FREQUENCY OF HEPATITIS C VIRUS IN PATIENTS WITH DECOMPENSATED CIRRHOSIS OF LIVER IN FAISALABAD

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ABSTRACT

OBJECTIVE: To assess the frequency of Hepatitis C viruses in patients with decompensated cirrhosis of liver at a tertiary care hospital. MATERIALS AND METHODS: It is a descriptive study conducted at Medical unit-III Allied Hospital Faisalabad from January 2005 to June 2005. 112 patients were enrolled after taking verbal consent. After complete physical examination and investigations a sample size of 100 patients was calculated using 5% level of significance and margin of error as 5%. RESULTS: In a total of 100 patients 66 were Hepatitis C virus positive, 20 patients were found to be Hepatitis B virus positive. 9 patients were both Hepatitis B and C virus positive, 5 patients were found negative on virus screening with Elisa method. CONCLUSION: Hepatitis C virus is the most common cause of decompensated liver disease. It is the need of the hour to create more awareness and to launch educational campaigns regarding the modes of spread and prevention against Hepatitis C virus and to increase the compliance of Hepatitis B virus vaccination.

KEYWORDS: Decompensated cirrhosis, Hepatitis C virus, Hepatitis B virus, Frequency.

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INTRODUCTION

Cirrhosis is a serious and irreversible disease. It is the end result of hepatocellular injury that leads to both fibrosis and nodular regeneration. It results from variety of disorders, can occur at any age and is a major cause of mortality and morbidity worldwide. WHO has estimated that cirrhosis is responsible for 1.1% of all deaths. Cirrhosis and chronic liver disease comprises the 10th most common cause of death in USA. The estimated prevalence of cirrhosis and chronic liver disease in USA is 400,000. Nothing is known about such figures in Pakistan but definitely the problem seems much bigger than what can be thought. Cirrhosis frequently manifests itself in younger adults and is an important cause of premature deaths. Usual presentations are upper gastrointestinal bleed, ascites, hepatic encephalopathy, hepatorenal syndrome and hepatocellular carcinoma. Though
there are various causes but 20% among them still remain undiagnosed.3

MATERIALS AND METHODS

Hepatitis C virus is a common cause of mortality in Pakistan. The main aims and objectives of this study is to find out the etiological prevalence of HCV in patients of decompensated cirrhosis of liver in Faisalabad region. This study was carried out in the Medical Unit-III of Allied Hospital, affiliated with Punjab Medical College Faisalabad.

Faisalabad is the third biggest city of Pakistan and Allied Hospital serves as a tertiary center for a number of densely populated areas. No such study has been done in the recent past. So by this study we are able to know the prevalence of Hepatitis C virus in the patients of decompensated cirrhosis of liver in this area. This study was carried out on 100 patients of decompensated cirrhosis of liver presenting either with ascites, hepatic encephalopathy, jaundice or coagulopathy and upper gastrointestinal bleed or malena presenting in out patient and emergency department. It was conducted from January 2005 to June 2005. Informed consent was taken and detailed clinical history, physical examination and investigations required to establish the diagnosis were carried out. Diagnosis of cirrhosis and decompensation was based on clinical evaluation and investigations. A proforma containing the patient’s profile, etiological prevalence and basis of diagnosis was filled in each case.

Virological tests were done in the Department of Pathology. HbsAg and anti-HCV were studied in all the patients. Serum samples were tested by the micro-particle capture enzyme immunosassay according to the manufacturer’s instructions, using kits from Abbott Laboratories (North Chicago, IL): IMx HbsAg (Hepatitis B surface antigen) IMx CORE for IgG, HbcAb and second and third generation enzyme linked immunoassortent assays (ELISA 2 and ELISA 3) for the detection of anti-HCV were used16-17. In this descriptive study statistical analysis was carried out using SPSS version 8.

RESULTS

Our study indicated that HBV and HCV positive adult men are more than the infected women. In contrast of 43% infected women the percentage of men was found to be 57%. This slightly higher incidence in men is also recorded in other cities of Pakistan in various studies conducted over there.21-22 but this does not correspond with total dominance quoted in related studies26.

This study showed that the mean age in our patients was 41.09 years with a standard deviation of 13.97 years. 41-50 years age group constituted majority of the patients. 34.8% were females and 35% males were found to be suffering from this grave disease. 51-60 years age group followed. This age range was similar to what has been noted in other studies24,25.

Majority of our patients were from lower socio economic status i.e. 60% as compared with 6% only from the upper socio economic class. We were unable to give specific reasons for that however this corresponds well with drainage area of our hospital, catering needs of poor and deprived.

It was shown in our study that prevalence of HCV in patients of decompensated cirrhosis is much higher as compared to HBV. This was found to be 59% in males and 51.1% in females, as compared 12.2% and 13.9% of HBV in males and females detected respectively. So percentage of HCV was much higher and is the major causative factor for chronic liver disease, a fact that has been proven in various national and international studies. A study by Sherlock et al and Alter et al estimated that there are 300 million carriers of HCV virus worldwide and about 2.5 million in Europe.27,28. HBV is much less prevalent than HCV that has been proved by our study as well. HBV is on decline after the inclusion of its vaccination in EPI of Pakistan.

