STUDY OF AWARENESS ABOUT HEPATITIS B AMONG MEDICAL STUDENTS, A VULNERABLE GROUP OF HEALTHCARE WORKERS (HCWS)
Satyajit Sundar Ray

1Associate Professor, Department of Community Medicine, Hi-Tech Medical College, Rourkela, Odisha.

ABSTRACT

BACKGROUND
Hepatitis B is a serious global public health problem. Awareness regarding this serious disease (preventable by vaccination) was lacking among majority of healthcare workers. As risk of occupational exposure to HBV among healthcare workers was a major concern. This study was conducted to assess the level of awareness, attitudes and practice among medical students regarding hepatitis B infection.

MATERIALS AND METHODS
A cross-sectional study was conducted from February to March 2014 among 352 undergraduate medical students. Data were collected using predesigned, pretested questionnaire and analysed by using EPI info 3.5.1.

RESULTS
93.2% said hepatitis B was transmitted by contaminated blood and body fluid and by unsterilised syringes, needles and surgical instruments. 97.2% said hepatitis B was diagnosed by hepatitis markers test, 89.2% said that vaccination was the choice for treatment of hepatitis B, 94.6% said that vaccination was main source of post exposure prophylaxis and 91.2% said that HBIG was used for post exposure prophylaxis. Most of the students had positive attitude about hepatitis B. Among 352 students, 56.2% were fully vaccinated and 8.8% were partially vaccinated and 35% were unvaccinated.

CONCLUSION
Different aspects of knowledge about hepatitis B were quite good among medical students, but there was a gap in practice as 44% students were unvaccinated or partially vaccinated against hepatitis B.

KEYWORDS
Hepatitis B, Medical Students, Knowledge, Attitude and Practice.

HOW TO CITE THIS ARTICLE: Ray SS. Study of awareness about hepatitis B among medical students, a vulnerable group of Healthcare Workers (HCWS). J. Evid. Based Med. Healthc. 2017; 4(65), 3880-3883. DOI: 10.18410/jebmh/2017/775

BACKGROUND
Hepatitis B Virus (HBV) infection is one of the major public health problems in the world. Persistent hepatitis B virus infection may cause progressive liver disease including chronic active hepatitis and hepatocellular carcinoma. Globally, more than 2 billion people have evidence of past or current hepatitis B virus infection; 350 million are chronic carriers; 6,00,000 deaths result annually from cirrhosis and hepatocellular carcinoma. In South East Asian region, there are estimated 80 million HBV carriers (about 6% of the total population). India has the intermediate endemicity of hepatitis B with hepatitis B surface antigen prevalence between 2% and 8% among the population studied. India harbours 10-15% of the entire pool of HBV carriers of the world.

In the healthcare settings, Healthcare Workers (HCWs) are at high risk of HBV infection. Globally, the prevalence rate of HBV in HCWs is about 2-10 times higher than the general populations. In India, carrier rate of HBsAg in hospital staff has been found to be 10.87%. The higher risk of HBV infection among HCWs in developing countries could be attributed to the prevailing careless handling of contaminated objects, reuses of inadequately sterilised medical equipment and an improper waste disposal system. Health workers, especially physicians and medical students are always in direct contact with patients and are vulnerable to hepatitis B infection as they are involved in blood transfusion, injections and surgical operations in their practices. Risk for accidental exposure among the trainees could be higher due to their lack of experience, insufficient training, duty overload and fatigue. Hepatitis B virus infection can be prevented by adhering to universal precautions including the use of protective barriers like gloves, proper sterilisation of medical equipment, proper hospital wastes management system and vaccination. However, studies have indicated that there was a clear gap of knowledge, attitude and practice among students towards the risks of occupational exposure to HBV infection. Therefore, the aim of this study is to assess the KAP among medical students regarding hepatitis B infection and prevention.
Aims and Objectives
1. To assess the degree of awareness among medical students regarding hepatitis B transmission and prevention.
2. To assess the preventive practices among medical students regarding hepatitis B.

