Prevalence of Hepatitis B and C Infection in District Dir, Khyber Pakhtunkhwa, Pakistan

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Abstract: Hepatitis is worldwide major health issue especially in developing countries. Hepatitis virus is the leading cause of morbidity and mortality in rural area of Pakistan. The main aim of the research study was to estimate the prevalence of HBV and HCV in the patients of District Dir. As a whole 765 patients were diagnosed for hepatitis within four months period (1 Dec 2014 to 31 Mar 2015). For HB-Ag and anti-HCV antibodies all the blood samples were examined by Immune-chromatographic kit. The total occurrence of HBV and HCV was found (2.6%) and (16.2%) respectively. High frequency was found (17.8%) in males followed by females (14.1%) Similarly, HBV and HCV were found to be more common among married individuals (17.4%) as compared to un-married (13.5%). Moreover, the superior frequency of HBV and HCV was recorded in patients with age group of greater than 60 years (40%) followed by age group of 21-40 years (15.2). Significance association was found among the age groups. The present study provides the primary information about HBV and HCV prevalence due to lack of public health awareness on transmission of disease. More reliable methods for detection of hepatitis virus, management and control to overcome its future spread are required. It is recommended that public health authorities should instruct the general public concerning prevention.

Key words: Hepatitis B • Hepatitis C • Antigen • ICT • Dir

INTRODUCTION

Viral Hepatitis is the infection of liver caused by liver attacking viruses (Hepatitis A, B, C, D, E, G) and is a major cause of morbidity and mortality [1]. HBV and HCV infections are important for causing chronic hepatitis and being leading causes of cirrhosis and hepatocellular carcinoma [2]. The infection Hepatitis B and Hepatitis C is a major health problem throughout the world, especially in developing countries [3]. Hepatitis cause liver inflammation, Hepatitis B and C both can lead to liver failure, liver cirrhosis and may finally lead to last phase of liver illness. Hepatitis C infection has severe sequale; it can develop acute hepatitis, chronic hepatitis or a chronic carrier state and hepato-cellular carcinoma (HCC). About 50% of all HCV infections develop to chronic liver disease [4]. In Pakistan majority of HCC are linked with Hepatitis C virus (HCV) Up to now vaccine is not available for HCV and cost of treatment is extremely high [5].

Hepatitis B and C are mostly transmitted as a result of blood to blood contact, injury with contaminated instruments, sharing of contaminated needles, sexual contact and also through parental transmission from mother to child [6]. The main route of HCV spread in Pakistan are use of contaminated needles, syringes and instruments in medical practice, transfusion of infected
MATERIALS AND METHODS

Collection of Samples: A study was conducted in Islamabad Medical Laboratory, Teimargara K.P.K Pakistan from 1st Dec 2014 to 31 Mar 2015. A total 765 blood samples were collected from Hepatitis B and C suspected patients. For Individual information included history, sex, age and maternal status were obtained by interviewing the patients.

Immuno-Chromatographic Tests (ICT): A total of 765 serum samples of patients were screened for Hepatitis B surface Ag (HBs-Ag) and Anti-HCV by Immuno-chromatographic strep according to the instruction of the manufacturer. Prevalence of Hepatitis B and C in present study were classified according to questioners were assembled in sex, marital status and age wise [26, 27].

RESULTS

Out of 765 patients, a total 144 (18.8) patients were found positive for HBV and HCV. Among these 20(2.6%) and 124 (16.2%) were positive for HBV and HCV respectively (Graph 1).

Out of 765 patients, Four hundred and twenty five (425) were males and three hundred and forty (340) were females. Among males patients HBV and HCV 124 (2.8%) and 76 (17.8%) respectively with overall prevalence of 20.7%. Similarly among females patients HBV, HCV 8(2.3%) and 48(14.1%) respectively with overall prevalence of (16.4%). Out of 765 patients 521 married and 244 were unmarried. Among the married patients HBV and

Graph 1: Overall prevalence percentage of HBV and HCV in screened patients

Table 1: Gender wise prevalence of HBV, HCV

<table>
<thead>
<tr>
<th>Gender</th>
<th>Total no of sample</th>
<th>No of positive sample</th>
<th>No of positive HBV</th>
<th>No of positive HCV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>425</td>
<td>88(20.7%)</td>
<td>12(2.8%)</td>
<td>76(17.8%)</td>
</tr>
<tr>
<td>Female</td>
<td>340</td>
<td>56(16.4%)</td>
<td>8(2.3%)</td>
<td>48(14.1%)</td>
</tr>
<tr>
<td>Total</td>
<td>765</td>
<td>144(18.2%)</td>
<td>20(2.6%)</td>
<td>124(16.2%)</td>
</tr>
</tbody>
</table>
Table 2: Prevalence of HBV and HCV in married and unmarried

