Knowledge of medical students about Hepatitis B

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ABSTRACT: The aim of this study was to determine the knowledge level of graduate medical students about Hepatitis B. The material of this study was 109 questionnaires, answered by an equal number of students. According to the results, the knowledge of graduate medical students on Hepatitis B was in quite satisfactory level concerning most of the topics.

Key Words: HBV, Medical students, Questionnaire.

INTRODUCTION

Hepatitis B is the world’s most common blood borne viral infection, numbering approximately 350,000,000 carriers worldwide¹. The virus is transmitted mainly by blood, while potential complications of infection are chronic hepatitis, cirrhosis and hepatocellular carcinoma. In Greece, selective vaccination of high-risk groups was initiated in 1982, and in 1998 hepatitis B virus vaccination was introduced to the National Immunization Program². Nowadays in Greece most infections are acquired through horizontal transmission to unvaccinated children from HBsAg(+) household members, followed by perinatal transmission³.

Doctors are a well defined group who has an increased risk of hepatitis B virus (HBV) infection through contact with patients and needlestick injuries, especially during the professional training period. In fact, HBV has been clearly documented as being far more infectious than Human Immunodeficiency virus (HIV) in occupational health care settings⁴.

The study population comprised of students at the 5th and 6th year of Medical School (56 and 53 at the fifth and sixth year of studies respectively). The mean age of the respondents was 22.95 (range 22-29 years old). Fifty-two of the students were male (47.7%) and fifty-seven were female (52.3%).

The material of this study was 109 questionnaires. Each questionnaire was composed by 18 questions with 34 subquestions, which were recapitulated in 5 sections: 1) general knowledge on Hepatitis B virus and the disease, 2) the transmission of the virus, 3) the prevention from the disease, 4) personal data about vaccination and 5) self-criticism.

Statistical analysis of the results was performed by SPSS (version 11.5). For the different students’ group, the mean age and the proportion of correct answers in each section and subquestion of the questionnaire were calculated by means of descriptive statistics. The chi-square test was used to compare the rates of correct answers among different groups.

According to the results, 57.4% of the students answered correctly the questions related to general knowledge on the virus and the disease, 86.2% of them knew how the virus is transmitted, while only 46.8% of the students were informed about the pre-
vention from the disease. On the other hand, 80.7% of the students had been vaccinated before their clinical practice (Table).

Statistical analysis of the results demonstrated that there is a statistically significant difference only in the first category of questions. The fifth year’s students scored 55.36% while the sixth year’s ones scored 62.26% ($p = 0.047$). Likewise, men scored 53.35% and women 60.95% ($p = 0.0465$) (Table). Nevertheless, analyzing each subquestion, we found some other intriguing results. Firstly, students were asked to give the meaning of some terms concerning the HBV virus (HBV, HBsAg, HBeAg, Anti-HBs, Anti-HBc, Anti-HBe, Dane corpuscle). It is remarkable that 80% didn’t recognize the HBeAg. In the question concerning the possible outcome of the infection by HBV only 30% knew that “total recovery” is the most possible one.

As far as their knowledge about prevention, the students knew that the vaccination against the virus is obligatory for children (78.9%), the way of administration of the vaccine (69.72%), but they were unaware of the scheme of vaccination (22.94%) and the content of the vaccine (20.18%). The question with the lowest score (15%) referred to the width of temperature of preservation of the virus. On the contrary, almost all the students (88.8%) knew the modes of transmission of HBV.

Moreover, we examined the students’ opinion about working with HBV carriers in hospitals. Only 47% fully accepts them. We also checked their readiness to deal with a possible injury with a needle, previously used on an HBV carrier. Most of the students (76%) would have reacted by using immune serum. However, half of them would have omitted critical procedures, such as wound cleansing and using antiseptics.

Furthermore, since Hepatitis B is a sexual transmitted disease, we asked the students to estimate how dangerous some sexual acts are, concerning the transmission of the virus. The students were aware of the fact that HBV is not transmitted by kissing or touching. Additionally, they considered anal and vaginal sex most dangerous, while oral sex was thought to be safer.

At the last question which concerned their criticism on self-knowledge, only 1% of the students declared self-confident about their knowledge on Hepatitis B, 39% of them considered themselves as medium informed, while the majority (60%) avoided answering the question directly.

Occupational risk of Hepatitis B infection is well known in medical workers, especially during the professional training period. Actually, occupational exposures during undergraduate medical school may involve between 11% and 50% of students. Our study demonstrated that the knowledge of senior undergraduate medical students of Aristotle University of Thessaloniki on Hepatitis B is in a satisfactory level concerning the transmission of the virus, while they are less informed about the general features of the virus. They are also found poorly informed about the prevention from the disease, although the majority of them were vaccinated before their clinical practice.

