

CHARACTERISTICS OF HEPATITIS C AND HEPATITIS B VIRUSES INFECTION

PRANVERA DRAGUSHA¹
ERIKA EBRANATI²
GIANGUGLIELMO ZEHENDER²
EDI DRAGUSHA¹
CARLA VEO²
SILVA BINO³
ZHANETA ABAZAJ⁴
IRENA SEFERI⁴
RENATA SHKJEZI¹

¹Faculty of Medicine, Catholic University "Our Lady of Good Counsel", Tirana, Albania

²"L. Sacco" Department of Biomedical and Clinical Sciences, University of Milan, Italy

³Control of Infectious Diseases Department, Institute of Public Health, Tirana, Albania

⁴Laboratory of Blood Control for Infectious Agents, National Blood Transfusion Centre, Tirana, Albania

Abstract

Hepatitis B virus (HBV) and hepatitis C virus (HCV) are both hepatotropic viruses and they share same modes of transmission. Recently, Albania is a country with intermediate prevalence of viral hepatitis B and a not precisely known prevalence of HCV even some values reported by few studies. We performed this study to furnish more information about the situation of coinfection by these viruses in Albania.

We included 179 subjects with HCV Ab positive with a median age of 32 years old during a screening process performed in general population and in IDU subjects between the period 2004-2014 from the Public Health Institute and the National Blood Transfusion Centre in Tirana, Albania. All the population in this study was analyzed for the presence of HBsAg.

The prevalence of HBsAg among the HCV positive subjects results 5,5% (10/179), with a predominance of the coinfection in males with 70% (7/10) respect to 30% (3/10) of females. Only 50% (5/10) of coinfecting subjects corresponded with IDU group, while the rest of population is classified in general one. The major part of coinfecting subjects live in capital city of Albania in Tirana 60% (6/10).

The prevalence of HBV/HCV coinfection is at high level taking also in consideration the endemicity for HBV infection of this country. Although few numbers of subjects with coinfections included in this study, we may suggest that transmission of both infections among IDU subjects may have an very important impact to the transmission of both infections in the category with specified genotype species.

Keywords: Hepatitis B Virus, Hepatitis C Virus, IDU, Albania

INTRODUCTION

In South-eastern Europe, similar to other post-socialist regions on the continent, the prevalence of hepatitis C is increasing. Approximately 350 million people are infected with HBV worldwide, and the World Health Organization (WHO) estimates that approximately 170 million people are infected with HCV. Both of these viruses are the most causes of liver disease worldwide and both can be transmitted parenterally, sexually and perinatally. Specially, injection drug users (IDU) are exposed to a high risk of this blood-borne infection. Hepatitis B virus (HBV) and hepatitis C virus (HCV) are both hepatotropic viruses and they share same modes of transmission, so coinfection with two viruses is not uncommon, especially in areas with a high prevalence of HBV. The coinfection HCV/HBV represents significant public health issues globally. The worldwide prevalence of HBV/HCV coinfection is unknown and might be underestimated with the phenomenon of silent (occult) HBV infection (negative hepatitis B surface antigen [HBsAg] but detectable serum HBV DNA) in patients with chronic HCV infection. Patients with dual HBV and HCV infection have more severe liver disease and an increased risk for progression to hepatocellular carcinoma (HCC). Coinfected patients represent a diverse group with various patterns of viral replication and great variations of immune profiles (1, 2, 3).

At the WHO's 63rd World Health Assembly in May 2010, a resolution was passed to establish "goals and strategies for disease control, increasing education and promoting screening and treatment" of people infected with HBV and HCV. The WHO argues that IDUs (Intravenous Drug Users) are a particularly important group that need to be specifically targeted for prevention and treatment of HBV and HCV. For such efforts to be appropriately scaled and targeted, policymakers and healthcare professionals need accurate and detailed data on the size of the population concerned, as has been undertaken for HIV (4)

In a large multicenter Italian study (5), the prevalence and risk factors for dual HBV/HCV coinfection have been assessed. Anti-HCV was present in 7% of chronic HBV carriers and about 40% of these patients also had detectable HCV RNA. In another prospective American study the prevalence of HBV coinfection in a total of 1257 patients with chronic HCV infection was 5.8% (6).

Unfortunately there are limited data about the prevalence of the coinfection HBV/HCV in countries nearby Albania. The prevalence of HCV infection in Albania is about 3% in a screening study that enrolled 196 Albanian adults (7) and is about 0.6% between health care workers (8). Recently, Albania is a country with intermediate prevalence of viral hepatitis B and a not precisely known prevalence of HCV even some values reported by few publishes.

