

Molecular Epidemiological Study of Hepatitis Viruses in Ismailia, Egypt

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Abstract

The hepatitis virus is hyperendemic in Egypt, western Asia and Africa. In Egypt, most studies have been carried out in the regions of the upper and lower Nile Delta, and so little is known about other parts of the country. Our project aimed to clarify the carrier rate of various hepatitis viruses in the northeastern province of Ismailia. A total of 214 patients with elevated liver enzymes were enrolled in this study. Sera were collected in Ismailia hospital. We conducted a serological and molecular-based survey of hepatitis viruses, including their genetic variability and genotype-related differences. There were 10 (4.7%) cases positive for hepatitis B surface antigen (HBsAg), and 156 (72.9%) positive for anti-hepatitis C virus antibody (HCV-Ab). Phylogenetic analysis showed that genotype C of HBV and genotype 4a of HCV were prevalent. Hepatitis D virus RNA was not detected in HBsAg carriers. Although anti-hepatitis E virus IgM antibody was positive in 5 cases (2.3%), no case was positive for its RNA. Among 54 cases negative for HBsAg and HCVAb, HBV-DNA was detected in 35 cases (65%). Our results revealed that HBV and HCV, including occult HBV infection, are widespread and related to liver diseases in Ismailia province, Egypt.