

Evaluation of the Ratio of Positivity of HBs-Ag, Anti-HCV and Anti HIV in Patients Admitted to Surgery

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Abstract

Aim: Contact with bloodborne pathogens constitutes a critically serious occupational risk for health care professionals. Among them, the most important and the most contagious pathogens are hepatitis B (HBV), hepatitis C (HCV) and human immune deficiency viruses. This study has been realized with the intention to determine seroprevalences of HBV, HCV and HIV during preoperative period in our patients so as to increase awareness of the health care professionals about risks of haematogenous infections in their daily working environments in addition to emphasizing the importance of protective measures.

Material and Methods: Hepatitis B surface antigen (HBsAg), anti-HCV and anti-HIV test results and demographic data of the patients undergoing elective surgery who were operated in the Department of General Surgery of Bolu Abant Izzet Baysal University between January 2012 and December 2014 were retrospectively reviewed. Statistical analysis was performed with the chisquare test.

Results: Data of a total of 659 study patients who had been operated in the Clinics of General Surgery could be accessed. The study population consisted of 659 patients (men, n=330; 50.07 %; women, n=329; 49.93%). HBsAg positivity was detected in 7 (2.1%) patients. Three (0.9%) male patients with anti-HCV positivity were detected. One patients were positive for anti-HIV.

Conclusion: In conclusion, health care professionals in duty are under a higher risk of contracting HBV, HCV and HIV infections. To minimize occupational infection training of the health care personnel and vaccination against HBV, HCV and HIV infections carry utmost importance.

Keywords: Anti-HCV, Anti-HIV, HBsAg, Surgery.

Received: 23.07.2015

Accepted: 30.09.2015

doi: 10.15824/actamedica.45867

Introduction

Contact with bloodborne pathogens constitutes a critically serious occupational risk for health care professionals (1). Among them, the most important and the most contagious pathogens are hepatitis B (HBV), hepatitis C (HCV) and human immune deficiency viruses (HIV). These viruses are transmitted to health care professionals through contaminated penetrating stab wounds, spilling of infected blood or other body fluids on to mucous membranes or their contact with skin areas with impaired integrity (2). For HBV, HCV and HIV which are transmitted via parenteral route, haemodialysis units, emergency services, laboratories, organ transplantation units, clinics of cardiovascular surgery, haematology-oncology units are highly risky departments (3). According to data of World health Organization globally a total of 35 million health care professionals are annually exposed to 3 million, incidents of percutaneous injuries. As a result every year cases with 70000 HBV, 15000 HCV and 1000 HIV infections are seen. Surgeons are more exposed to these risks when compared with their colleagues (2). Protective measures applied in the surgical units and surgical technique have been designed to protect the patient from contamination, in recent years

attention have been concentrated on the prevention of transmission of haematogenous infections from patients to the surgeons (4).

This study has been realized with the intention to determine seroprevalences of HBV, HCV and HIV during preoperative period in our patients so as to increase awareness of the health care professionals about risks of haematogenous infections in their daily working environments in addition to emphasizing the importance of protective measures.

Materials And Methods

Hepatitis B surface antigen (HBsAg), anti-HCV and anti-HIV test results and demographic data of the patients undergoing elective surgery who were operated in the Department of General Surgery of Bolu Abant Izzet Baysal University between January 2012 and December 2014 were retrospectively reviewed. HBsAg, anti-HCV and anti-HIV tests were performed in the medical microbiology laboratory of our hospital using macro-Elisa method (Architect i2000-Abbott, USA; Cobas e601-Roche, USA). Statistical evaluation was performed using *chi-square* test and $p < 0.05$ was accepted as the level of significance.

Results

Data of a total of 659 study patients who had been operated in the Clinics of General Surgery could be accessed. The study population consisted of 659 patients (men, n=330; 50.07 %; women, n=329; 49.93%) Mean age of all the patients was 55.7±18.7 years. HBsAg positivity was detected in 7 (2.1%) patients [men (n=5), women (n=2)]. Three (0.9%) male patients with anti-HCV positivity were detected. One patients were positive for anti-HIV.