AIM OF THIS STUDY

We performed this study to furnish more information about the situation of coinfection by Hepatitis C and B viruses in Albania (9).

MATERIAL AND METHODS

In this study we included the data of 179 subjects that resulted positive for HCV- Ab. The data were collected during the period 2004-2014 from the Public Health Institute and the National Blood Transfusion Centre in Tirana, Albania. It was a screening process performed in general population and among IDU subjects. All the population in this study was analyzed for the presence of HCV- Ab, HBsAg, HIV 1 and HIV 2. They all resulted negative for HIV 1 and HIV 2 and were all positive for HCV-Ab. The tests were performed with ELISA method, third generation (ABBOTT).

Statistical analyses were done with Chi-square test and Fisher test, performed by using the SPSS 18. The values of $p < 0.003$ were considered statistically significant for the test.

RESULTS

The prevalence of HBsAg among the HCV positive subjects results 5,5% (10/179) (Figure 1), with a predominance of the coinfection in males with 70% (7/10) respect to 30% (3/10) of females (Figure 2). 50% (5/10) of coinfectected subjects corresponded with IDU group, while the other 50% of population is classified in general one (Figure 3). The major part of coinfectected subjects live in capital city of Albania in Tirana 60% (6/10).

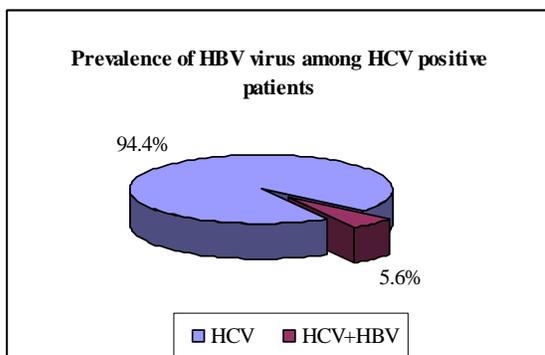


Figure 1. Prevalence of HBV virus among HCV positive patients

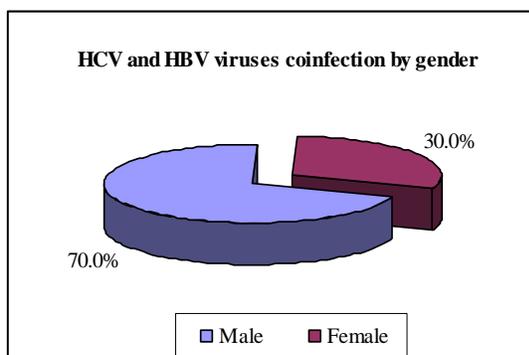


Figure 2. HCV and HBV viruses coinfection by gender

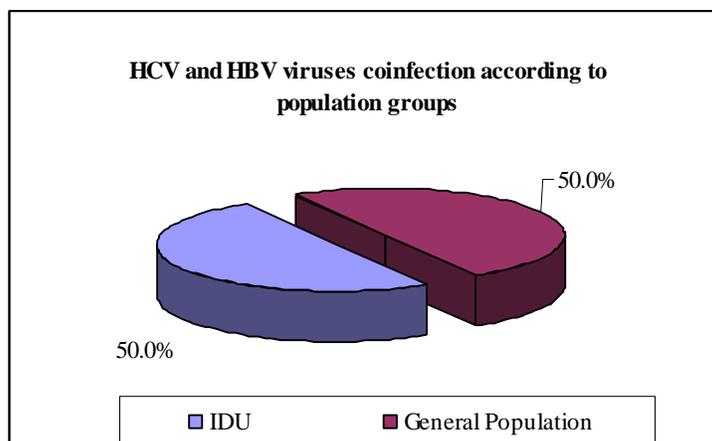


Figure 3. HCV and HBV viruses coinfection according to population groups

DISCUSSIONS

The prevalence of HBV/HCV coinfection is at high level taking also in consideration the endemicity for HBV infection of this country, despite the fact that since 1995, in Albania was introduced the obligatory vaccination of newborn children against HBV into the National Immunization Program (10).

According the Global System review, the prevalence of HCV markers varies among IDUs in different countries, with midpoint reports ranged from 9.8-97% (11, 12).

Meanwhile, there's still lack of information about real situation of HCV infection epidemiology in Albania, while the majority of results derived by some studies are unpublished. Although few numbers of subjects with coinfections included in this study, we may suggest that transmission of both infections among IDU subjects may have an very important impact to the transmission of both infections in the category with specified genotype species.

CONCLUSIONS

Health system in Albania must reinforce and improve actual screening protocols used for the detection of both these infections. Together with other transmission preventive measures, it'll contribute in the decline of endemia level of such viral hepatitis infections in this country in the future

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