MATERIAL AND METHODS

Study Design - Cross-sectional study.
Study Settings - Medical College based study.
Study Tools - Predesigned, pretested questionnaire.
Study Population - 352 undergraduate medical students from second year to interns.

Inclusion Criteria
- Undergraduate medical students having clinical rotation duty.
- Those who give consent to participate in the study.

Exclusion Criteria
- Undergraduate medical students not having clinical rotation duty (1st year).
- Those who did not give consent to participate in the study.

This was a cross-sectional study conducted among 352 undergraduate medical students of Kalinga Institute of Medical Sciences, Bhubaneswar, from February to March 2014. Study was approved by ethical committee of institution. Students from second year to interns were included as study population. First year students were excluded from the study as they begin their clinical rotation duty from 2nd year onwards. The study tool used was a predesigned, pre-tested questionnaire. The questionnaire was used to collect information about the sociodemographic characteristics of student and awareness among medical students regarding hepatitis B transmission and prevention. Students who gave consent for the study were administered the predesigned, pretested questionnaire in the lecture theatres, which was collected after it had been completed. The data were analysed using Epi Info 3.5.1. The results were expressed in proportions.

RESULTS

<table>
<thead>
<tr>
<th>Variables</th>
<th>Yes N (%)</th>
<th>No N (%)</th>
<th>Not Sure N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>151 (42.9)</td>
<td>21 (6)</td>
<td>3 (0.8)</td>
</tr>
<tr>
<td>Female</td>
<td>201 (57.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19-20</td>
<td>161 (45.7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-23</td>
<td>178 (50.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24-26</td>
<td>13 (3.7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study Year</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second year</td>
<td>91 (25.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd Part - 1</td>
<td>94 (26.7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd Part - 2</td>
<td>86 (24.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intern</td>
<td>81 (23)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1. Demographic Characteristics of Study Sample

A total of 352 undergraduate medical students from second year to intern participated in the study. Among them, around 43% were males and 57% were females. Majority of the students 339 (96.3%) were in the age group of 19-23 years (Table 1).
According to the mode of transmission, majority of students agreed that HBV can be transmitted by unsterilised syringes, needles and surgical instruments (96.9%), contaminated blood and body fluid (93.2%) and unsafe sexual contact (84.4%). Most of the students knew HBV carriers can transmit the infection (87.2%), vertical transmission from mother to child did exist (82.7%) and casual contact such as handshaking (95.2%) and food (89.2%) didn’t transmit the infection.

Assessing the knowledge about diagnosis, treatment and complication of hepatitis B, most of the students correctly, hepatitis B was diagnosed by hepatitis markers test (97.2%) not by medical history (85.5%), hepatitis B was treated by vaccination (89.2%) and immunotherapy (79%) not by antiviral therapy (77%) and chronic hepatitis B infection landed to liver cancer (83.8%).

In terms of knowledge on Post Exposure Prophylaxis (PEP) and prevention most of the students acknowledged for PEP hepatitis B vaccine (94.6%) and hepatitis B immunoglobulin (91.2%) was used, not antiviral therapy (74.4%), but for prevention of infection, screened blood transfusion (98.6%) and hepatitis B vaccine (99.1%) was required, not maintenance of hygiene (96.9%).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Yes N (%)</th>
<th>No N (%)</th>
<th>Not Sure N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you got vaccinated against HBV?</td>
<td>229 (65.1)</td>
<td>123 (34.9)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>How Many Doses of HBV Vaccine did you Receive?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 dose</td>
<td>5 (1.4)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2 doses</td>
<td>26 (7.4)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3 doses</td>
<td>198 (56.2)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Have you ever been screened for hepatitis B?</td>
<td>31 (8.8)</td>
<td>321 (91.2)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Have you ever collect blood from hepatitis B patient?</td>
<td>77 (21.9)</td>
<td>275 (78.1)</td>
<td>0 (0)</td>
</tr>
</tbody>
</table>

Table 2. Knowledge Level of the Students About Hepatitis B

Table 3 depicts 65.1% students were vaccinated against HBV, but only 56.2% were completely immunised. Most of the students neither screened for hepatitis B (91.2%) nor collect blood from hepatitis B patient (78.1%). Only 21.9% students collect blood from hepatitis B patient, out of which 96.3% change gloves for each patient during blood collection. Only 6% had needle prick injury, but 83.3% of them report the same.

