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## KNOWLEDGE AND AWARENESS REGARDING HEPATITIS B VACCINATION AMONG MEDICAL FRATERNITY

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### ABSTRACT

Hepatitis B (HBV) is an endemic and a leading cause of morbidity and mortality among Indians. The present study was designed to evaluate the degree of awareness and knowledge of HBV in Health care workers (HCWs) i.e doctors, nurses and lab technicians. One fifty health care workers comprising of doctors, nurses and Lab technicians were interviewed after taking verbal consent using a self administered questionnaire in PIMS hospital, Jalandhar (Dec 2010). Majority were in the age group of 25-40 years. On an average, 89% doctors, 81.7% nurses and 80.3% had correct knowledge about Hepatitis B infection, respectively while 11% doctors, 18.3% nurses and 19.7% lab technicians exhibited incorrect level of awareness about transmission of Hepatitis B. infection. Low vaccination coverage contribute highly to the rates of viral hepatitis infections among HCWs. Prevention of occupational infection with blood borne pathogens should be a priority to the national program for promotion of infection control.

**Keywords:** Knowledge, Awareness

### INTRODUCTION

All over world 2 billion people have been infected with hepatitis B virus (HBV), 360 million have chronic infection, and 600,000 die each year from HBV-related liver disease or hepatocellular carcinoma (Shepard et al., 2006). Hepatitis B is a leading cause of chronic hepatitis, cirrhosis, and hepatocellular carcinoma, accounting for 1 million deaths annually. The majority of infections are subclinical, so approximately 80% of all HBV infections are undiagnosed. Like other healthcare workers, doctors, specially surgeons are at an increased risk of exposure to HBV infection. Studies have shown that risk of exposure for surgeons is about three to four times greater and for non-immunized surgical specialists about six times greater than that of general population (CDC, 1982, 1997). The present study was designed to determine knowledge and awareness of transmission of HBV among doctors, nurses and lab technicians.

### MATERIALS AND METHODS

A cross-sectional observational study was conducted among the faculty of PIMS, Medical College, Jalandhar, India. One hundred and fifty health professionals randomly sampled and voluntary participated in study, and subjects were fully informed about design and purpose of study. A written informed consent was obtained from each participant, and anonymity of the participants was maintained throughout study.

### RESULTS

#### **For Doctors**

*Name: Age: Sex:*

STATEMENT REGARDING AWARENESS	YES (√)(%)	NO (χ)
Hepatitis B virus transmission results from needle stick injuries.	100.00%	0
Hepatitis B virus transmission results from unprotected sexual contact.	90.00%	10
Hepatitis B virus transmission results from exposure to infectious blood or body fluids.	91.00%	9
Hepatitis B cannot be transmitted through hand shaking	100	0
Hepatitis B infection is preventable by vaccination	100	0
Chronic hepatitis infection results in liver cirrhosis and hepatocellular carcinoma	97	3
Patients undergoing surgical dental procedures to be investigated for HBV	90	10
Dental personnel infected with hepatitis B should avoid patients' treatment, especially surgeries	89	11
Are you immunized with HBV vaccine(1 <sup>st</sup> ,2 <sup>nd</sup> ,3 <sup>rd</sup> and booster)	44	56

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**For Nurses**

Name: Age: Sex:

STATEMENT REGARDING AWARENESS	YES (√)(%)	NO (χ)
Hepatitis B virus transmission results from needle stick injuries.	100	0
Hepatitis B virus transmission results from unprotected sexual contact.	71	29
Hepatitis B virus transmission results from exposure to infectious blood or body fluids.	100	0
Hepatitis B cannot be transmitted through hand shaking	98	2
Hepatitis B infection is preventable by vaccination	99	1
Chronic hepatitis infection results in liver cirrhosis and hepatocellular carcinoma	68	32
Patients undergoing surgical dental procedures to be investigated for HBV	69	31
Dental personnel infected with hepatitis B should avoid patients' treatment, especially surgeries	60	40
Are you immunized with HBV vaccine(1 <sup>st</sup> ,2 <sup>nd</sup> ,3 <sup>rd</sup> and booster)	71	29

**For Lab Technicians**

Name: Age: Sex:

