

## Evaluation of Etiologic Profile of Liver Cirrhosis at a Tertiary Care Teaching Hospital: A Prospective Study

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### ABSTRACT

**Background:** Infection by hepatitis C is the major and prime cause of end stage liver disorder that requires liver transplantation. Cirrhosis can occur due to exogenous/ toxic, toxic/allergic, immunological/ autoimmune, or vascular disease or because of inborn error of metabolism. The present study was conducted with the aim to etiological causes of liver cirrhosis.

**Materials and Methods:** This study was done in the General medicine department, MGM Medical College, Indore, Madhya Pradesh, India. A predesigned proforma was used for the evaluation of data. A complete blood examination, liver and renal function tests were carried out. All the subjects were followed during their period of hospital stay. All the data was arranged in a tabulated form and analyzed using SPSS software.

**Results:** The present study enrolled 120 subjects; out of these 80 were males and 40 females. The mean age of the subjects was 45.87 $\pm$ 9.22 years. There were 49 (71%) males and 20 (29%) females with hepatitis C virus infection. There were 32

males and 15 females with Child Pugh grade B. There were 16 males and 10 females with Child Pugh grade C.

**Conclusion:** From the present study, we can conclude that subjects affected by Hepatitis B and hepatitis C virus are most common causes of cirrhosis.

**Keywords:** Cirrhosis, Hepatitis B, Hepatitis C, Infection.

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### INTRODUCTION

The etiology of liver cirrhosis is categorized by widespread differences amongst genders, ethnic races, and geographic location. The frequency, and time of acquiring the major risk factors like hepatitis B virus, hepatitis C virus (HCV), and alcoholic liver disease are the cause of these variations.<sup>1</sup> Infection by hepatitis C is the major and prime cause of end stage liver disorder that requires liver transplantation. Approximately 25-30% of the candidates report with hepatitis C infection.<sup>2</sup> In America approximately 4 million subjects are affected by Hepatitis C and there are chances that 20-30% of them will progress to cirrhosis.<sup>3</sup> The risk of development of hepatocellular carcinoma depends on the type of underlying disorder like incases of autoimmune hepatitis chances are 2.9% in 10 years.<sup>4</sup> In case of chronic hepatitis B it is very high.<sup>5</sup> Fatty liver disease occurring due to obesity, Diabetes or alcohol can also progress to cirrhosis and therefore specialized medical treatment id required in all the conditions. Cirrhosis can occur due to exogenous/ toxic, toxic/allergic, immunological/ autoimmune, or vascular disease or because of inborn error of metabolism. Amongst these reasons, the most commonest reason is alcoholic fatty liver disorder, which

lead to 8619 deaths amongst 100000 subjects in Germany in the year 2009 and therefore it was the top 20 death causes in the country.<sup>6</sup> There are approximately 0.5% of the German subjects infected with Hepatitis B and 0.5% are affected by Hepatitis C virus.<sup>7</sup> The present study was conducted with the aim to etiological causes of liver cirrhosis.

### MATERIALS AND METHODS

This study was done in the General medicine department, MGM Medical College, Indore, Madhya Pradesh, India. Patients showing evidence of liver cirrhosis on ultrasound abdomen were enrolled in the study. Subjects with no confirmation of cirrhosis were excluded from the study. A complete examination of subjects with cirrhosis was carried out to evaluate the etiology and prognosis of the disease. A predesigned proforma was used for the evaluation of data. A complete blood examination, liver and renal function tests were carried out. Patient's serum albumin and coagulation profile were also noted. Ultrasound of abdomen was done to determine the liver and spleen size. It was also done to determine the diameter of portal vein and parenchymal

echogenicity. In cases of liver mass, CT scan of abdomen was also done. Child-Pugh's criteria were used for the prognosis of the disease and grading amongst cirrhotic subjects. It grades the subjects in three grades- Grade A (<7), grade B (7-9) and Grade C (>9).<sup>8</sup> All the subjects were followed during their period of hospital stay. All the data was arranged in a tabulated form and analyzed using SPSS software.

