

Klinik Çalışma

HBsAg, AntiHCV and AntiHIV Seroprevalence in Young College Students

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Abstract

Aim: Hepatitis B is a major health problem in our country as well as in the world. We aimed to investigate HBsAg, AntiHCV ve AntiHIV seroprevalence in young college students who admitted from geographically different locations of our country.

Methods: HBsAg, AntiHCV ve AntiHIV tests by chemilluminence method were obtained from a total of 1000 college students admitted for routine check-up who were between 18-22(median:20) years.

Results: Of patients, 548 were male (55%) and 452 were female (45%). HBsAg was positive in 6 people (0.60%). Of these, 2 were from Southeastern Anatolian, 2 from Central Anatolian, 1 from Eastern Anatolian and 1 from Aegean regions respectively. No AntiHCV or AntiHIV seropositivity was detected.

Conclusion: We found HBsAg positivity rates lower than previous studies and similar to those recent studies, as well as did not detect AntiHCV and AntiHIV. Because admitted students come from different locations of Turkey, our findings are considerable as reflecting regional data.

Key words: HBsAg, AntiHCV, AntiHIV, prevalence

Introduction

Viral hepatitis is still a major challenge to the public health considering morbidity and mortality rates. Hepatitis B virus (HBV) infection represents a global health problem with about 400 millions of carriers. Reports indicate that there are approximately two billions of people infected with HBV throughout the world. Some 600.000 people die every year due to acute or chronic processes of HBV (1,2). Hepatitis B prevalence in general population has been reported as 2-8%, whereas HBsAg prevalence as 64% and 54% in patients with cirrhosis and hepatocellular carcinoma (HCC) respectively in Turkey (3). Global prevalence of Hepatitis B has been reported two-folds higher than Hepatitis C and seven times higher than HIV(4).

It is estimated that, 3 percent of world's population were chronically infected with HCV (5). Every year, 3-4 millions of people are infected with Hepatitis C virus. Some 150 millions of people are chronically infected and carry the risks of liver cirrhosis and/or liver carcinoma. Every year, more than 350.000 people worldwide die due to liver diseases as a result of Hepatitis C (6).

In Turkey, different rates of prevalence were reported and of these rates, from Eastern regions comprised the highest levels (7). We aimed to investigate HBsAg, AntiHCV and AntiHIV prevalence in college students from several regions of Turkey.

Materials and Methods

A total of 1000 college students who admitted to Samsun Training and Research Hospital for mandatory check-up examination in February 26, 2013 and August 23, 2013 were included in this study. Blood samples were obtained, centrifuged and analysed the same day. HBsAg, AntiHCV and AntiHIV tests were studied by Advia Centaur XP device (SIEMENS) with chemilluminence method. Samples with positive reactions were reconfirmed by secondary tests with the same tools. Ethical consent was obtained from Council for Planning of Training and Coordination on August 21, 2013.

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Results

Of 1000 college students, 548 were male (55%), 452 were female (45%) with ages ranged between 18-22 (median:20), 454(45.4%) were from Central Anatolian region, 158(15.8%) from Black Sea region, 132(13.2%) from Mediterranean region, 91(9.1%) from Aegean region, 69(6.9%) from Eastern Anatolian region, 67(6.7%) from Marmara region and 29(2.9%) were from Southeastern Anatolian region. We were unable to obtain the risk factors for viral hepatitis and immunization status of the students just because our data were laboratory origin. Six people (0.60%) were found to be HBsAg positive. Of students HBsAg positive, 5 were male (0.91%) and 1 was female (0.22%) (Table 1). Of these 6 students, 2 were from Southeastern Anatolian region (Diyarbakır, Mardin), 2 were from Central Anatolian region (Yozgat, Konya), 1 was from Eastern Anatolian region (Adıyaman) and 1 was from Aegean region (İzmir) (Table 2). No AntiHCV and AntiHIV seropositivity was detected.

Discussion

Hepatitis B virus (HBV) infection is common in our country as well as in the world and one of the leading chronically viral infections. Appearance, contamination and spreading of this infection are influenced widely by social, economical and cultural aspects. Turkey is a mid-endemic region

for HBV infection with a rate of 2-8% and hepatitis B infection represents a challenge to the public health in our country (3). Because asymptomatic HBV carriers gain priority considering public health, it is imperative that, early detection and subsequent follow-up of these patients be made for precaution of contamination. HBsAg positivity is an important criteria in detection of chronic cases and HBV carriers. HBsAg is positive in serum during incubation period and keeps positivity during entire disease period. There are reports from our country indicating rates of 1.3-13.6% differing according to various geographical regions, age and profession groups and socioeconomic levels (7). In studies with normal population, cities like Eskişehir, Antalya, Diyarbakır, Erzurum, Adana, Elazığ, Gaziantep, Van and Sivas showed higher HBsAg carrier rates, especially highest rates in Eastern Anatolian regions (8).

