RELATIONSHIP BETWEEN HEPATITIS B AND C VIRUS PREVALENCE AND RISK FACTORS

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INTRODUCTION

Hepatitis C virus (HCV) infection is one of the main public health problems in the world. The prevalence of HCV is estimated by OMS epidemiologists at about 300 million people in the world. HCV is the main cause of parenterally transmitted non-A, non-B hepatitis. The main feature is the steady prevalence of the disease, silent from clinical point of view, having obvious tendency towards chronicity. The present study has as its main purpose the disease. At the same time, the way by which the disease is transferred and the evolution and the prognosis of the disease are important factors for the future. The aim of this study was to assess the prevalence of hepatitis C and B virus infection and to identify the associated risk factors of viral hepatitis. In our experiments we use as materials 107 patients, 48 men and 59 women, aged from 7 to 67 years old. The maximum incidence of HBV and HCV hepatitis was observed at patients aged between 40 to 60 and especially at people in urban areas.

MATERIALS AND METHODS

We carried out a retrospective study in which was included both cases of hepatitis C and B virus infection. The data was collected from the patients who were admitted in the Infectious Diseases Clinic of the Victor Babes Clinic Hospital Timisoara, between 2000-2005, as well as patients diagnosed by the Pathological Anatomy Service at the Infectious Diseases Hospital Craiova, between 2000-2003. Altogether we studied 107 cases, 48 men and 59 women, aged between 7 and 67. All cases were investigated from histopathological and/ or serological points of view, thus being diagnosed with HBV and HCV infection. With a view to assess possible risk factors for HBV and HCV infection, the patients were questioned about blood transfusion histories, surgical and endoscopic procedures, dialysis, use of endovenous illicit drugs, acupuncture treatment, use of alcohol or tobacco. The data of interest referring to parameters taken into consideration by us- such as sex, smoking, alcohol consumption - were selected and afterwards processed into statistics.

Abstract: Hepatitis C virus (HCV) and hepatitis B virus (HBV) are major causes for liver disease worldwide and potential causes for substantial morbidity and mortality in the future. The aim of this study was to assess the prevalence of hepatitis C and B virus infection and to identify the associated risk factors of viral hepatitis. In our experiments we use as materials 107 patients, 48 men and 59 women, aged from 7 to 67 years old. The maximum incidence of HBV and HCV hepatitis was observed at patients aged between 40 to 60 and especially at people in urban areas. The number of cases with HCV was twice higher at men than at women, while for HBV the incidence was higher for men than for women. Risk factors for transmission of HBV and HCV were medical procedures in the high-risk group, while vertical or sexual transmission belongs to the low-risk patient group. In conclusion, this study demonstrates that the prevalence of HBV and HCV infection is high, thus asepsis and antisepsis measures should be strictly followed.

Keywords: hepatitis C virus, hepatitis B virus, prevalence, risk factors
RESULTS

There were altogether 107 cases of patients with HCV under study and they grouped into two lots: lot A, made of 74 cases of HCV and lot B made of 33 cases of HBV (Fig. 1). Following the distribution according to age of the HVC cases, we noticed that the lot was made of 50 women and 24 men aged between 30 and 67, the mean age of patients was 54, 79 (SD=10.58) years. We also noticed an increase in the number of people developing the disease with ages between 50 and 60 (n=32). A relatively small number of cases was noticed at patients aged between 40 and 50 (n=16), at those aged more than 60 (14 cases) and at those with ages between 30 and 40. We didn’t notice any case at the group of age below 30 years. Following the distribution according to sex, with the exception of the age group between 30-40 where we noticed a greater number at men than at women, with all the other age groups, the number of chronic HVC was twice as much at women than at men (Fig. 2).

Lot B included 9 women and 24 men aged between 7 and 59, the mean age of HBV patients was 38, 81 (SD=14, 89) years. Following the distribution of the cases according to age groups, we noticed a higher incidence of HVB at group ages between 40 and 50 (n=11) and between 50 and 60 (12 cases). A relatively smaller number was noticed at the age group between 30 and 40 (n=6) and at those below 30 (n=7). We did not notice any case belonging to the age group after 60. As far as the sex distribution is concerned, we noticed a 2 to 3 higher incidence at men than at women (Fig. 3).

Out of all 107 cases under study, 22, 42% (n=24) lived in rural areas and 77, 57% (n=83) lived in urban areas. Related to the two lots taken into consideration, the cases were distributed as follows: in lot A, 17, 56% (n=13) of the cases lived in rural areas and 82, 43% (n=61) lived in urban areas; in lot B, 33, 33% (n=11) of the cases lived in rural areas while 66, 66% (n=22) lived in urban areas (Fig. 4).

DISCUSSIONS

The maximum incidence of chronic HVC was at people aged between 50 and 60, but between 40 and 60 for lot B. The age of the patients is a very important factor, the severity of hepatic lesions being higher with age. With the exception of the group of age 30-40, the number of cases with chronic HVC was twice as high at women than at men, while for HVB the incidence was higher for men than for women. Similar data could
also be found in medical reference literature, as Bronowicki and coauthors signaled a peak of chronic viral hepatitis at about the age of 60 for both sexes, also pointing out to a small number of cases at the age group between 25 and 45 [4]. Although for most cases under study there had been medico-surgical procedures, it was difficult to document the exact date of the beginning and the exact way of contamination

situation of intravenous use of drugs [7, 12, 13]. Nosocomial or iatrogenic contamination is difficult to assess because the existence in the patient’s history of some invasive medical or surgical procedures does not certify the iatrogenic way of virus infection [2]. Bronowicki demonstrated the role of dialysis, of the digestive endoscopy and of the biopsy [3]. Following some research which grouped 9 studies altogether, it was estimated that the role of the working environment exposure in transmitting the viruses varies between 2.1% and 10% depending on the viraemia of the source subject [11]. The sexual transmitting of the virus is relatively small [23], and the one on vertical way is estimated at 5% in the absence of HIV coinfection; also the risk of transmitting the disease decreases in the case of caesarean section as compared to regular child birth when the membrane gets broken [8,17].

By comparing the distribution of the cases in the two lots according to the lifestyle, we noticed that, while most cases in lot A have an urban distribution, in lot B the distribution is 2:1 for the urban area. Similar results were recorded in medical reference literature, explicable through the existence in the urban areas of a greater number of people exposed to risk factors (intravenous drug administration, blood donation, work-related risk, etc.) [18].

Related alcohol consumption in high quantities is a major risk factor for hepatic lesions. Experimentally, it was proved that alcohol increases virus replication, causing hepatic death, iron loading in hepatocytes and diminishes the immune response [16, 17, 19]. The aggravating role of tobacco use upon the progression of the hepatic lesions and of the fibrosis has been also proved by many a study [9, 15, 20].

Since most cases showed procedures that involve using medical instruments in their history, sterilization of the medical equipment, screening for the bloodborne viruses in transfusion, and education of medical workers are required to prevent the transmission of HCV and HBV.

**REFERENCES**


Figure 5. Distribution of HCV and HBV contamination.

Figure 6. Associated risk factors in HCV and HBV infection.