Table 1. Rates of HBsAg, Anti-HCV and Anti-HIV positivities (n=659).

	n (%)
HBsAg	7 (1.06%)
Anti-HCV	0.45 (0.9%)
Anti-HIV	1 (0.15%)

Discussion

HBV, HCV and HIV infections are nosocomial infections, which can be transmitted between patients and from health care professionals to patients and *vice versa*. Transmission of HBV, HCV and HIV infections through contact of infected blood and body fluids to the skin with impaired integrity and inadvertent prick of the contaminated injector needle remain to be a serious health issue for all health workers, mainly operating room, emergency service and laboratory workers (1)(5).

Although our country is in the low-endemic group for HCV and moderately endemic group for HBV infection, HBsAg positivity in 8% of the population was detected, while 3-4 million people were HBsAg carriers (6). In various studies, the incidence of viral hepatitis has been reported as seroprevalences of HBsAg and anti-HCV which ranged between 3.3-16.4% and 0-2.1%, respectively (7). In many studies, the risk of contracting HBV and HCV infection secondary to needle prick has been reported as 7-30% and 4-10%, respectively (8). Risks of infection with HIV and HCV following percutaneous injuries have been detected as 0.1-0.25% and 0.5-4%, respectively (8).

Although universally accepted rules related to this issue are lacking, in our country frequently HBsAg, anti-HCV and anti-HIV ½ screening tests have been implemented among patients scheduled for the surgical operations in order to prevent transmission of infections. Though some authorities have thought that these screening tests are not required and

every patient should be assumed to be potentially infective. Despite assertions favouring adequacy of preventive measures, some studies have advocated conduction of preoperative screening tests (9) (10). In our country, none of these screening tests performed by Girgin *et al.* for the demonstration of the risk of these diseases in patients scheduled for surgical operations, seroprevalences of HBsAg and anti-HCV were found to be 6.6 and 1.6%, respectively (11). In our study, comparatively lower HBsAg (1.06%) and anti-HCV (0.9%) positivities were obtained. These lower rates may be related to lower patient circulation of our center, which provides health care services to fewer patient groups or differences in regional patient populations.

Contrary to our study, in a study performed in a patient group scheduled for an urological surgery, HBsAg and anti-HCV positivities were detected in 3.1% and 0.4% of the cases, respectively (12). In a study in Kayseri province where patients who had undergone orthopaedic surgery, seropositivities for HBsAg and anti-HCV were found to be 3.9 and 1.94%, respectively (3). In a study where paediatric patients were investigated preoperatively, HBsAg was observed in 0.5% of the patients, while anti-HCV positivity could not be identified. In a tertiary hospital HBsAg and anti-HCV positivities were detected in 1.8 and 0.5% of the pregnant women, while HBsAg and anti-HCV positivities were observed in 1.9% and 1.1% of the women with gynaecological diseases, respectively (13). Higher of lower incidence rates in their study relative to our study have been attributed to regional differences in patient populations.

HIV infection has become one of the important health care problems with increasing incidence both in the world and in our country. After reporting of the first case with AIDS in 1981, attentions were concentrated on this disease. Percutaneous exposure to HIV-contaminated blood samples carries a risk of HIV infection in 0.3% of the cases (14). Inability to achieve complete cure in HIV infection and its worse prognosis are very important issues for health care workers. In our study, anti-HIV 1/2 positivity was detected in 0.15% of the cases.

This study showed that health care professionals in duty are under a higher risk of contracting HBV, HCV and HIV infections. Training of health personnel in order to minimize the risk of occupational transmission and should be vaccinated against hepatitis B. It is important for HCV and HIV protective measures. Especially, surgical procedures should be

realized in compliance with strict measures. Besides, all viral serological tests should be performed in all patients who will undergo major surgery and more attentive performance should be exerted by surgeon and the surgical team when operating on patients

with seropositive values. Every seronegative patient should be regarded as a potential carrier and protective measures should be taken in consideration of the probability of infection.

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