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>No of Samples</th>
<th>No. of positive sample</th>
<th>No of positive HBV</th>
<th>No. of positive HCV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>521</td>
<td>104(19.6%)</td>
<td>14(2.6%)</td>
<td>91(17.4%)</td>
</tr>
<tr>
<td>Un married</td>
<td>244</td>
<td>40(16.3%)</td>
<td>6(2.4%)</td>
<td>33(13.5%)</td>
</tr>
<tr>
<td>Total</td>
<td>765</td>
<td>144(18.8%)</td>
<td>20(2.6%)</td>
<td>124(16.2%)</td>
</tr>
</tbody>
</table>

Table 3: Age wise distribution of HBV and HCV

<table>
<thead>
<tr>
<th>Age groups</th>
<th>Total no. of Samples</th>
<th>No of Positive Samples</th>
<th>HBV Positive</th>
<th>HCV Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>0—20</td>
<td>105</td>
<td>9(8.57%)</td>
<td>2(1.9%)</td>
<td>8(7.6%)</td>
</tr>
<tr>
<td>21—40</td>
<td>195</td>
<td>21(10.7%)</td>
<td>4(2.05%)</td>
<td>19(9.7)</td>
</tr>
<tr>
<td>41—60</td>
<td>335</td>
<td>55(16.4%)</td>
<td>9(2.6%)</td>
<td>51(15.2%)</td>
</tr>
<tr>
<td>&gt;60 years</td>
<td>130</td>
<td>59(45.3%)</td>
<td>5(3.8%)</td>
<td>46(35.3%)</td>
</tr>
<tr>
<td>Total</td>
<td>765</td>
<td>144(18.8%)</td>
<td>20(2.6%)</td>
<td>124(16.2%)</td>
</tr>
</tbody>
</table>

Graph 2: Gender wise prevalence of HBV and HCV

Graph 3: Prevalence of HBV and HCV in Married and non married persons

Graph 4: Age wise prevalence of HBV and HCV
HCV was found 14 (2.6%) and 91 (17.4%) respectively with overall prevalence of 20.1%. Similarly among the unmarried patients HBV and HCV 6 (2.4%) and 33 (13.5%) respectively with overall prevalence of 15.9%.

The rate of HBV concerning the age group of patients ranging from 0-20, 21-40, 41-60 and greater than 60 years of age was found 02 (1.9%), 04 (2.05%) and 09 (2.6%), 5(3.8%) respectively (Table 3). Similarly, HCV in patients with age group ranging from 0-20 years, 21-40, 41-60 and greater than 60 years of age was found 08 (7.6%), 19 (9.7%), 51 (15.2%) and 46 (35.3%) respectively.

**DISCUSSION**

Several studies have been conducted about the occurrence of Hepatitis B and C disease in a variety of inhabitants groups in Pakistan. In current study contrast to HBV anti-HCV positivity was found much higher. Gul-e-atif et al. [17] reported Prevalence (2.65%) for HBV and (10.42%) for HCV patients. This result is much similar to that of the current study, reported low prevalence of Hepatitis B contrast to Hepatitis C. In another study of Irfan et al. [18] reported low prevalence of Hepatitis B contrast to Hepatitis C. Moreover, the prevalence of Hepatitis B in the present study was found 2.6%. Gul-e-atif et al [17] reported the prevalence of Hepatitis B 2.6% and Chaudhary et al. [19] reported 2.8%. So these results are in reliable with that reported by other studies, as the occurrence of Hepatitis B in different parts of country is among 2.11% to 5.46% Chaudhary et al. [19].

Risk reason among the positive cases may be the surgical interference, because it has been projected that citizens of these areas selected injections for fever and common sickness. These injections are more frequently provided by informal, unqualified health staff. Moreover patients ready to pay extra charge to physician’s for injections but will not pay for oral medications. In addition, sterility of injections not maintained frequently, due to economic restrictions and lack of knowledge between the healthcare providers and the population in general Ali et al. [20] frequency of HBs-Ag and anti-HCV antibodies higher in male as contrast to females Wasfi and Sadek [21]. In this study same conclusion were obtained about high occurrence of Hepatitis B and C in man contrast to women. Prevalence of Hepatitis is higher in males might be due to truth that men make more ordinary visits to barber and they may be more probably to get injured and may share equipments. Moreover, male also like to have numerous sex contacts and go behind insecure sex. In this study the prevalence of Hepatitis B and C was found higher in married patients followed by un-married patients.

The outcome of this study was agreement with the outcome of Ayele and Solomon [22], reported the Hepatitis B and C prevalence is higher in married patients. The occurrence of Hepatitis B and C is higher in about 60 year followed by the age group of 41-60 years result of this study were also concluded in several studies that the occurrence of hepatitis is increases until the age of 30 years and it rises even higher between those over the age of 40 years Rey-Cuillé et al. [23] and Abdel-Hady and Kelly [24] and Triki et al. [25].

**CONCLUSION**

This study that Hepatitis B prevalence is comparatively low compared to Hepatitis C. In addition, among males high prevalence was recorded than females. It is suggested that vast care should be implemented during surgical measures or treatments and blood transfusions. Further awareness movement against Hepatitis B and C infections should be approved to instruct the common people on the risk factors and route of transmission in order to decrease the rate of infection.

**REFERENCES**