## RESULTS

The present study enrolled 120 subjects; out of these 80 were males and 40 females. The mean age of the subjects was 45.87±9.22 years. Table 1 shows the etiological reasons for liver

cirrhosis. There were 49 (71%) males and 20(29%) females with hepatitis C virus infection. There were 12 (63.2%) males and 7(36.8%) females with hepatitis B virus infection. There were 9 (60%) males and 6(40%) females with both hepatitis B and hepatitis C virus infection. There were 7 (100%) males with alcoholic cirrhosis. There were 2 (100%) females with biliary cirrhosis. There were 2 (50%) males and 2(50%) females with Wilson's disease. Table 2 shows the classification of subjects according to child Pugh's criteria. There were 32 males and 15 females with Child Pugh grade A. There were 32 males and 15 females with Child Pugh grade B. There were 16 males and 10 females with Child Pugh grade C.

**Table 1: Etiological reasons for liver cirrhosis**

Variable	Male (n%)	Female (n%)
HCV	49/71%	20/29%
HBV	12/63.2%	7/36.8%
HBV and HCV	9/60%	6/40%
Alcohol	7/100%	0/0%
Biliary cirrhosis	0/0%	2/100%
Wilson's disease	2/50%	2/50%
Not known	1/25%	3/75%
<b>Total</b>	<b>80</b>	<b>40</b>

**Table 2: Classification according to child Pugh's criteria**

Child pugh's criteria	Male	Female
<b>A</b>	32	15
<b>B</b>	32	15
<b>C</b>	16	10
<b>Total</b>	<b>80</b>	<b>40</b>

## DISCUSSION

Liver cirrhosis is an irreversible disorder and the management concerns with prevention of progression and complications associated with the disease. Advanced stages of cirrhosis are treated by transplantation of liver.<sup>9</sup> In the year 2000, cirrhosis of liver was the fourth most common cause of deaths in the country Mexico. Especially in the age group of 35 and 55 years, it was the second most common cause of death. 11 Regarding hepatitis C virus infection, there are nearly 170,000,000 people infected with HCV. This accounts for 3% of the world population.<sup>10</sup> In a study conducted by Nadeem et al, most common cause of admission to hospital was liver cirrhosis and hepatitis C virus infection was most common cause. In 50% of hepatitis infected subjects develop chronic liver disorder and 10-20% amongst them develops cirrhosis.<sup>11</sup> According to the present study, there were 49 (71%) males and 20(29%) females with hepatitis C virus infection. There were 12 (63.2%) males and 7(36.8%) females with hepatitis B virus infection. There were 9 (60%) males and 6(40%) females with both hepatitis B and hepatitis C virus infection. There were 7 (100%) males with alcoholic cirrhosis. There were 2 (100%) females with biliary cirrhosis. There were 2 (50%) males and 2(50%) females with Wilson's disease. According to a similar study by Shah et al, mostly subjects

affected by hepatitis C infection develop cirrhosis.<sup>12</sup> In a study by Bukhtiar, et al cirrhosis was seen in 74% of the subjects and out of these 28% were affected by Hepatitis B and 55% by hepatitis C. In his study, there were 35% subjects having both hepatitis C and hepatitis B infection.<sup>13</sup> According to a study by Farooqui, et al has also reported that HCV was positive amongst 59% subjects and hepatitis B antigen was positive amongst 32% patients. Both were positive amongst 3% of subjects.<sup>14</sup> According to the present study, there were 32 males and 15 females with Child Pugh grade A. There were 32 males and 15 females with Child Pugh grade B. There were 16 males and 10 females with Child Pugh grade C. Studies conducted in the past also included non-viral causes of cirrhosis in which the pathophysiology of damage to liver was entirely different.

## CONCLUSION

From the present study, we can conclude that subjects affected by Hepatitis B and hepatitis C virus are most common causes of cirrhosis. A multidisciplinary approach should be opted for the management for cirrhosis. Increase public awareness should be created regarding the complication and management of liver disease.

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