

Prevalence of Hepatitis B and C in dialysis: a 4-year review in Albania

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Abstract: This study aimed to investigate the epidemiological and clinical features of HCV and HBV infections in one center of HD in Tirana. Ninety-one end-stage renal disease (ESRD) patients on maintenance HD from one of the HD-centers in Tirana (34 female, 57 male, mean age 50,8 years (22–70) were included in this study. Data from databank of the National Blood Bank in Albania. Clinical data such as age, sex, HBsAg and anti-HCV antibody and primary causes of ESKD were examined. Serological markers for HBV and HCV were determined with immunoenzymatic assay (ELISA). The T-test and χ^2 test were used to analyze the significance of the results. Among our HD patients HBsAg and anti-HCV antibody prevalence rate was 14%, respectively 24%. Chronic nephritis was a more frequent cause of ESKD among our HD patients. HBV and HCV prevalence in our HD patients is still high. These data emphasize the need for stricter adherence to infection control, barrier precaution and preventive behaviors with all patients.

Introduction

Hemodialysis (HD) patients are at high risk for viral hepatitis infections due to the high number of blood transfusion sessions, prolonged vascular access and the potential for exposure to infected patients and contaminated equipment [1, 2].

The prevalence of HCV antibodies in nephrology units is high and has been reported to range from 5 to 54% [3]. HBV infection is less prevalent than HCV in HD units [4]. The rate of serum HBsAg seropositivity on maintenance HD in the developed world is currently low (0–10%) but outbreaks of acute HBV infection continue to occur in this setting.

The prevalence of HBV infection within dialysis units in developing countries appears higher (2–20%) based on relatively several reports [5].

The aim of the present study was to investigate the epidemiological and clinical features of HCV and HBV infections.

Materials and Methods

Clinical and epidemiological data were obtained from January 2010 to December 2013. Data are collected from databank of the National Blood Bank in Albania. Clinical data such as age, sex, HBsAg and anti-HCV antibody and primary cause of ESKD were examined.

Serological testing for HBV surface antigen and antibodies to HCV was performed using with immunoenzymatic assay (ELISA).

The T-test and χ^2 test were used to analyze the significance of the results.

Results

From 91 patients 34 (37%) of them were female and 57 (63%) were male, and the age ranged from 22–70 years with mean age 50.8 years (Table 1).

Table 1. The number and sex of tested patients in Hemodialysis Unit

Sex	N	%
M	57	63
F	34	37
Total	91	

The major primary renal diseases in the end stage of kidney disease (ESKD) patients included chronic nephritis (23, 2%), diabetes mellitus (19,2%), hypertension (13,2%), urologic diseases (7,3%), cystic renal diseases (6,1%), and others (6%). There were 25% (22 patients) with unknown etiology (Figure 1).

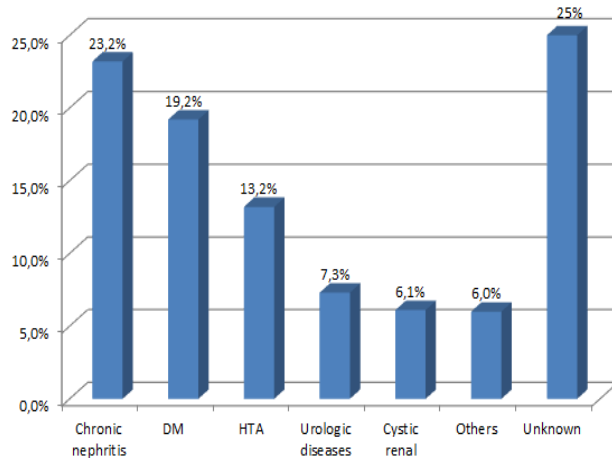


Figure 1. Etiology of prevalent regular HD patients

More than 90,1% of patients were between age 30 and 70 years old whereas only 9,9% of them were younger than 30 year (Figure 2).

