



## **Prevalence of HBV, HCV and HIV in Inpatients of a Mental Health Hospital in Turkey, 2011-2013**

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**(Received 18 Apr 2015; accepted 27 Apr 2015)**

### **Dear Editor-in-Chief**

Hepatitis B virus (HBV), hepatitis C virus (HCV) and human immunodeficiency virus (HIV) infections are considered major health problems worldwide. Approximately 2 billion people have been infected with HBV (1). About 130-170 million people are infected with HCV, which causes over 350,000 deaths per year (2). The estimated number of persons living with HIV in the world was approximately 35.3 million at the end of 2012 (3). Countries in Southern and Eastern Europe, South and Central America, Central Asia and the Middle East have medium endemicity profiles for hepatitis B, and Turkey is classified as a country of intermediate endemicity (4). The mean frequency of HCV infection in the world is about 3%. The rate of anti-HCV in developed countries ranges between 1% and 2%, and Turkey is classified as a medium (1-2%) prevalence country (5). According to the records of Turkish Ministry of Health, 5224 HIV cases were reported between 1985 (the first reported HIV case) and 2011 years (6).

There is evidence that patients with mental illnesses are at increased risk for HIV, hepatitis B and hepatitis C infections compared the general population. In general, psychiatric patients have less knowledge about transmission of infectious diseases and protective measures. Additionally, they have risky sexual behavior and substandard living or hospitalization conditions. These may be factors increasing the risk of transmission of these

infections among psychiatric patients (7). Determining the prevalence of HBV, HCV and HIV in psychiatric patients has a significant role for designing the strategies to control the disease. The prevalence of these infections among psychiatric patients has not been clearly established, and data from the developing world is greatly lack.

This study was carried out to determine the prevalence of HBV, HCV and HIV infections among psychiatric patients treated in the Mental Health Hospital in Elazig, Turkey. The patients treated at the Drug Addiction Treatment Centre in the hospital were excluded in the study. This study was conducted in 2011-2013. The most recent results of patient who admitted more than once were used. The study was approved by the Firat University Ethical Committee. Blood samples obtained from the patients were analyzed in the Clinical Laboratory of the hospital. HBsAg, anti-HBs, anti-HCV (GBC, Taiwan, R.O.C.) and anti-HIV 1/2 (BioMerieux, Marcy-l'Etoile, France) tests were performed on the Triturus system (Grifols, Parets del Valles, Spain) with ELISA technique.

Statistical analyses were performed using the SSPS 21 (SPSS Inc, Chicago, IL, USA). The Student's *t*-test, the Chi-square and the one-way ANOVA tests were used in the study. *P* < 0.05 was considered statistically significant.

Overall, 5227 patients in the mental health hospital were screened for HBsAg, anti-HBs, anti-HCV

and anti-HIV. There were 4094 (78.3%) males and 1133 (21.7%) females, with a mean age of  $35.51 \pm 13.23$  years (range 11-95 years). Overall seroprevalence was 4.08% for HBsAg, 42.19% for anti-HBs and 0.69% for anti-HCV. None of the patients was positive for anti-HIV. In the only five patients (0.1%) were detected that HBsAg and anti-HCV were concurrently positive. Additionally, 17 patients who anti-HCV was positive had positive anti-HBs. The frequency of HBsAg among genders was significantly higher in the males (4.54%;  $P: 0.001$ ). There was no significant difference in the prevalence of HBsAg among years. The seroprevalence rate of anti-HBs among genders was no significant difference. The seroprevalence rates of anti-HBs showed an increasing trend between 2011 and 2013 ( $P < 0.001$ ). All of the anti-HCV positive patients were male. There was no significant difference in the prevalence of anti-HCV over the period of three years.

Psychiatric patients have less awareness about transmission of infectious diseases and protective measures. In addition, risky sexual behaviors, low quality of life, hospitalization conditions or duration can contribute to an increase in rates of infections. The seropositivity rate of HBsAg among psychiatric patients varies widely by geographical region in the world. While psychiatric patients in some countries such as the United States (23.4%) and Spain (8.8%) have high seropositivity rates of HBsAg; in the countries such as Greece (2%) and Iran (1.2%) have low seropositivity rates (7-10). The observed seroprevalence rate in our study population (4.08%) was less than that of the general Turkish population. In our hospital, the continuous surveillance is been performed, education of the psychiatric patients regarding transmission of blood-borne infections, improving of hospital conditions for patients, which could be a plausible explanation for the low seroprevalence rate of HBsAg in our study population. Immunization, continuous surveillance, education of the psychiatric patients and decrease the duration of hospitalization may be potentially beneficial in decreasing the rate of infections.

Reported data on the prevalence of HCV infection in the psychiatric population are highly

variable in diverse geographical regions worldwide. The rates of HCV among these patients have been reported as 9% in Greece, 1.8% in Iran and 19.6% in the United States (7, 8, 10). Elevated infection rates in the psychiatric population may be due to the poverty, risky environments, risky behaviors, overall poor health and medical care in these individuals (7, 8). Our rates were lower than those found among psychiatric patients in other countries. Low anti-HCV rate in this study may be explained with the surveillance of the patients with risky behaviors, education of the psychiatric patients and improving hospital conditions for patients in our hospital. Additionally, HCV prevalence in the general population in Turkey is already low.

This study showed that the prevalence of HBV, HCV and HIV among psychiatric patients were no higher than those in the general population.

## Acknowledgements

The authors declare that there is no conflict of interests.

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