

Risk Factors, Complications and Prognosis of Cirrhosis in a Tertiary Care Hospital of Peshawar

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Background and Aims: To determine the risk factors, complications and prognosis of cirrhosis in a hospital based study at Peshawar.

Methods: A descriptive Cross sectional study, in medical department, Khyber teaching hospital Peshawar, from April 2005 to march 2006. Relevant informations were recorded from patients and treatment chart of the patients, on a questionnaire designed in accordance with the objectives of the study.

Results: A total of 61 patients, 41(67.21%) males and 20(32.78%) females were included. The age range of the patients was from 36 to 75 years with mean age of 57.5 years. Forty-four patients (72.33%) had family history of chronic liver diseases. The risk factors distribution was: Chronic hepatitis "B" infection (13.11%), chronic hepatitis "C" infection (59.01%), chronic hepatitis "B" and "C" co-infection (8.19%), Biliary cirrhosis (3.27%), Wilson disease (1.63%) and No risk factors recorded were recorded in (14.75%) patients. Complications of liver cirrhosis recorded were: Ascites (27.86%), Variceal hemorrhage (18.03%), Hepatorenal syndrome (3.27%), Encephalopathies (1.63%), Hepatocellular carcinoma (1.63%) and no complications were recorded in (47.54%) patients. Prognosis of patients with cirrhosis based on modified child's Pugh classification was studied in only 30(49.18%) of patients. Out of thirty patients 25(83.33%) had child's 'A' grade of prognosis, 4(13.33%) Child's 'B' grade and 1(3.33%) Child's 'C' grade.

Conclusions: Chronic hepatitis B and C infections were the major risk factors for cirrhosis. Ascites and variceal bleeding were recorded as major complications of cirrhosis and majority of our patients fit in child's a grade of prognosis with 45% chances of 5 years survival.

Keywords: Cirrhosis, Risk Factors, Peshawar

Introduction

Cirrhosis is a serious and irreversible disease. It is the end result of hepatocellular injury that leads to fibrosis and nodular regeneration^(1,2). It results from a variety of disorders that can occur in any age and is a major cause of mortality and morbidity world wide⁽³⁾.

A study from Rawalpindi shows that 90% of patients with chronic liver disease had evidence of HBV, HCV or co-infection. Disease was more severe in patients with co-infection. Cirrhosis was recorded in 74 % of patients⁽⁴⁾.

Khan TS *et al*⁽⁵⁾, also reports a high frequency of HCV seropositive individuals of both sexes among patients referred for chronic liver disease⁽⁵⁾. Another study shows rectal varices as major complication of cirrhosis that was present in 60% of patients with cirrhosis⁽⁶⁾. Portal hypertension, ascites and variceal hemorrhages are common in

cirrhotic liver. Portal hypertension is one of the main consequences of cirrhosis. It results from a combination of increased intrahepatic vascular resistance and increased blood flow through the portal venous system. The condition leads to the formation of portosystemic collateral veins. Esophagogastric varices have the greatest clinical impact, with a risk of bleeding as high as 30%. Ascites, another important complication of advanced cirrhosis and severe portal hypertension, is

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sometimes refractory to treatment and is complicated by spontaneous bacterial peritonitis and hepatorenal syndrome (7).

Present study was therefore designed as to determine the risk factors, complications and prognosis of liver cirrhosis in a hospital based study at Peshawar.

Methods

This descriptive cross sectional study was conducted in medical department, Khyber teaching hospital Peshawar, from April 2005 to March 2006.

A total of 61 patients, 41 (67.21%) males and 20 (32.78%) females were randomly included.

Inclusion criteria were all patients who had established diagnosis of cirrhosis, irrespective of age and sex, admitted in medical department of Khyber teaching hospital (KTH). Exclusion criteria were all patients with liver diseases other than cirrhosis, like viral hepatitis (HBV or HCV infections) Wilson's diseases, liver carcinoma etc. Only patients diagnosed as cirrhotic by consultants in our units were included.

A detailed history of patients was taken with the help of a pre-designed questionnaire, prepared in accordance with the objectives of this study. Family history of liver diseases was also recorded from each patient. The questionnaire contained preliminary information regarding age, sex, address and education of patients. It also contained information about risk factors and complications of cirrhosis.

Investigation reports of serum albumin, serum bilirubin and prothrombin time were also recorded from the chart of patients if any there. On the basis of these reports the prognosis of the disease was assessed, using modified child's Pugh classification for grading prognosis in cirrhotic patients. Child's Pugh classification has scores for four parameters i.e serum albumin, serum bilirubin, prothrombin time and ascites. It grades cirrhosis in three grades; Child's 'A' grade (score less than 7) has 45% chances for 5 years survival, Child's 'B' grade (score 7-9) has 20% chances and Child's 'C' grade (score more than 10) has less than 20% chances of 5 years survival (8).

Finally statistical analysis of the data was performed and association of risk factors with cirrhosis was studied.

