

Epidemiology of HBV, HCV, and HDV Infections in Mongolia

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Introduction

Mongolia has one of the highest prevalences of hepatitis B, C and D virus infection and consequently, leading mortality rates of liver cirrhosis and hepatocellular carcinoma (HCC) in the world. No random sampled population studies have been carried out in Mongolia in recent years. In order to formulate policies and strategies in combating viral hepatitis, it is imperative to assess the current situation. Therefore, the present study was conducted to survey seroprevalence of HCV in apparently healthy Mongolian adults aged above 20 years.

Methods

The study was approved by the Ethics Committee at the Health Sciences University of Mongolia and the Health Ethics Committee of the Ministry of Health of Mongolia. Study subjects were chosen based on the three-stage cluster sampling method. A total of 1,158 subjects were enrolled in the study. All participants were on-site tested for anti-HCV and HBsAg using rapid tests (CTK Biotech, San-Diego, US). Also, 5-10ml of blood was drawn from the antecubital vein and sera were separated following a standard protocol. Serum specimens were tested for anti-HCV, HBsAg and anti-HDV by enzyme-linked immunosorbent assays (ELISA) and real-time PCR. All subjects answered a detailed historical survey for risk factor analysis using a specifically designed questionnaire.

Results

In this study, total of 1,158 subjects were enrolled including 599 (43.1%) men and 659 (56.9%) female. The overall prevalence of anti-HCV and HBsAg among study subjects were 11.1% (128/1158) and 10.6% (123/1158) respectively. Higher percentages of male subjects (11.8% of male) tested positive for HBsAg while more female subjects (12.6% of female) were tested positive for anti-HCV. Further 67.5% (83/123) of all HBsAg positive subjects were tested positive for anti-HDV. Results of multivariate regression analysis for potential risk factors show that history of blood transfusion 1.8 times (OR=1.563 95%CI 1.060-2.305 p=0.024), acupuncture 1.3 times (OR=1.303 95%CI 1.110-1.531 p=0.001), letting blood treatment 1.8 times (OR=1.878 95%CI 1.427-2.471 p=0.0001) and surgical procedure (OR=1.945 95% CI 1.278-2.451 p=0.0001) were associated with significant risk for transmission of HCV infection. Hepatitis B infection risks were increased with dental treatment 4.2 times (OR=4.293 95%CI 1.158-15.912 p=0.029) and with hemodialysis 5.1 times (OR=5.078 95%CI 1.199-21.511 p=0.027).

Conclusion

It is estimated that currently in Mongolia live over 300 thousand people (over 20yrs age) infected with HBV, HCV and HBV/HDV. The risk factor analysis shows that the nosocomial infection risk is still high.