STATEMENT REGARDING AWARENESS	YES (√)(%)	NO (χ)
Hepatitis B virus transmission results from needle stick injuries.	100	0
Hepatitis B virus transmission results from unprotected sexual contact.	100	0
Hepatitis B virus transmission results from exposure to infectious blood or body fluids.	82	18
Hepatitis B cannot be transmitted through hand shaking	90	10
Hepatitis B infection is preventable by vaccination	98	2
Chronic hepatitis infection results in liver cirrhosis and hepatocellular carcinoma	68	32
Patients undergoing surgical dental procedures to be investigated for HBV	43	57
Dental personnel infected with hepatitis B should avoid patients' treatment, especially surgeries	32	68
Are you immunized with HBV vaccine(1 <sup>st</sup> ,2 <sup>nd</sup> ,3 <sup>rd</sup> and booster)	30	70

Average	Correct	Incorrect
1.Doctors	89%	11%
2.Nurses	81.70%	18.30%
3.Lab technicians	80.30%	19.70%

**DISCUSSION**

**Doctors**

In the present study, there was 100% awareness that Hepatitis B results from the exposure to infectious blood or body fluids among doctors, while 90% doctors believed that HBV transmission results from unprotected sexual contact while the rest 10% doctors who believed that HBV transmission does not occur through unprotected sexual contact were junior resident doctors.91% doctors believed that HBV can be transmitted from infectious blood or body fluids. Here also the junior residents gave incorrect response. Majority of doctors (100%) believed that HBV infection can be prevented by vaccination and cannot be transmitted through hand shaking. 97% of doctors were aware that chronic HBV infection results in liver cirrhosis and hepatocellular carcinoma while knowledge and awareness regarding dental procedures was low (90% and 89%). The most shocking fact was that only 44% of doctors were actually immunized against HBV. Most of the doctors had taken incomplete vaccination and had missed the booster dose, this was seen even among doctors working in clinical departments. Similar finding were seen in Sagufta et al., (2010).The overall average awareness percentage among doctors was seen to be 89%.

**Nurses**

The average percentage awareness regarding HBV was found to be 82% among nurses. Majority of them (100%) knew that HBV transmission results from needle stick injuries and can be transmitted from exposure to infectious blood or body fluids while 71% of them believed that transmission results from

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unprotected sexual contact. The awareness among nurses about dental procedures was very low (68% and 60%) even knowledge about HBV causing hepatocellular carcinoma and cirrhosis was found to be very low (68%). Nurses were found to be better immunized than doctors with 71% of nurses having better vaccination than doctors.

#### **Lab Technicians**

The average percentage awareness among lab technicians regarding HBV was found to be 80.30% which is almost similar to nurses. Majority of them (100%) were aware that HBV infection is preventable by vaccination (98%) while 100% knew that HBV transmission results from needle stick injuries and unprotected sexual contact. The awareness regarding dental procedures was found to be very low (43% and 32%). 68% believed that chronic hepatitis infection leads to liver cirrhosis and hepatocellular carcinoma. The most surprising fact was that lab technicians were found to be only 30% which is very low percentage. Similar results were seen in Kandeel (2003).

Needle stick injuries in health care workers may be quite common, thereby making the risks of contacting blood-borne infectious diseases very high. The reported incidences of needle stick injuries over the 12 month period preceding the survey was 1.30/person and of injuries from other sharp objects 1.21/person. In more than half {54.8%} of the needle stick injuries, the needles had been used in patients, 8.2% of whom were known to have hepatitis B or C, syphilis, or HIV infection (Guo et al., 1999).

Surveillance on health care workers in UK, who have been exposed to blood born viruses has been carried out since 1984 by the end of June 2000, the Communicable Disease Surveillance Center had received 827 reports of exposures to material from patients with antibody to HIV, hepatitis C or hepatitis B. 242 of the health care workers were exposed to HIV. Out of the total of 82 infected 337 were nurses and 262 were doctors; these two groups remain the most frequently exposed (CDR Weekly, Communicable Disease Report Volume 10, Number 33).

#### **Conclusions**

The present study demonstrates a need for further HBV education, even though it was carried on health professionals. Although the majority reported awareness of HBV, only a minority of subjects were of serious end-organ consequences of HBV. So it's important to hold community based studies to know the knowledge of people towards HBV and to create awareness among them. Percentage of HCWs vaccinated was low and the main factor responsible was awareness and attitude problem. At the same time non-availability of vaccine by the employer had been identified as the second most important reason for non vaccination.

#### **Recommendations**

1. HBV Immunization should be made mandatory for HCWs as was done in Canada (1998).
2. The immunization status of nurses was found better than doctors, the main reason being that they were immunized as soon as they enter any nursing college, so as soon as doctors whether medical or dental enter professional college they are immunized so by the time they pursue internship they will be administered booster dose absence of which is the main reason behind lack of proper vaccination status among doctors

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