSTRACT

**Background and aims.** In hepatitis B virus (HBV) carriers receiving chemotherapy, the risk of reactivation is high, particularly if rituximab is given alone or in combination with steroids. The aim of this study was to assess the incidence, prevalence, and clinical course of HBV infection in a cohort of patients with hematological malignancies receiving cytotoxic therapy as well as to propose a strategy for managing HBV reactivation.

**Methods.** This is a prospective observational study. All consecutive patients with hematological malignancies receiving intravenous cytotoxic chemotherapy between October 2005 and June 2010 and followed up for at least six months were enrolled in the study. Viral hepatitis markers and liver function indexes were monitored prospectively.

**Results.** We enrolled 478 patients, including 263 males (55%) and 465 (97.3%) Italians. Non-Hodgkin's lymphoma was the most frequent diagnosis (66%). At least one HBV marker was positive in 96 patients (20%): 21 (4.4%) patients were HBsAg positive, 17 (3.5%) were anti-HBc positive, and 58 (12.1%) were anti-HBc/anti-HBs positive. All but one HBsAg-positive patient received therapy with nucleoside/nucleotide analogs prior to chemotherapy. All but three reached complete virological suppression at six months from the start of treatment. Of the 17 HBsAg-negative/anti-HBc-positive patients, three (18%) had reactivation with seroreversion. All three obtained viral suppression with adefovir. Regarding the 58 anti-HBc/anti-HBs-positive patients, two (3.4%) experienced seroreversion and were treated successfully with nucleoside analogs; both were taking rituximab. No severe ALT flares were observed during or after antiviral therapy.

**Conclusion.** Our data suggest that pre-treatment screening of patients at risk of viral reactivation yields benefit and therefore should be practiced by clinicians treating patients with malignancies.

***Key words:*** HBV, reactivation, hematological malignancies, rituximab.

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