ORIGINAL ARTICLE

FREQUENCY OF HEPATITIS B AND C IN PATIENTS SEEKING TREATMENT AT THE DENTAL SECTION OF A TERTIARY CARE HOSPITAL

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Background: Hepatitis B and C are serious health problems and a major cause of liver disease worldwide. Like medical patients, dental patients are at increased risk of getting hepatitis B and C viral infection during various procedures. Keeping in view the rising incidence of hepatitis B and C in Pakistan, it was considered important to know about the frequency and distribution of HBV and HCV in patients undergoing various procedures during treatment in dentistry section. Methods: This study was based on the review of the records of the patients visiting the dental section of Ayub Teaching Hospital Abbottabad between April to December 2014. The Secondary data of 3549 patients who visited the dental section for treatment during this period was used for this study. Results: Male patients constituted 53.9% (1914) and female patients were 46.1% (1635) of total screened patients. Total infection with hepatitis B and C were found in 4.1% (147) of the screened patients. Out of these infections, hepatitis C was found in 66% (97) patients and hepatitis B in 32.7% (48), whereas 1.3% (2) of the patients had both the infections. Infection with hepatitis B and C viruses was detected in 39.5% (58) male patients and 60.5% (89) female patients. Alarmingly high proportions of new 75.5% (111) cases of both the infections were detected during the nine month period. Conclusion: Due to high prevalence of HBV and HCV among patients coming for dental treatment, it is recommended that regular screening for HBV and HCV be performed on every patient before carrying out any procedure upon.

Keywords: Hepatitis B, Hepatitis C, dental care, screening

INTRODUCTION

Hepatitis B and hepatitis C are serious health problems worldwide. The World Health Organization has estimated that about 3% of the world population is infected with hepatitis C (HCV). Each year about 3–4 million persons are newly infected 70% of who develop chronic hepatitis. Hepatitis C is responsible for 50–70% of all liver cancer patients.4 Hepatitis B virus (HBV) infection is global health problem and it is estimated that about 1.7 billion persons are infected worldwide.2 There are about 4 billion people suffering from chronic HCV infection.3

Pakistan is one of the countries affected badly with HBV and HCV. Prevalence of HCV in Pakistan is higher than other countries of the region.4 According to Pakistan Medical Research Council(PMRC), overall prevalence of HBV was 2–5% and HCV was 4.9 % in general population of Pakistan.5 Another study reported 3% prevalence of HCV (range of 0.5–31.9%) showing significant variations in different areas of country.6

Being blood born infections, HBV & HCV are common among patients who have undergone as a recipients of blood, organ or tissue grafts and health care workers who sustain needle prick injuries while treating infected patients.7,8 HBV or HCV present in the saliva or blood of an infected patient is a major concern in dental care procedures. The aim of this study was to estimate the frequency of HBV and HCV infections among male and female patients who attended dental section of Ayub Teaching Hospital Abbottabad.

MATERIAL AND METHODS

In this study, we used secondary data of patients who attended the dental section of Ayub Teaching Hospital Abbottabad from April to December 2014. All patients irrespective of age and gender were included in this study. Data was analysed using SPSS-16.

RESULTS

A total of 3549 patients visited the dental unit during the study period. Out of these 1914 (53.9%) were male and 1635 (46.1%) were females. Table-1 shows the frequency of patients in three age groups

A total of 147 patients were found infected with HBV and HCV thus making 4.14% of the screened population. Among these 147 infected cases, 111
(75.5%) were newly diagnosed cases of HBV and HCV. Table 2 and 3 describes gender wise status of HBV and HCV infections.

Table 1: Frequency and HBV and HCV in different age groups (n=147 age)

<table>
<thead>
<tr>
<th>Age groups</th>
<th>HBV cases</th>
<th>HCV cases</th>
<th>HBV+HCV</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–15</td>
<td>7 (4.8%)</td>
<td>15 (10.2%)</td>
<td>0</td>
<td>22 (15.00%)</td>
</tr>
<tr>
<td>16–50</td>
<td>23 (15.6%)</td>
<td>46 (31.5%)</td>
<td>1 (0.7%)</td>
<td>70 (47.6%)</td>
</tr>
<tr>
<td>Above 50</td>
<td>18 (12.2%)</td>
<td>36 (24.5%)</td>
<td>1 (0.7%)</td>
<td>55 (37.4%)</td>
</tr>
<tr>
<td>Total</td>
<td>48 (32.7%)</td>
<td>97 (66%)</td>
<td>2 (1.4%)</td>
<td>147 (100%)</td>
</tr>
</tbody>
</table>

