ORIGINAL ARTICLE

ETIOLOGY OF LIVER CIRRHOSIS IN DISTRICT BUNER, KHYBER PAKHTUNKHWA

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ABSTRACT

Objective: The aim of our study was to determine the most common cause of liver cirrhosis in district Buner.

Material and Method: This was retrospective data review of patients record. Data was collected from patient's record register from January 2016 till December 2018. A total of 203 patients were included in this study. Data was collected and entered and analyzed in IBM SPSS 23.

Results: Out of 203 cases, 135(66.5%) were males and 68 (33.5%) were females. The main cause of cirrhosis was HCV (n=163, 80.3%) and HBV (n=27, 13.3%). Cryptogenic cirrhosis occurred in 9 cases (4.4%) while others were only 1% (n=2). HCV positivity was more in males (n=108, 66.25%) than in females (n=55, 33.7%) with a p value .022.

Conclusion: HCV is major cause of Liver Cirrhosis in our patients. HCV is more common in males than in females. Cirrhosis occurs most commonly in 4th, 5th and 6th decades of life after being infected with HBV and HCV.

Keywords: Liver cirrhosis, Hepatitis C virus, Hepatitis B virus, Pakistan.

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INTRODUCTION

Liver cirrhosis is rising globally at an alarming rate. Around 2 million deaths occur each year worldwide due to liver diseases. Approximately half of these are due to viral hepatitis and hepatocellular carcinoma. Currently, cirrhosis is on 11th position in causing deaths globally, and liver cancer is in the 16th position. Both of these diseases together are causing around 3.5% deaths globally. Cirrhosis is amongst the top 20 causes of disability-adjusted life years and years of life lost, accounting for 1.6% and 2.1%, respectively of the global burden[1].

Cirrhosis is defined as a diffuse process characterized by fibrosis that leads to the conversion of normal liver parenchyma into structurally abnormal nodules that results in progressive loss of function[2].

In the early disease process, there are very few symptoms, but as liver disease progresses, liver loses its ability to function. Signs and symptoms tend to develop, which include fatigue, weakness, itching, frequent infections, jaundice, palmar erythema, spider naevi, peripheral edema, congestive splenomegaly, bleeding tendency and decrease in cognitive function. In untreated later stages, the disease progresses slowly and gradually to severe complications such as hepatic encephalopathy, ascites, GIT bleeding, multiorgan failure, diabetes mellitus, and hepatocellular carcinoma[3].

The epidemiology of liver cirrhosis has great diversity when it comes to gender, ethnic groups, and geographic regions. Multiple causative factors explain the variation in the nature, frequency, and time of acquiring the disease[4]. Liver cirrhosis is an end-stage disease resulting from long-term infection by the hepatitis B virus, hepatitis C virus, and alcohol[5]. As the prevalence of obesity and diabetes is on the rise, NASH (non-alcoholic steatohepatitis) is also becoming one of the major causes. Other less common causes are metabolic liver diseases (Wilsons disease, hemochromatosis, alpha-1 antitrypsin deficiency, cystic fibrosis, glycogen storage diseases), cholestatic (biliary cirrhosis. primary sclerosing cholangitis), autoimmune hepatitis, venous outflow obstruction (veno-occlusive disease, Budd-Chiari syndrome), toxins and drugs (e.g., pyrrolizidine, alkaloids, methotrexate, oxyphenisatin methyldopa) and cryptogenic. Yet some causes are still debatable, including autoimmunity, mycotoxins, schistosomiasis and malnutrition.[2,6]

Liver cirrhosis is one of the principal causes of mortality and morbidity worldwide. The Prevalence of cirrhosis is likely to be underestimated as almost a third of the patients remain asymptomatic[6]. The worldwide prev-

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alence of CLDs (chronic liver disease) induced cirrhosis is 4.5 to 9%, with 633000 patients affected[7], resulting in 1 million deaths per year. It makes decompensated cirrhosis the 14th most common global cause of death[6].

Pakistan has the 2nd highest estimated prevalence of hepatitis C worldwide. In Pakistan, liver cirrhosis and its complications are frequent causes of hospital admissions. Liver pathologies, especially liver cirrhosis, is the chief liability on our health care institutions, reaching an epidemic level, and a significant cause of mortality in our setting[8]. There is an increase in the incidence and prevalence of liver cirrhosis in Pakistan, with HBV and HCV the leading cause in patients (90%) with chronic liver disease[9].

MATERIAL AND METHODS

This research was conducted as a retrospective data review. Data were collected from the patient's record register from January 2016 till December 2018. Data was recorded on proforma especially designed for this study. The research reported here was conducted in Bilal Medical Trust Hospital, a private hospital in District Buner. Buner is a district in the Malakand division of Khyber Pakhtunkhwa province in Pakistan. This hospital is a trust hospital and provides healthcare to different social classes of people all over Buner.

Patients having evidence of liver cirrhosis on ultrasound examination of the abdomen and those who were above the age of 10 years were included in the study.

