



HBV, HCV and HIV Seroprevalence in Soldiers Tested for Carriership

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Abstract

Individuals employed or recruited to work in tourism, cleaning and food sectors and the men performing their military service in the food and cleaning services in the military are requested to undergo scans for the hepatitis B (HBV), hepatitis C (HCV) and human immunodeficiency (HIV) viruses as part of the carrier testing. The aim of the present study is to evaluate the seroprevalence of HBV, HCV and HIV in the soldiers scanned in terms of carriership. The study was conducted in the Kızıltepe State Hospital through the retrospective evaluation of the records of the soldiers who presented to the infectious diseases clinic between March 2010 and December 2012 for carriership scans. The HBV, HCV, and HIV tests were carried out in the central laboratory of the Kızıltepe State Hospital through the micro particle enzyme immunoassay (MEIA) method using the AxSYM Plus Immunoassay Auto Analyzer (Abbott Laboratories, Abbott Park, Illinois, USA). The records of 367 soldiers between the ages of 20-22 were included in the study. Among these, 5 (1.36%) were HBsAg and 2 (0.55%) were anti-HCV positive, while none of them were positive for HIV. In order to reduce the risk of HBV, HCV and HIV infections, which are mainly transmitted through blood and sexual intercourse, preventive measures should be taken, education should be given and awareness should be increased. Especially individuals who are employed in sectors where the transmission risk is high should be periodically scanned and monitored for infection and diseases caused by these viruses.

Key words: HBV, HCV, HIV, seroprevalence, risk groups, troops

(Rec.Date: Sep 23, 2013 Accept Date: Nov 18, 2013)

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Introduction

Hepatitis B virus (HBV), hepatitis C virus (HCV) and the human immune deficiency virus (HIV) are infections transmitted through the transfusion of blood and blood products, percutaneous injuries, sexual intercourse, and through the vertical route from the mother to the infant. Transmission may also occur when the body fluids of an infected person come in contact with the mucosa or damaged skin. Rarely, HBV and HCV may lead to severe clinical conditions such as fulminant hepatitis during its acute course [1-3]. As the greater part of the world, HBV and HCV constitute a serious health problem also in our country. According to the data from the World Health Organization (WHO), more than one-third of the world population is estimated to be infected with HBV [4]. Our country is in a medium-endemism region in terms of HBV infections. The seroprevalence of HBV varies both between the countries and the regions. The hepatitis B surface antigen (HBsAg) positivity in our country varies between 3.9-12.5% and the ratio is reported to increase as we go from the west towards the east [5, 6]. HCV seroprevalence, which is around 0.5-2% in the world, is reported to be 1.6% in health professionals and 0.3%-0.5% among blood donors [7]. HBV is responsible for 30% of all the cirrhosis cases and 53% of the hepatocellular cancer cases. HCV is responsible for 27% of the cirrhosis cases and 25% of the hepatocellular cancer cases [8, 9].

HIV is another agent transmitted through blood and sexual contact. Since the time it was isolated in 1981, HIV is the most closely studied virus [10]. According to the data from the Ministry of Health, the number of the reported HIV/AIDS patients in our country was 5224 at the end of 2011.

People in the greatest risk group in terms of the transmission of HBV, HCV and HIV through blood and sexual contact should be regularly scanned and monitored. Individuals employed or recruited to work primarily in the food sector and also in tourism, cleaning and food sectors, and the men performing their military service in the food and cleaning services in the military are requested to undergo scans for HBV, HCV and HIV within the scope of the carrier testing [11]. The aim of the present study is to evaluate the seroprevalence of HBV, HCV and HIV in the privates who present to the infectious diseases clinic for carriership scans.

Materials and Methods

Soldiers who presented to the infectious diseases clinic of the Kiziltepe State Hospital for carriership scans between March 2010 and December 2012 were enrolled in this study. The study was conducted through the retrospective evaluation of the records of the soldiers who presented to the infectious diseases clinic. The patients' HBsAg, anti-HCV and anti-HIV test results were retrieved from the files and evaluated. The HBsAg, anti-HCV and anti-HIV tests were conducted at the central laboratory of the Kiziltepe State Hospital through the Axsym Plus Immunoassay Auto Analyzer (Abbott Laboratories, Abbott Park, Illinois, USA) using the micro particle enzyme immunoassay (MEIA) method.

Results

A total of 367 soldiers were included in the study. They originated from various regions in Turkey and their mean age was 20. According to the test results, 5 soldiers (1.36%) were HBsAg positive and 2 soldiers (0.55%) were anti-HCV positive. None of the soldiers were HIV positive.

Table 1. HBsAg positivity rates for civilian and military donors come to The Turkish Red-Crescent blood center in the last five years [12].