A population-based study of whole country that was conducted between 2008-2011 by Turkish Society of Liver Studies revealed that, HBsAg positivity was 2.4% between 18-29 years, 4% in 5471 people from 23 different locations. Besides, HBsAg positivity was found to be lower in western regions but considerable higher in central, eastern and southeastern regions. Society Against Viral Hepatitis detected HBsAg and antiHCV positivities as 6% and 0.5% respectively in 41041 people between 2008-2011 (7). Although number of patients from Southeastern

Table 1. HBsAg, AntiHCV, AntiHIV seropositivity of patients

	HBsAg		AntiHCV		AntiHIV	
	Positive n(%)	Negative n(%)	Positive n(%)	Negative n(%)	Positive n(%)	Negative n(%)
Female	1(0,22)	451(99,78)	0	452(100)	0	452(100)
Male	5(0,91)	543(99,09)	0	548(100)	0	548(100)
Total	6(0,60)	994(99,40)	0	1000(100)	0	1000(100)

Table 2. Regional HBsAg, AntiHCV, AntiHIV seropositivity of patients

	HBsAg		AntiHCV		AntiHIV	
	Positive n(%)	Negative n(%)	Positive n(%)	Negative n(%)	Positive n(%)	Negative n(%)
Central Anatolian region	2(0.44)	452(99.66)	0	454(100)	0	454(100)
Black Sea region	0	158(100)	0	158(100)	0	158(100)
Mediterranean region	0	132(100)	0	132(100)	0	132(100)
Aegean region	1(1.09)	90(98.91)	0	91(100)	0	91(100)
Eastern Anatolian region	1(1.4)	68(98.6)	0	69(100)	0	69(100)
Southeastern Anatolian region	2(6.8)	27(93.2)	0	29(100)	0	29(100)
Marmara region	0	67(100)	0	67(100)	0	67(100)
Total	6(0,60)	994(99,40)	0	1000(100)	0	1000(100)

Anatolian region are not sufficient to make comments as to whether which region had higher positivity rates, our study indicated that, positivity rates reached top in this region.

A recent meta-analysis of 339 studies published between 1999-2009 revealed a decreasing rate of HBsAg prevalence in which from previously reported as 4-5% to 2% nowadays (9). Erdem et al. (10) reported HBsAg positivity of 4.89% in 40953 soldiers between 1996-1999 and later renewed this rate as 4.58% in 2000-2003 period. Akalin et al. (11) reported a HBsAg positivity of 0.97% in 50521 blood donors in Denizli city between 1997-2007, 1.1% in 51361 blood donors between 2000-2007 in Isparta city (12). Kalaycı et al. (13) reported 1.9% in 1961 carriers aged between 18-65 in Afyon city in 2011-2012. Considering these studies, HBsAg detection rates seemed to reduce gradually.

HBV, HCV and HIV are searched serologically during routine check-up in college students. Kutlu et al. (14) revealed in a Hepatitis B prevalence study that, HBsAg positivity rate was 0.7% in students of Medical Schools (14). Çetinkol et al. (15) found in a total of 200 high school students no HBsAg or antiHCV positivities, whereas found antiHBs and antiHAVIgG rates as 89% and 39.5% respectively. Kader et al. (16) found positive HBsAg in 2 students (1.4%). We found HBsAg positivity rate as 0.60%. This is similar to those recent studies on young adults. Contamination is via vertical route in highly endemic areas, whereas, horizontally among children. Being a health worker, sexual contact and intravenous drug abuse are other considerable transmitting routes in people without positive family history (1). It is arguable to propose that, those young adults included in our study would have more risks for transmission later in their life periods. Besides, a gradual increase in social awareness of Hepatitis B may decrease the rates. Of concern, campaigns of immunization have a major impact on this subject.

Hepatitis C and HIV infections are not common in our country. Also, no person detected as newly diagnosed in our study. Young adults are more vulnerable to sexually transmitted diseases. Elderly people carry more risks for hospital admissions and blood-borne infections.

In conclusion, we found HBsAg positivity rates lower than previous studies and similar to those recent studies, and we did not detect AntiHCV and AntiHIV positivities. Our results give some substantial contribution to present data and may reflect the regional data just because college students included in our study come from

different regions of Turkey. We suppose that, rates will decrease with the increased awareness through the years.

Yükseköğretim Öğrencisi Genç Erişkinlerde HBsAg, AntiHCV ve AntiHIV Seroprevalansı

Özet

Amaç: Hepatit B tüm dünyada olduğu gibi ülkemizde de önemli bir sağlık sorunudur. Ülkemizin değişik coğrafi bölgelerinden gelen Yükseköğretim öğrencisi genç erişkinlerdeki HBsAg, AntiHCV ve AntiHIV seroprevalansının tespit edilmesi amaçlanmıştır.

Yöntem: Sağlık taraması nedeniyle hastanemize başvuran 18-22 (median:20) yaşları arasında toplam 1000 yükseköğretim öğrencisinde HBsAg, AntiHCV ve AntiHIV testleri kemilüminesan yöntemiyle çalışılmıştır.

Bulgular: Öğrencilerin 548'i (%55) erkek, 452'si bayan (%45) idi, HBsAg 6 kişide (%0,60) pozitif olarak saptandı. Bunlardan 5'i erkek 1'i bayan idi. HBsAg pozitif öğrencilerin 2'si Güneydoğu Anadolu bölgesinden, 2'si İç Anadolu bölgesinden, 1'i Doğu Anadolu bölgesinden, 1'i ise Ege bölgesinden idi. Başvuran tüm öğrencilerde AntiHCV ve AntiHIV negatif bulundu.

Sonuç: Bu çalışmada genç erişkinlerde yapılan sağlık taramasında HBsAg pozitifliği Türkiye'de önceki yıllarda yapılan çalışmalara göre düşük, son yıllarda yapılan genç erişkin çalışmalarına benzer bulunmuş, AntiHCV ve AntiHIV pozitifliğine rastlanmamıştır. Öğrenciler Türkiye'nin değişik bölgelerinden geldiği için sonuçlar bölgesel verileri yansıtmaması açısından önemlidir.

Anahtar kelimeler: HBsAg, AntiHCV, AntiHIV, prevalans

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