DISCUSSION

Hepatitis B Virus (HBV) infection was a significant occupational hazard among healthcare providers especially in developing countries where the infection was highly prevalent. Awareness studies provided important sources of data to design health intervention methods and public health policies.

In the present study, 93.2% said hepatitis B transmitted by contaminated blood and body fluid, 84.4% said it was transmitted by sexual contact and 96.9% said it was transmitted by unsterilised syringes, needles and surgical instruments. Similar findings have been reported in studies conducted among medical students of Ahmedabad (87%, 74%, 83%),

Hyderabad (98.8%, 94.4%, 95.9%),

Tamilnadu (89.5%, 76.5%, 92%) and Northwest Ethiopia (97.2%, 84.1%, 96.7%).

97.2% students said that hepatitis B markers test (HBsAg) was used for diagnosis of hepatitis B, which was supported by the study conducted at Hyderabad (98.5%) and the guidelines given by WHO regarding hepatitis B. 83.8% of the students were aware that hepatitis B infection could lead to liver cancer, which was backup by the studies conducted at Northwest Ethiopia (81.3%),

Tamilnadu (87%) and Hyderabad (99.4%, 97.9%). 94.6% students said that vaccine and 91.2% students said that immunoglobulin used for PEP, which was correctly acknowledged by the study conducted among medical students in Hyderabad (97.1%, 91.8%).

19.1% students said that vaccination and 98.6% students said that screened blood transfusions can prevent transmission of hepatitis B, which was in agreement to studies conducted at Northwest Ethiopia (84.6%),

Chennai (86%),

Tamilnadu (93%) and Hyderabad (99.4%, 97.9%).

In the present study, the proportion of fully-vaccinated students against hepatitis B (56.2%) was low in comparison to similar studies done in Ahmedabad (63%),

Chennai (73.6%),

and Odisha (80%), but high in comparison to similar studies done in Hyderabad (26.7%) and Tamilnadu (57%).
6% students had needle prick injury, which was very less as compared with the studies from Cameroon (55.9%),\textsuperscript{17} Nigeria (48%),\textsuperscript{18} Palestine (40 %),\textsuperscript{19} Northwest Ethiopia (26.8%)\textsuperscript{13} and 83.3% of students having needle prick injury reported about their injury, which was more as compared with the study from Northwest Ethiopia (53.7%).\textsuperscript{13}

**Limitations**
The findings limited to the undergraduate medical students only. It did not cover other HCWs who were frequently exposed to the risk of HBV infection. The data were obtained by questionnaire, and therefore, there could be a recall bias of the participants. The findings particularly in terms of vaccination status were liable to information bias as it merely based on students’ report without cross-checking with their vaccination records.

**CONCLUSION**
The present study concludes that different aspects of knowledge about hepatitis B were quite good among medical students. Most of the students had positive attitude towards preventive, promotive and curative aspects of hepatitis B, but there was a gap in practice as 44% students were unvaccinated or partially vaccinated against hepatitis B.

**RECOMMENDATIONS**
Since hepatitis B remains a challenge for medical students for its entity as occupational hazards, all students should be routinely vaccinated upon entry into the medical college to decrease the burden of the disease as they were exposed to the risk factors frequently in their day-to-day activities. Orientation about hepatitis B transmission, pre and post exposure prophylaxis must be imparted to the medical students before beginning of their clinical duties.

**REFERENCES**
\[1\] Dientardt F. Seroepidemiological study of hepatitis B. WHO Chr 1983;37(6):203-204.