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# Seroprevalence of Hepatitis B, Hepatitis C among Dental Technicans Admitted to Occupational Diseases Hospital

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## Abstract

**Background:** Hepatitis B (HBV) and Hepatitis C (HCV) are blood borne pathogens which are the major cause of viral hepatitis. And they are important occupational hazards for health care workers. In this we investigated the seroprevalance of HBV and HCV among dental technicans.

**Materials and method:** Sera samples were analyzed for Hepatitis B surface antigen (HBsAg), hepatitis B antibody (Anti-HBs) and hepatitis C antibody (Anti-HCV) in dental technicans who work in Ankara.

**Results:** Total of serology results of 583 dental technicans were evaluated. HBsAg, Anti-HBs and Anti-HCV were detected in 3.08%, 45.9% and 0%, respectively.

**Conclusion:** Dental technicans are not at risks for HBV and HCV more than the normal population.

**Keywords:** Hepatitis B; Hepatitis C; Dental personel; Blood-borne pathogens

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## Introduction

Hepatitis B (HBV) and Hepatitis C (HCV) are blood borne pathogens which are health problems globally [1]. HBV and HCV viruses are the major cause of viral hepatitis. The cause acute-chronic hepatitis which can lead cirrhosis and hepatocellular carcinoma [2]. It is estimated that 240 million people are infected with HBV and 130-170 million with HCV. Chronic hepatitis B and C are the cause of 60-70% of hepatocellular carcinoma worldwide [3]. Prevalence of HCV infection varies 0.3% to 13% among geographic regions. It has the highest prevalence in Central Africa and South-Eastern Asia [2]. Prevalence of HBV infection is classiified by the World Health Organisation (WHO) as high endemicity (>8%), intermediate (2-7%) and low endemicity (<2%) [4]. Turkey is accepted as intermediate endemicity country [5].

Both HBV and HCV are important occupational hazards for healthcare workers. HBV and HCV carriers are at risks for healthcare workers to transmit those viruses by contact of their blood and body fluids [2]. The dental personel, both dentists and technicans are at risk of occupational acquisition at HBV. In addition HBV, HCV is an another cause of parenterally acquired hepatitis in dental personel. Contemporary serological surveys have indicated that 2-30% of dental personel have serological evidence of pas tor current HBV infection. HCV risk appears to be lower than that for HBV [6].

The aim of this study is to determine the seroprevalence of HBV and HCV among dental technicans who work in Ankara, capital city of Turkey.

## Material and Methods

Five hundred eigthy-three dental technicans who admitted Ankara Occupational Diseases Hospital in 2011-2013 were included in this study. All the serum samples taken from dental technicans were tested for HBsAg and Anti-HCV antibody by using Cobas 6000 (Roche Diagnostics) in 2011 and Architect i2000SR (Abbott Diagnostics) in 2012-2013.

## Results

The dental technicans were included in this study who have been working in Ankara. The mean age of them was 33 (age range 17 and 61 years old). Of 583 dental technicans 562 (96.4%) of them were male and 21 (3.6%) of them were female.

 

HBsAg seropositivity was detected in 3.08% (18/583) of dental technicans. Of 18 dental technicans which were positive for HBV 1 was female. Among 538 dental technicans none have serological evidence for HCV. The positive AntiHBs titers (>10 mIU/ml) was detected in 45.9% (268/583) of them.

## Discussion

HBV infection is an important problem that threating public health and estimated about two billion people has been infected by HBV at one time of their lives. HBV is responsible of 49.6% of acute viral hepatitis cases in Turkey. Turkey is accepted as medium endemicity (2-7%) region for HBV infection [7]. In our study, HBsAg seropositivity was found as 3.08% as predicted for Turkey. Incidence of HBV infection depends on several variable such as profession, enviromental factors, socio-economic status, level of education. It was reported that HBV prevalance is higher in Southeast Anatolia compared to other regions of Turkey [7].

Healthcare workers including doctors, nurses, laboratory personel, dentists, dental asistants and dental technicans are at risk for viral pathogens like HBV and HCV which are bloodborne pathogens [8,9]. The studies indicated that non-immunised general dental practitioners have 3 times more risks of acquiring HBV infection when compared with general population [6]. Studies showed that dental personel are at higher risk than general population. The HBV seropositivity among dentists were reported as 10.8% in Brazil, 9% in USA and 7% in Germany [10]. The prevelance HBV were varied in studies that conducted in our country among dental staff. HBV prevelance was determined as 8.2% in dental personel by Dogan et al. [11]. Ucmak et al. [12] reported that HBV prevelance was 2% in dental personel and none of them positive for HCV. Guzelant et al. [13] reported HBV prevelance as 2.5% in their study. In Germany, Ammon et al. [14] reported that HBV seropositivity was 1% and HCV seropositivity was 0% in dental asistants. Nagao et al. [10] were investigated 141 dental care workers in Japan and they did not detect any seropositivity for HBsAg and Anti-HCV. In New York city Anti-HCV seropositivity was investiagted among oral surgeons and general dentists and reported that Anti-HCV seropositivity was higher in oral surgeons than general dentists (9.3% vs 0.14%) [15]. In a study conducted by Thomas et al. [16] Anti-HCV and HBsAg seropositivity were found 2% and 21.2% in oral surgeons and 0.7% and 7.8% in general dentists, respectively.

Our study had some limitations. One of them is we did not have appropriate demographic datas about study population. The other issue was vaccination status of dental technicans not known.

## Conclusion

In conclusion, in our country dental care workers are not at risks for HBV and HCV more than the normal population. However, it is important that infection control measures should be taken for safety of both health care workers and patients.

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