Incidence and characteristics of HBV reactivation in hematological malignant patients in south Egypt


Abstract:

AIM: To investigate characteristics of hepatitis B virus (HBV) implicated in HBV reactivation in patients with hematological malignancies receiving immunosuppressive therapy. METHODS: Serum samples were collected from 53 patients with hematological malignancies negative for hepatitis B surface antigen (HBsAg) before the start of and throughout the chemotherapy course. HBV reactivation was diagnosed when the HBsAg status changed from negative to positive after the initiation of chemotherapy and/or when HBV DNA was detected by realtime detection polymerase chain reaction (RTD-PCR). For detecting the serological markers of HBV infection, HBsAg as well as antibodies to the core antigen (anti- HBc) and to the surface antigen were measured in the sera by CEIA. Nucleic acids were extracted from sera, and HBV DNA sequences spanning the S gene were amplified by RTD-PCR. The extracted DNA was further subjected to PCR to amplify the complete genome as well as the specific genomic sequences bearing the enhancer II/core promoter/pre-core/core regions (nt 1628-2364). Amplicons were sequenced directly. RESULTS: Thirty-five (66%) of the 53 HBsAg-negative patients were found to be negative serologically for anti- HBc, and the remaining 18 (34%) patients were positive for anti-HBc. Five of the 53 (9.4%) patients with hematologic malignancies experienced HBV reactivation. Genotype D1 was detected in all five patients. Four types of mutant strains were detected in the S gene product of HBV strains and were isolated from 3 patients with HBV reactivation: T/S120, L143, and I126. HBV DNA was detected in the pretreatment HBsAg-negative samples in one of the five patients with HBV reactivation. In this patient, sequences encompassing the HBV full genome obtained from sera before the start of chemotherapy and at the time of de novo HBV hepatitis were detected and it showed 100% homology. Furthermore, in the phylogenetic tree, the sequences were clustered together, thereby indicating that this patient developed reactivation from an occult HBV infection. CONCLUSION: Past infection with HBV is a risk factor for HBV reactivation in Egypt. Mandatory anti-HBc BRIEF ARTICLE Online Submissions: http://www.wjgnet.com/esps/ wjg@wjgnet.com doi:10.3748/wjg.v19.i37.6214 World J Gastroenterol 2013 October 7; 19(37): 6214-6220 ISSN 1007-9327 (print) ISSN 2219-2840 (online) © 2013 Baishideng. All rights reserved. screening prior to chemotherapy in patients with hematological malignancies is recommended.

Keywords:

Hepatitis B virus; Occult infection; Reactivation; Hepatitis B surface antigen

Published In:

World J Gastroenterol , 7 -19(37) , 6214-6220