The level of general knowledge on HBV and the disease was higher amongst the final year’s students compared to the fifth year’s, while a similar study

### Table. Student’s knowledge in each of the 4 section of the questionnaire.

<table>
<thead>
<tr>
<th>Students group</th>
<th>Number of students</th>
<th>1. General knowledge on HBV and the disease</th>
<th>2. Transmission of the virus</th>
<th>3. Prevention from the disease</th>
<th>4. Vaccination</th>
</tr>
</thead>
<tbody>
<tr>
<td>5th</td>
<td>56</td>
<td>55.36%*</td>
<td>84.78%</td>
<td>41.58%</td>
<td>80.36%</td>
</tr>
<tr>
<td>6th</td>
<td>53</td>
<td>62.26%*</td>
<td>87.69%</td>
<td>55.07%</td>
<td>81.1%</td>
</tr>
<tr>
<td>Total</td>
<td>109</td>
<td>57.4%</td>
<td>86.2%</td>
<td>46.8%</td>
<td>80.7%</td>
</tr>
<tr>
<td>Male</td>
<td>52</td>
<td>53.35%*</td>
<td>82.7%</td>
<td>47.52%</td>
<td>75%</td>
</tr>
<tr>
<td>Female</td>
<td>57</td>
<td>60.95%*</td>
<td>89.4%</td>
<td>48.7%</td>
<td>85.96%</td>
</tr>
</tbody>
</table>

* Statistical significant ($p < 0.05$).
Another relevant study, carried out in Oman, revealed that most of undergraduate medical students (75%) were aware that HBV is a common cause of hepatitis and that 50.7% of them thought that HBV infection is preventable.

The majority of the students (86.2%) adequately knew the questions concerned the modes of transmission of the virus. Similar results were also observed in a study, conducted in a private medical university in Karachi.

The students failed to answer correctly most of the questions about the prevention from the disease, even though they had had themselves vaccinated.

Birmingham Medical School, on the other hand, made a similar study testing the knowledge of the students about the efficacy of hepatitis B vaccination, in which 38% of them were unaware of the risk of vaccine failure and consequent lack of protection. Also 32% of them assumed that immunity to hepatitis B virus after vaccination would be life long.

Another interesting aspect of our study was the student’s opinion on working with HBV carriers in hospitals. Only 47% fully accepted them, while 58% of medical students in Oman accepted a HBV infected student or colleague in the same classroom or working place. Moreover, the majority of them (63.2%) hesitated to take care of a HBV infected patient. Concerning this matter, in 1993, the health departments in the United Kingdom announced that those who were found to be HBsAg positive, without “e” markers, didn’t need to be excluded from any work. On the contrary, workers who had “e” markers (HBeAg positive) would have to be excluded from invasive procedures. Still, up to date medical universities in the UK have various policies on Hepatitis B. Some of them refuse admissions of students who are HBeAg positive (Durham), while in others, HBV carriers are guided by doctors suitably qualified in the occupational health service about modifying clinical contact with patients (Southampton).

We also checked our student’s readiness to deal with a possible injury with a needle, previously used on a HBV carrier. It is remarkable that most of them (76%) would react by using immune serum. However, half of them would omit critical procedures, such as wound cleansing and using antiseptics. It is also notable that in a study from University of Toronto, 54% of the students continued working and did not seek for medical advice after high-risk injuries (deep puncture, visible blood on device, or needle used in patient’s artery or vein). Additionally, many studies carried out among various categories of health-care workers including medical students, showed that exposure to blood or other human fluids was 9.3% in Florida and even higher (25.1%) in Nigeria.

In conclusion, the senior graduate medical students of Aristotle University of Thessaloniki are adequately informed about Hepatitis B, especially about the transmission of the virus. However there are still misconceptions regarding risk behaviors and prevention, something that could damage not only themselves as future professionals, but their patients as well.

For this reason, the findings of this study should be considered seriously by our Medical School, local health centers and disease control agencies, as it is essential preparing health care professionals with sufficient knowledge. Furthermore, well-structured health education programs stressing on such matters are needed and training in these areas should be started the earliest.
ΠΕΡΙΛΗΨΗ: Ο σκοπός της παρούσας μελέτης ήταν η αποτύπωση των γνώσεων των φοιτητών Ιατρικής του 5ου και 6ου έτους σχετικά με την Ηπατίτιδα Β. Το υλικό αποτέλεσαν 109 ερωτήματα, συμπληρωμένα από ίσαριθμο φοιτητές. Φαίνεται ότι οι γνώσεις των τελειόφοιτων της Ιατρικής Σχολής βρίσκονται σε αρκετά ικανοποιητικό επίπεδο όσον αφορά την Ηπατίτιδα Β.

Λέξεις Κλειδιά: Ηπατίτιδα Β, Φοιτητές Ιατρικής Σχολής, Ερωτηματολόγιο.

REFERENCES