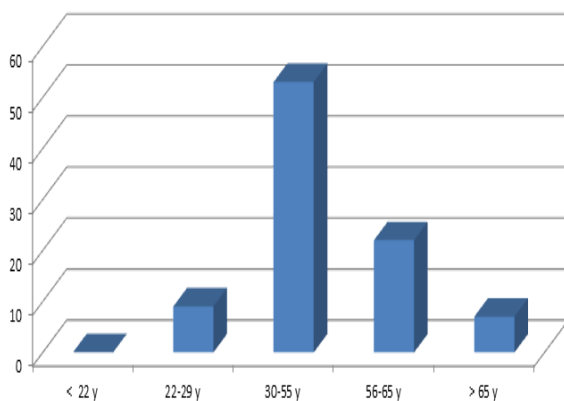


Figure 2. Age distribution of prevalent regular HD patients

In this study, 13 patients (14%) were HBsAg positive, and 22 of them (24%) were anti HCV positive (Figure 3).

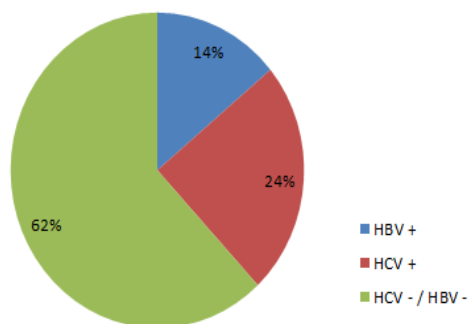


Figure 3. HBV and HCV of prevalent regular patients HD patients

Discussion

In patients on maintenance HD, the risk of hepatitis is still a serious problem despite the availability of serological tests and vaccines for hepatitis B virus infection and universal precaution standards and infection control measures. Available data suggest that HCV has become the most common cause of acute hepatitis in dialysis patients and dialysis staff members, following the implementation of infection control measures for HBV [6]. In our study, the prevalence of HBsAg was 14%.

Results of the examination which were done with 31 HD patients during first six months of 2010 showed that prevalence of anti HCV antibodies and HBsAg were 35.78%, respectively 23,21%. This study showed that duration of dialysis and number of transfusions are risk factors for development of HBV and HCV infection ($p < 0, 05$) [7].

The results of our last study demonstrate a decrease in prevalence of HBV positive HD patients during from 23 to 14% over three years. This decrease of HBV infection in dialysis patients over the years despite implementation of universal precaution is a result of advent of recombinant human erythropoietin and HBV vaccination in last years. This prevalence is higher than in USA, Croatia, Japan, Casablanca, Iran, Jordan, Kenya, Saudi Arabia, Hong Kong and lower than India, Taiwan, Romania, Greece, Spain, Turkey and Brazil [8-23].

The HBV prevalence among the blood donors is 5,1%. The HCV prevalence among the blood donors is 0,6%, compared to other European countries this level of prevalence is relatively low [24]. HCV prevalence in HD varies geographically, both within and between countries [26].

The reported anti-HCV seropositivity ranges from low (1.9%) in the Slovenia [27] to high (80%) in Senegal [28]. HCV seroprevalence in the HD population was 59% in Bosnia and Herzegovina, 6.8% in Belgium, 16.3% in France, 6.1% in Germany, 10%–29% in Greece, 22.5%–32.1% in Italy, 3.4% in the Netherlands, 11% in Sweden, 7%–23.3% in the USA, 4% in the UK, etc. [29-47].

The prevalence of HCV among our HD patients is 43%, compared with above mentioned study [7] there is not a decrease in prevalence of HCV in our HD patients over last three years. In our opinion environment condition in our hemodialysis units are responsible for high prevalence of HCV in our HD patients.

Conclusion

In summary, the prevalence of HBV and HCV in our HD patients is still high. These data emphasize the need for stricter adherence to infection control, barrier precaution and preventive behaviors with all patients.

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Biography

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