Data was collected from record registers and entered in the proforma. The diagnosis of viral hepatitis (B and C) was considered when there was positivity for HBsAg and Anti-HCV antibodies. Liver cirrhosis was considered to be from alcohol consumption when there was a positive history of alcohol abuse and negative viral and autoimmune profile. When clinical history and laboratory data failed to identify any recognizable cause of liver cirrhosis, cryptogenic liver cirrhosis was considered. When the result for autoimmune markers such as anti-mitochondrial antibodies, were positive, primary biliary cirrhosis (PBC) was considered. In the group of 'other causes,' patients with hemochromatosis, autoimmune, and metabolic diseases were included.

Ethical approval was obtained from the Ethical Review Board of Prime Foundation, Peshawar Medical College, Warsak Road Peshawar. Data was entered and analyzed in SPSS 23. Chi-square test and 95% confidence intervals were calculated for percentages of cases for etiology and compared. A p-value of <0.01 was considered statistically significant.

RESULTS

Out of the total of 203 cases that were included in this study, 135 (66.5%) were males, and 68 (33.5%) were females. Figure 1 shows the distribution by age groups and etiology. A higher number of male patients were HCV positive (n=108, 66.25%) than female patients (n=55, 33.7%); this was statistically significant with a p-value of .022.

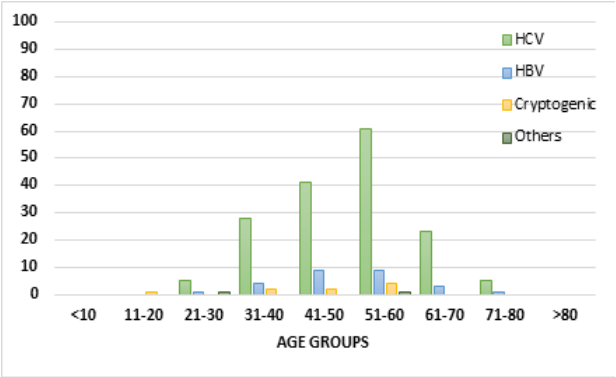

Fig 1: Etiology Vs. Age groups

DISCUSSION

Liver cirrhosis is becoming a burden on the global economy. For example, in the US alone, Razavi et al. estimated that the total healthcare cost associated with HCV infection may be as high as $6.5 billion annually[10]. Similarly, the cumulative healthcare cost associated with HBV infection is around $1.5 billion annually in the US and is rising annually[11].

According to the estimate of Pakistan Medical Research Council, HBV prevalence is around 2.5% or 5.6 million individuals[12]. Similarly, the council estimated HCV prevalence to be 4.9% or 8.8 million people[12]. Furthermore, the number of patients is increasing with each passing year. In our study, male cirrhotics were more than females (66.5% > 33.5%). A similar study conducted in district Swat also showed that males were more affected than females[13]. The travel of men to foreign countries to seek jobs[14], abuse of IV drugs, use of unsafe needles, blood transfusion, community barbershops, dental and surgical procedures by quacks (e.g., circumcision), ear-piercing tattooing and dialysis are the factors for the transmission of HCV and HBV in Pakistan[15].

Our study shows that HCV is more common than HBV in this region (80.3% > 13.3%). These results coincide with several studies conducted in Pakistan [13, 16]. Khan P et al. reported that the Swat district has higher number of HCV patients than HBV patients. In our study, we found that 4.4% of the cases were cryptogenic, with the extreme occurring at the age of 12. Another study conducted in Pakistan confirmed our findings by reporting 5% cryptogenic liver cirrhosis in their results[4].

HCV was more commonly present in age groups of 51-60 years (61%) and 41-50 years (41%). These findings correlate with the results reported by Raja NS et al.

They found that more than two-thirds of the individuals infected with HCV were between the ages of 40 and 50[15]. HBV was commonly present in age groups of 41-50 (9%) and 51-60 years (9%). A cohort study conducted on the IDPs (internally displaced persons) of the Malakand Division yielded similar results, in which the prevalence of HBV infection was more common in older individuals who were between the age of 46 and 60[17]. In our study, HCV was more common in males (66.25%) than in females (33.7%). Almani SA et al. concluded similar results. In their study, they reported that the number of male patients infected with HCV was double as compared to females[4]. A prospective study in the United States conducted between 1999 and 2002 also had similar results that the number of male individuals infected with HCV were higher than the female patients[18]. The main reasons being the abuse of IV drugs, sexual transmission, tattooing, barbers as stated by Raja NS et al.[15].

CONCLUSION

We conclude from this study that the hepatitis C virus is the significant cause of liver cirrhosis in our setting. HCV is more common in males than in females. Cirrhosis occurs mostly in the 4th, 5th and 6th decades of life after being infected with HBV and HCV.

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AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under

Muhammad N:	Study concept, data collection and analysis
Khan MH:	Data collection, writting and Correspondance
Jawaid HA:	Data collection and review.
Ali MO:	Data collection, analysis and review.
Shah SMA:	Data collection analysis and review.
Saeed S:	Data collection analysis and review.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.