Results

1. Sampling: A total of 61 patients, 41(67.21%) males and 20(32.78%) females were randomly

included. (Table 1)

2. Age range: The age range of the patients was from 36 to 75 years with mean age of 57.5 years. Mode of age was 55 years.
3. Familial deposition of liver disease: Forty-four patients (72.33%) had family history of chronic liver diseases.
4. Risk factors of cirrhosis: The risk factors distribution was: Chronic hepatitis "B" infection (13.11%), chronic hepatitis "C" infection (59.01%), chronic hepatitis "B" and "C" infection (8.19%), biliary cirrhosis (3.27%), wilson disease (1.63%) and no risk factors recorded were recorded in (14.75%) patients. (table 1)

Table 1. Risk factors of cirrhosis: Total number of patients: 61

Risk factors of cirrhosis	Males: 41 (67.21%)	Females: 20 (32.73%)	Percentage of total
Chronic hepatitis "B" infection	6 (9.83%)	2 (3.27%)	13.11%
Chronic hepatitis "C" infection	22 (36.06%)	14 (22.95%)	59.01%
Chronic hepatitis "B" and "C" co-infection	4 (6.55%)	1 (1.63%)	8.19%
Biliary cirrhosis	2 (3.27%)	0	3.27%
Wilson disease	1 (1.63%)	0	1.63%
No risk factors recorded	6 (9.83%)	3 (4.91%)	14.75%

5. Complications of cirrhosis: Complications of liver cirrhosis recorded were: ascites (27.86%), variceal hemorrhage (18.03%), hepatorenal syndrome (3.27%), encephalopathy (1.63%), hepatocellular carcinoma (1.63%) and no complications were recorded in (47.54%) patients. (table 2).

Table 2. Complications of cirrhosis: Total number of patients: 61.

Complications of cirrhosis:	Males: 41 (67.21%)	Females: 20 (32.73%)	Percentage of total
Ascites	12 (19.67%)	5 (8.19%)	27.86%
Variceal hemorrhage	8 (13.11%)	3 (4.91%)	18.03%
Hepatorenal syndrome	2 (3.27%)	0	3.27%
Encephalopathies	1 (1.63%)	0	1.63%
Hepatocellular carcinoma	0	1 (1.63%)	1.63%
No complications recorded	18 (29.50%)	11 (18.03%)	47.54%

6. Prognosis of patients with cirrhosis: Prognosis of patients with cirrhosis based on modified child's Pugh classification was studied in only 30(49.18%) of patients. Out of thirty patients

25(83.33%) had child's 'A' grade of prognosis, 4(13.33%) Child's 'B' grade and 1(3.33%) Child's 'C' grade. (table 3).

Table 3. Prognosis of patients with cirrhosis based on modified child's Pugh classification. Total number of patients: 30.

Prognosis of patients with cirrhosis	Males: 23 (76.66%)	Females: 7 (23.33%)	Percentage of total
Child's 'A' grade (score less than 7)	19 (63.33%)	6 (20%)	83.33%
Child's 'B' grade (score less than 7-9)	3 (10%)	1 (3.33%)	13.33%
Child's 'C' grade (score less than >10)	1 (3.33%)	0	3.33%

Discussion

Chronic hepatitis C infection was the major risk factor for cirrhosis and was responsible for 59% of the total cases presented with cirrhosis in our hospital. In a study from Karachi the similar findings have been recorded. They reported most of their patients with hepatitis C presented with established cirrhosis and complications of portal hypertension, hepatocellular carcinoma and liver failure (9). Coexistence of chronic hepatitis B and C infections was recorded in 8.19% of all cases of cirrhosis. Bukhtiar N *et al* (4) also report the co-infection 7% of anti-HCV and HBsAg positive while 35% of anti-HCV and anti-HBc positive for cirrhosis. They further recorded that Cirrhosis was present in 74%, chronic hepatitis (Ch Hep) in 18.6% and hepatocellular carcinoma (HCC) in 7.2%. Among the patients with cirrhosis, 28% were HBsAg positive, 55% anti-HBc positive and 68% anti HCV positive.

Ascites was recorded as major complication of cirrhosis in present study and was present in 28% of patients with cirrhosis. Ascites is the most frequent complication of cirrhosis. Further complications can occur in patients who develop ascites. Spontaneous bacterial peritonitis occurs in up to 10% of patients with ascites because of bacterial overgrowth with translocation through the increased permeable small intestinal wall and impaired defense mechanisms (10). Esophageal and fundic varices belong to the most frequent complications of cirrhosis and portal hypertension. Due to their significant morbidity and mortality, bleedings from esophageal or fundic varices represent a challenge for the emergency medical team as well as for the gastroenterologist. An upper gastrointestinal endoscopy should be generally performed within the first twelve hours

from the beginning of the bleeding in order to obtain an accurate diagnosis and to provide an adequate treatment (11).

Hepatorenal abnormalities can never be neglected in cirrhotic patients. We recorded 3.27% cases of cirrhosis with the same disease. The circulatory disturbances seen in advanced cirrhosis lead to the development of ascites, which often lead to progressive renal impairment or the development of hepatorenal syndrome. Furthermore, cirrhotic patients commonly experience clinical situations that predispose them to the development of pre-renal failure, such as dehydration, hypovolaemia, septic shock, or exposure to nephrotoxic drugs (12).

We tried to determine the prognostic staging of patients with cirrhosis on the basis of Child-Pugh classification. Child's Pugh classification has scores for four parameters i.e. serum albumin, serum bilirubin, prothrombin time and ascites. It grades cirrhosis in three grades; Child's 'A' Grade has 45% chances for 5 years survival, Child's 'B' Grade 20% chances and Child's 'C' grade less than 20% chances of 5 years survival. Another study from China also gives the same findings. Liver fibrosis stage of a total of 53 patients was below, 22% of the patients had cirrhosis of Child-Pugh grade A, 41% of grade B and 36% of grade C. Liver function showed a steady decrease from Child-Pugh grade A to grade B and to grade C. Differences between the three Child grades were significant (13).

Conclusion

On the basis of the results and discussion we conclude that chronic hepatitis B and C infections were the major risk factors for cirrhosis in our patients. Ascites and variceal bleeding were recorded as major complications of cirrhosis and a majority of our patients fit in child's A grade of prognosis with 45% chances of 5 years survival. There is need for more actions to prevent hepatitis B and C infections in order to control cirrhosis burden.

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