Table-2: Gender wise frequency of HBV and HCV (n=147)

<table>
<thead>
<tr>
<th>Gender</th>
<th>HBV cases</th>
<th>HCV cases</th>
<th>HBV+HCV</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>22 (15%)</td>
<td>35 (23.8%)</td>
<td>1 (0.7%)</td>
<td>58 (39.5%)</td>
</tr>
<tr>
<td>Female</td>
<td>26 (17.7%)</td>
<td>62 (42.2%)</td>
<td>1 (0.7%)</td>
<td>89 (60.5%)</td>
</tr>
<tr>
<td>Total</td>
<td>48 (32.7%)</td>
<td>97 (66%)</td>
<td>2 (1.4%)</td>
<td>147 (100%)</td>
</tr>
</tbody>
</table>

Table 3: New and Old cases of HBV and HCV

<table>
<thead>
<tr>
<th>Gender</th>
<th>Known cases</th>
<th>New cases</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>4 (11.1%)</td>
<td>10 (27.8%)</td>
<td>14 (41.6%)</td>
</tr>
<tr>
<td>Female</td>
<td>8 (22.2%)</td>
<td>14 (38.8%)</td>
<td>22 (61.1%)</td>
</tr>
<tr>
<td>Total</td>
<td>12 (33.3%)</td>
<td>24 (66.7%)</td>
<td>36 (100%)</td>
</tr>
</tbody>
</table>

DISCUSSION

Hepatitis B and C, being an important global public health problem has become a focus of attention for research. The present study was an attempt to access the magnitude of this problem in patients attending a tertiary care dental unit of Khyber Pakhtoonkhwa while undergoing a dental procedure. Overall 4.14% of patients were found positive for HBV and HCV infection with 60.5% female affected patients. Frequency of HCV infection was found high 97 (66%) as compared to HBV infection that constituted 48 (32.7%) of the cases.

Our study reveals that although general influx of male patients was more in patients being screened out but female population came to be affected more with HBV and HCV infections. Prevalence of hepatitis C is appeared more as compared to hepatitis B. Middle age group is affected more as compared to younger and elder age group. A large number of newly infected cases of HBV and HCV came out of the study which is an alarming sign for both the patients and health care providers.

Study by Illyas et al has gender wise different results as compared to our study which was carried out among college students.10 The study shows preponderance of males over females in case of both hepatitis B and C. Hepatitis B was found in 2.15% of male sample and 0.6% of female sample while hepatitis C was found in 2.6% of male sample and 1.68% of female sample. Although there is minor decrease in viral infection of hepatitis B and C in female population but it may be due to the decrease in sample size of females or over consciousness of female students about health care.

A study carried out by Mohamed et al in Libya has shown the involvement of 0.99% female and 68% involvement of male population in a survey conducted for HBV and HCV infection.11 It also showed a prevalence of HBV as 5.82% and prevalence of HCV as 13.78% in all groups of surveyed population. Younger age group appeared to be affected as 19% in both the cases of HBV and HCV.

Another study by Memon et al dictates preponderance of hepatitis C over hepatitis B.12 In this study 3.17% of the infected patients were cases of hepatitis B and 13% of the infected cases of hepatitis C.

One finding which is additional in our study is the comparison of newly diagnosed cases verses old known cases of HBV and HCV. In spite of a lot of search, no single study was found comparing the newly diagnosed cases verses existing cases of HCV and HBV. The purpose of our comparison of new to old infected cases HBV and HCV was to address its prevention and cure. If this factor in fact is not addressed in any related study, can be a very good addition in our study.

Many studies has shown that known patients with hepatitis B and C are a greater risk in term of spreading infection among clinical staff and society while operating such patients.13–16

CONCLUSION

Keeping in view the predominance of female population with respect to prevalence of HBV and HCV, preponderance of HCV over HBV in general population, greatest rate of HBV and HCV infection in middle age group and emergence of new cases of infection of hepatitis B and hepatitis C, it is recommended that every patient must be screened out for HBV and HCV before proceeding for any dental procedure.

AUTHORS CONTRIBUTION

Nofil Ahmed and Ans Ahmed collected the data. Shah Mohammad Ghaus finalized the data; Muhammad Fayyaz searched the literature and drafted the manuscript. Iram Abbas critically reviewed the manuscript. All the authors read and approved the final manuscript.

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