Prevention of Hepatitis B-Knowledge and Practices Among Medical Students

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Abstract

Background: Hepatitis B is the major infectious disease of mankind. It is the most common cause of chronic hepatitis, liver cirrhosis and hepato-cellular carcinoma world wide. The health professionals are at the most risk. Vaccination against Hepatitis B can prevent this deadly disease. This survey was conducted to assess the knowledge and status of Hepatitis B vaccination among the medical students of B.J. Medical College, Ahmedabad. Methods: A cross-sectional study was conducted among 150 medical students of II, III/I and III/II year. Pre-tested questionnaire were administered to 50 students of each semester. Data was analyzed using SPSS version 16.0. Results: 86.7 % of the medical students had correct knowledge about Hepatitis B virus, though only 66 % of II year students knew about the virus. Majority of the medical students had correct knowledge regarding mode of transmission however, the knowledge was found to be less among II year students. Only 20% of the II year students had the correct knowledge regarding Post Exposure Prophylaxis for hepatitis B. 29.3% of the medical students were not vaccinated for Hepatitis B. Conclusion: The present study concludes that there is a lack of awareness among the medical students entering into the profession about Hepatitis B, its route of transmission and modes of prevention. Similarly all the students were not vaccinated against Hepatitis B, which makes them vulnerable to the disease.

Keywords

awareness, hepatitis b, prevention, vaccination

Introduction

Hepatitis is an inflammation of the liver and may be caused by the virus Hepatitis B. Hepatitis B is a global problem, with 66% of all the world population living in areas where there are high levels of infection. There are more than 2 billion people worldwide, having evidence of recent or past HBV infection and 350 millions are chronic carriers of hepatitis B infection. 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 10% among the population studied. The number of carrier in India has been estimated to be over 40 million.

The practice of modern medicine has contributed lot in the increase of the cases and spreading the disease in the society. Hepatitis B infection are common due to lapse in the sterilization technique of instruments or due to the improper hospital waste management as 10% to 20% health care waste is regarded hazardous and it may create variety of health risk. Among the health care personnel’s HBV is transmitted by prick of infected, contaminated needles and syringes in the skin or through accidental inoculation of the minute quantities of blood during surgical and dental procedures. Knowledge regarding the Hepatitis B virus and safety precautions is needed to minimize the health care settings acquired infections among health personnel. They should have complete knowledge of Hepatitis B infections, importance of vaccinations and to practice
simple hygienic measures apart from that of specific protective measures.

Medical students being part of the health care delivery system are exposed to the same, if not greater, magnitude of risk as other health care workers when they come in contact with patients and contaminated instruments. They are the first level of contact between patients and medical care. They are expected to undertake activities related to patient care with the beginning of their clinical years. After the epidemic of Hepatitis B in Modasa town of Sabarkantha District of Gujarat, it was decided to know the level of awareness among medical students who are at the highest risk of developing hepatitis B during their clinical postings. As on date very few studies have been conducted to assess the knowledge of medical students regarding Hepatitis B. Therefore this study was conducted to assess the knowledge, attitude and practices regarding Hepatitis B amongst medical students.

Material and Methods

The medical curriculum in universities across Gujarat spans over a period of five years. From 2nd year onwards students begin their clinical rotation at majority of the institutions. Therefore a cross-sectional study was conducted amongst the 2nd, 3rd part I and 3rd part II students of B. J. Medical College, Ahmedabad. Students of pre-clinical years (1st year) were excluded from the study. A total of 150 students were recruited using a non probability random sampling technique, through lottery method. A pre-tested structured questionnaire was administered during a 2 week period in February 2010, to collect the knowledge, attitude and practices of students regarding hepatitis B. Data was entered and analyzed in SPSS version -16 and was presented in the form of simple tables and graphs.

Results

A total of 150 students belonging to II year, III/I and III/II were approached for the study. 50 students each were taken from each semester. The mean age of respondents was 21.02 ±1.59 years.

Knowledge regarding Epidemiology of Hepatitis B Virus

86.7 % of the medical students had correct knowledge about Hepatitis B virus though only 66 % of II year students knew about the virus as compared to III year (96%) students. The difference between the knowledge of II and III year medical students was found to be statistically significant at 95% confidence interval (Z=4.28). 64 % of medical students had the knowledge regarding antigens of hepatitis B virus. However, very few students of II year had the knowledge as compared to III year students .Regarding Antigens appearing first in blood and antigens determining infectivity the overall knowledge was fair but it was very low among II year students .The knowledge about mode of transmission was less in II year students as compared to III year students (Fig. 1).

![Knowledge regarding Epidemiology of Hepatitis B Virus](image)

Knowledge regarding transmission of Hepatitis B

Majority of the medical students had correct knowledge regarding mode of transmission however, the knowledge was found to be less among II year students as compared to III years students .The knowledge about transmission of Hepatitis B through sexual route (74%) by used needles and syringes (83%) by blood transfusion (87%) and through vertical transmission (78% ) was fairly high among overall medical students, however, only (20-40% ) of the II year medical students had correct knowledge regarding the same (Fig. 2).