The results of our study showed that majority of the patients 71 (71%) were admitted through emergency, while 29(29%) were through outpatient clinic. 57% were male and 43% were female. Considering the social status of the patients’ majority of them belonged to low socio economic class 60%, 34% to middle and only 6% to upper class. Mean age was 41.09 years with standard deviation of 13.97 years. Commonest age group involved was 41-50 years (34.8% in males, 35% in females.) Break up of the patients according to viral status has been given in Table No: II and II.
TABLE-I: FREQUENCY HBV AND HCV AMONG THE MALE PATIENTS.

<table>
<thead>
<tr>
<th>Viral Status</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBV</td>
<td>7</td>
<td>12.2</td>
</tr>
<tr>
<td>HCV</td>
<td>34</td>
<td>59.6</td>
</tr>
<tr>
<td>HBV and HCV</td>
<td>8</td>
<td>14.0</td>
</tr>
<tr>
<td>NIL</td>
<td>8</td>
<td>14.0</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
<td>100</td>
</tr>
</tbody>
</table>

TABLE-II: FREQUENCY HBV AND HCV AMONG THE FEMALE PATIENTS

<table>
<thead>
<tr>
<th>Viral Status</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBV</td>
<td>6</td>
<td>13.9</td>
</tr>
<tr>
<td>HCV</td>
<td>22</td>
<td>51.1</td>
</tr>
<tr>
<td>HBV and HCV</td>
<td>9</td>
<td>20.9</td>
</tr>
<tr>
<td>NIL</td>
<td>6</td>
<td>13.9</td>
</tr>
<tr>
<td>Total</td>
<td>43</td>
<td>100</td>
</tr>
</tbody>
</table>

Majority of the patients were affected from HCV (59.6 males and 51% females). This was followed by the patients suffering from both HBV and HCV related liver disease (14% males and 20.9 females). Table No 3 identify the percentage of risk factors involved in the spread of these deadly viruses. Majority of the patients were with the history of I/V of I/M drug abuse (32%) followed history of dental procedures 16% and 12% with a history of shave from barbers (12%).

TABLE-III: FREQUENCY OF RISK FACTORS AMONG THE PATIENTS

<table>
<thead>
<tr>
<th>Risk Factors</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV/IM drug Abuse</td>
<td>32</td>
<td>32</td>
</tr>
<tr>
<td>Blood group Testings</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Blood Transfusion</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Operation</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Dental Extraction</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Heterosexual Contact</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Medical Employment</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Shave by Barber</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Tattooing</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Jaundice in Family</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

DISCUSSION

Causes of cirrhosis vary from country to country and also in the geographical areas of same country probably due to variety of local factors that determine the spectrum of diseases but viral infection is the most common cause worldwide. It infects an estimated 170 million persons and thus represents a viral pandemic, one that is five times as wide spread as infection with human immunodeficiency virus type 1. Other important factor found in our country is the primitive way of medical practice adopted by general practitioners, hakims, homeopathic doctors and quacks.

Viral hepatitis is the most common cause of chronic hepatitis and hepatocellular carcinoma worldwide. About one million people die each year from liver cirrhosis secondary to viral infection. It is often neglected because of its largely asymptomatic course and long-term complications. Poor knowledge about viral hepatitis is the main cause of its spread. which ultimately leads to hepatocellular carcinoma. People with intellectual disability are well known high-risk group for viral infection. Incidence in developing countries are much higher than developed countries.

Risk factors for HBV and HCV infection are: homo/heterosexual contacts, family history professional risk, major or minor surgical or dental operations, I/V drug abuse tattooing or piercing, previous transfusion, chronic renal failure under dialysis and previous hospitalization over 5 days.

Intravenous drug abusers continue to have high prevalence of infection mainly due to needle sharing. Situation is different in developing countries where viral screening is not generally available and transfusion of blood and blood products places the recipients at significant risk. Thus the protection is only by avoiding transfusion of unscreened blood and blood products, and use of non-sterilized instruments, needles and syringes.

Non-adherence to aseptic methods at health care facilities including hospital, clinics and laboratories may be playing a major role in spread of infection. Our finding that six of the patients were medical assistants suggested that health care personals are at high risk of acquiring infection.

While comparing developing countries, the poor socio economic condition, better religious ties, and different community setup shows that the epidemiology of viral hepatitis is definitely different.
in our country. Further studies are needed to provide more information on the mode of transmission of viruses in our society.

CONCLUSION
We conclude from our study that viral hepatitis is endemic in Pakistan. Presently liver cirrhosis due to viral hepatitis has become the fifth commonest cause of hospital admissions in most of the cities and is a major health problem of the country. A significant number of the patients present with decompensated liver disease and a similar number of patients are not aware of the disease till very late. Vaccination against HBV has helped us in protection against this hardy virus and the percentage of cirrhotic patients due to HBV is on decline. Currently HCV disease dominates our health scenario. There is no vaccine or protective immunoglobulin available against it.

There should be proper health education and public awareness programmes for the community about the mode of transmission of both these viruses in addition to preventive strategies like vaccination for HBV and mandatory scanning of blood products. By these measures one day we will be able to bottle this genie.

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ALL SUCCESSFUL PEOPLE HAVE A GOAL
NO ONE CAN GET ANYWHERE UNLESS HE KNOWS WHERE HE WANTS TO GO AND WHAT HE WANTS TO BE OR DO