Year	HBsAg positivity (soldiers) (%)	HBsAg positivity (civilians) (%)
2008	1.7	1.1
2009	1.5	1.1
2010	1.4	0.9
2011	1.3	0.7
2012	1.1	0.6

Table 2. Anti-HCV positivity rates for civilian and military donors come to The Turkish Red-Crescent blood center in the last five years [13].

Year	Soldier (%)	Civilians (%)
2008	0.01	0.03
2009	0.02	0.04
2010	0.01	0.03
2011	0.03	0.03
2012	0.1	0.03

Discussion

In spite of the rising living standards, widespread vaccination programs and improved public awareness in our country, HBV, HCV and HIV infections are still an important issue of our day [14, 15]. In Turkey, HBsAg seroprevalence varies between 3.9-12.5% among the normal population. Testing the HBV, HCV and HIV frequency among blood donors may shed light to the general prevalence of these viruses. In the blood donations collected by the Turkish Red Crescent blood centres between 1983 and 1998, HBsAg positivity was observed to be 5.1%. Within this period and especially in the period between 1983 and 1991, more than half of the donors were reported to be military staff. The high seroprevalence observed during this period was associated with the collective lifestyle of the troops in a crowded environment [16]. This high seroprevalence among the soldiers who donated blood was observed to fall in the following years. Kocak et al [17] have reported that HBsAg seropositivity fell from 5.98% to 2.07% between 1987 and 2003. This study had enrolled the subjects without distinguishing between soldiers and civilians. Across Turkey, the HBsAg positivity between civilian donors was reported as 2.97% between 2000 and 2005 [18]. In another study evaluating the donors who applied to the Turkish Red Crescent Blood Centre within the last 5 years, the HBsAg positivity among military blood donors was found as 1.7% in 2008, while it diminished to 1.1% in 2012. When we focus on the civilian blood donors, the ratios were also observed to fall from 1.1% in 2008 to 0.6% in 2012 (Table 1). In our study, HBsAg positivity among soldiers was found as 1.36% and this ratio was in compliance with the other studies. A study by the Viral Hepatitis Combat Society mobile team has reported the HBsAg positivity in our region as 8.8%. In another study conducted on individuals employed in cleaning, food and tourism sectors who applied to the public health laboratory for carriership scans, HBsAg positivity was reported to be 1.9% [11]. Another study by Goz et al [19] conducted in Ankara in 1994 reported HBsAg seropositivity as 6.7%, while the study by Cengiz et al [20] that included the personnel working in the cafeteria of a bank reported this ratio as 3.8%. The diminishing ratio of HBsAg seropositivity can be associated with the routine HBV checks among blood donors and virus carriers, the preventive measures, and the increasing public awareness about these viruses.

Although the HCV seroprevalence varies depending on the studied risk groups, it is reported to be below 1% among blood donors [21]. In 2002, none of the scanned blood donors who were serving in the military in Diyarbakir were observed to be anti-HCV positive [22].

Another study conducted in the same year on the soldiers serving in Isparta found the rate of anti-HCV positivity as 0.66% [23]. When the HCV seroprevalence among the soldiers within the last five years is evaluated, no difference is observed according to the years. Based on the data from the blood centre of the Turkish Red Crescent, anti-HCV positivity among soldiers was observed as 0.01% in 2008, while it was 0.03% in 2012 (Table 2). When we look at the general population, Kaya et al [24] have observed an anti-HCV positivity of 0.52% in their study. In our study, anti-HCV positivity was 0.55%. This ratio is higher than the values reported by the Turkish Red Crescent Blood Centre and this result was associated with the limited number of the soldiers included in the study.

Compared to Europe, North America, Africa and Eastern Asia, the rate of HIV is rather low in our country. Studies conducted in different regions have reported the anti-HIV positivity between 0% and 0.2% in Turkey [25]. The scan performed by Tekin et al [26] on healthcare professionals did not detect any HIV positivity among the staff. Also, the study by Altındis et al [27] conducted on military blood donors came across no individuals who were HIV positive.

In conclusion, the majority of the epidemiological studies on Hepatitis B demonstrate that HBV is transmitted either within the family during childhood and adolescence, or horizontally within the society. Thus, parenteral applications and contact with saliva, sweat and tears become prominent in social transmission [11]. Carrier scans play a very important role in preventing this transmission route. Also, public education should be given and awareness should be increased in order to reduce the risk of HBV, HCV and HIV infections, which are mainly transmitted through blood and sexual intercourse. It is also believed that more widespread immunization programs for HBV, which can be prevented through vaccination, can significantly reduce HBsAg positivity.

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