Knowledge regarding prevention of Hepatitis B

The study reveals that majority of the III year students knew about the vaccine type , vaccination schedule ,type of syringes ,route of administration ,safe disposal of syringe and needles and other preventive strategies .Very few second year students had correct knowledge regarding the same (Fig. 3).
Knowledge regarding Post Exposure Prophylaxis for Hepatitis B

The students were asked about risk and post-exposure prophylaxis of Hepatitis B. Majority of the students of III year gave correct answers of the questions while only 20% of the II year students had the correct knowledge regarding PEP for hepatitis B.

Vaccination Status among medical students

84% of the medical students in II year were completely vaccinated for hepatitis B as compared to III year students were only 50-60% of the students were completely vaccinated. The vaccination was found to be less among females as compared to males though it was found to be statistically insignificant in III year students but statistically significant difference in II year students at 95% confidence interval (X²=4.50, p<0.05) (Table 1).

Reasons for not taking vaccine of Hepatitis B

29.3% of the medical students were not vaccinated for Hepatitis B. When asked about reasons for non vaccination 36% of the medical students admitted that they think vaccination is not necessary for them. 28.50% of the students had no information regarding the same. 14.3% of the students were afraid of needles.

Discussion

HBV infection is caused by DNA virus with incubation period of 21-135 days. Hepatitis B virus (HBV) infection is an occupational risk for physicians and surgeons especially in developing countries where a carrier rate is

<table>
<thead>
<tr>
<th>Vaccination status</th>
<th>II year</th>
<th>III / 1 batch</th>
<th>III/ II batch</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys</td>
<td>Girls</td>
<td>Total</td>
</tr>
<tr>
<td>Hepatitis B vaccine taken</td>
<td>21</td>
<td>13</td>
<td>34</td>
</tr>
<tr>
<td>Hepatitis B vaccine not taken</td>
<td>4</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>Percentage of vaccinated students</td>
<td>84%</td>
<td>52%</td>
<td>68%</td>
</tr>
<tr>
<td>Chi-square with Yates correction</td>
<td>X²=4.50, p&lt;0.05</td>
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</tr>
</tbody>
</table>
about 4%. HBV infection kills about 1.1 million people globally every year\textsuperscript{6}. However, incidence of HBV infection could be brought down by giving proper education regarding its transmission and immunization of all medical students with Hepatitis B vaccine.

The level of knowledge regarding epidemiology was fairly good among III year medical students as compared to II year students. There is no formal school based health education in our country which may be the important reason of lower knowledge of Hepatitis B among II year students. Similar level of knowledge was found in the medical students of Delhi\textsuperscript{7}. However, the medical final year students are more knowledgeable as compared to students of Bangladesh and that of Vietnam\textsuperscript{8}.

Scientific knowledge regarding HBV transmission is essential for medical students. They can take proper protection while their clinical posting as HBV is 50 times easier to transmit than HIV\textsuperscript{9}. The study revealed majority of the final year medical students and very few students of II year had correct knowledge regarding transmission of the disease in contrast to first year students in Karachi who had better knowledge regarding the transmission\textsuperscript{10}.

It is common information and many students have concluded that compared to other health care workers, medical students were more at the risk of exposure to risk factors of hepatitis B and especially per-cutaneous injuries\textsuperscript{11, 12, 13, 14, 15, 16, 17}. Final year students had better knowledge regarding prevention of HBV as compared to first year students. There is need for more focused efforts and preventive measures to be put in to protect the medical student’s from the deadly infection. Regarding PEP only 20% of the second year students were aware which calls for well structured health education programs stressing on the misconceptions prevalent among the students.

In the present study 63% of the students were vaccinated against Hepatitis B. This was higher than the vaccination status of 42% reported among medical students of Lahore and the vaccination status in a similar study conducted in Bombay\textsuperscript{18}. However, in the present study vaccination status of medical students was lower than the vaccination rate of 80% in medical student, highlighted by a similar study conducted in Odisha, India\textsuperscript{19}.

The present study concludes that there is a lack of awareness among the medical students entering into the profession about the hazards of Hepatitis B, its transmission and mode of transmission. Moreover all the students were not vaccinated against Hepatitis B, which made them more vulnerable to the disease. Since medical students are at increased risk of acquiring needle stick injury, and increased prevalence rate of Hepatitis B in India, medical students should be routinely vaccinated upon entry into the medical college. It is recommended that a policy be implemented for complete vaccination and health education of all medical students in first year in all medical colleges in our region. However, antibody titers should be routinely checked among all vaccinated because of non-response to the first series of vaccination.

References


