

Study on Hepatitis B in Medical staff, Central Province, Islamic Republic of Iran

Research Article

Farahani H¹, Zolfaghari F²¹ Dept. of Biochemistry, Faculty of medicine, Arak University of Medical Sciences, IR, Iran.² General Practitioner, Arak Medical Science University, Iran.

Abstract

Background: to determine the prevalence of HBs Ag positive in staff of Amir Kabir Hospital (referral center) and compare with the results given by others.

Methods: 202 cases, working in Amir Kabir Hospital for more than 5 years were selected. ELISA Micro Plate Kit (Radim Company Italy) and Heponostrik kit were used for estimation. Positive samples were re-tested by the same method and confirm them by Iranian Blood Transfusion Organization, Arak branch.

Results: Our results showed that prevalence of infection to hepatitis B among Amir Kabir Hospital staff 2.9%. The ratio of male to female were 2.4. However out of positive cases 83.4% were male and 16.6% female. All the positive cases had the previous contact with the blood or discharges of patients and needle.

Conclusion: The results of present study showed increment in infection of male staff to HBsAg as compared to the female. The rate of positive HBs Ag was 2.9%, which showed increment as compared the results of 0.6-1.6% given by other

Keywords: Hepatitis B, Medical staff, I.R. Iran.

***Corresponding Author:**

Dr. Farahani Heidar, M.Phil, Ph.D Biochemistry,
Associate Prof. Biochemistry, Dept. Biochemistry, Arak Medical Science
University, Arak, Central Province, Islamic Republic of Iran.
Tel: 09181611258; Fax: 0863 4173521
E-Mail: farahaniheidar@yahoo.com OR dr.farahanih@arakmu.ac.ir

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Introduction

National Institute for Occupational Safety and Health reported that, there are approximately 600,000 to 800,000 needlestick and other percutaneous injuries every year among health care workers [1]. Hepatitis B infection is a worldwide health problem. According to one global survey, more than 2 billion people are infected with hepatitis B virus [2-4], and nearly 350 million are carrier for hepatitis B virus [5]. In I.R.Iran infection is between 1/7 to 5% [6,7]. Hepatitis B is a major risk for staff that has frequent contacts with human blood or other body secretion of patients. Hepatitis B infection accounts annually for 1 million deaths worldwide from hepatocellular carcinoma and cirrhosis and liver failure [1,8,9]. Different studies have shown that medical staffs are at high risk for hepatitis B infection [9-12]. There is still an ongoing

discussion about the extent to which medical staff might be at risk of hepatitis B or source of hepatitis B infection [11,13-16].

The present study was designed to estimate seroepidemiology of HBs Ag positive in Amir Kabir Hospital (referral center of state for pediatric, ENT, Eye, Cardiology staff) with nature of the unit given services to the patients, and a comparison with the results given by others.

Materials and Methods

A retrospective cross-sectional study was conducted on 202 staff, working for more than 5 years in different sensitive units in Amir Kabir Hospital such as operation hall, infectious ward, CCU, post CCU, ICU, OPD Operation hall, Laboratory, emergency (Nurses, Technicians and Cattes) of these units were identified and participated in the study. Participant's age was 25 to 55 years. All participants completed a consent form, and tested the study protocol was approved by the research ethics committee of Arak Medical Science University. After informing the staff about the aim of the study, two to three milliliter blood sample was collected from the vein and tested for HBs Ag, HBs Ab, HBc, HBc Ab. Estimation of HBs Ab and Hbs Ag, within first 24 hour assayed using ELISA micro plate kits (Radim company, Italy), and for HBcAb and Anti HBc, kit of Heponostrik were used. Positive samples were re-tested second time by the same method and confirm them by Iranian Blood Transfusion Organization, Arak. Those staff how were not agree to participate in this study (21 person) were excluded.

Statistical Analysis:

Data were analyzed by SPSS software version 11.5. Data com-

parisons were performed using the Chi-square, Fisher's exact test and Student's t – test applied to test for significance at 95% confidence interval.

Results

Two hundred two person how worked for more than 5 years in Amir Kabir Hospital were tested. There were 29.8 % male and 70.2 % female. Findings showed that 15.8% of cases were unvaccinated and 84.2 % were vaccinated (at least for two or three dose). 6 cases were HBs positive, that is prevalence of infection to hepatitis B among high risk personal in Amir Kabir Hospital in Arak, Central Province, was 2.9 %. Most of these positive cases were male (83.4%) and 16.6 % female. The male to female ratio was 2.4. Significantly prevalence of infection to hepatitis B in operation hall and cates were higher than other ward staff. All positive cases 100% had the previous contact with the blood or discharges of patients and the needlestick.50 % of HBs Ag positive cases had been unaware of previous hepatitis B vaccine. (Table 1)

Conclusions

Exposure to blood and other potentially infectious body fluids have, for long time been recognized as a potential health hazard in health care personnel. On the basis of the present study, the rate of positive HBs Ag was 2.9 %, which showed increment as compared the results of 0.6-1.6% given by other in I.R. Iran[16-18].This difference may be due to nature of hospital which contents Eye, ENT, Cardiology, and pediatric wards . Injuries from sharp objects among staff are widespread occupational hazard. In this study sex and specific wards were most important risk factors for infected personnel. 50 % of HBs positive in our investigation had not been vaccinated previously .So an effective educational program and an establishment of surveillance system for registering and management of occupational exposure in hospital are needed. Even today we observed staff unaware of their vaccination [18-20]. So implementation of awareness strategies is urgent and the need of boosters among health care workers to be essential.

Table 1. Comparisons between Prevalence of HBsAg and risk factor in Medical staff, Central Province, IR. Iran (Total number of cases=202)

Risk factor	Total No. individuals and %	Total No. HBsAg +	Prevalence Percentage
Contact with patient blood or discharges	177 (87.6%)	6	2.9
Needle injection	147(72.8%)	6	2.9
Contact eye with patient blood or discharges	68(33.6%)	2	1
Blood Transfusion	3(1.5%)	0	0
Tattoo	13(6.4%)	1	0.5
Sex			
Male	59(29.2%)	5(83.4%)	2.45
Female	143(70.8%)	1(16.6%)	0.55
Vaccinated	170(84.2%)	3(50%)	1.45
Unvaccinated	32(15.8%)	3(50%)	1.45

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