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Original Research

Analysis of renal manifestations in liver cirrhosis patients

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ABSTRACT:
Background: To analyse the renal manifestations in liver cirrhosis patients. **Materials & Methods:** We conducted the present study to analyse renal manifestations in liver cirrhosis patients. A total of 50 patients were enrolled. Various laboratory investigations were done to assess the severity of liver dysfunction. **Results:** The relation between Child-Pugh score and serum creatinine was found but change of creatinine with Child-Pugh score was statistically significant (p<0.001). **Conclusion:** There is significant association between renal manifestations and liver cirrhosis patients.
Keywords: liver cirrhosis, renal diseases

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INTRODUCTION

Cirrhosis is defined as the histological development of regenerative nodules surrounded by fibrous bands in response to chronic liver injury, that leads to portal hypertension and end stage liver disease. Recent advances in the understanding of the natural history and pathophysiology of cirrhosis, and in treatment of its complications, resulting in improved management, quality of life and life expectancy of cirrhotic patients.[(1)]

Renal dysfunction is a frequent complication in cirrhotic patients, occurring in one of every five inpatients with cirrhosis. Renal dysfunction in this population may present acutely, or may be a result of underlying chronic kidney disease (CKD). AKI has an estimated prevalence of approximately 20–50% among hospitalized patients with cirrhosis and patients with cirrhosis are more likely to develop renal failure compared to individuals without liver disease. AKI is associated with poor prognosis and represents an important predictor for short-term mortality in patients with cirrhosis.[(2,3)]

MATERIALS & METHODS

We conducted the present study to analyse renal manifestations in liver cirrhosis patients. A total of 50 patients were enrolled. Various laboratory investigations were done to assess the severity of liver dysfunction. Data was collected and analysed by using SPSS software and results were obtained.

RESULTS

A total of 50 patients were enrolled. Mean age is 46.4 years. It was found in the study that distribution of serum urea and creatinine, according to the severities of liver disease as per Child Pugh classification, was statistically significant, as tested by Mann-Whitney test. The relation between Child-Pugh score and serum creatinine was found but change of creatinine with Child-Pugh score was statistically significant (p<0.001).

Table: Renal function with gradation of liver disease

Renal complication	Child pugh classification of liver diseases		P- value
	B	C	
Serum urea Normal	30	7	0.003
Abnormal	0	7	
Serum creatinine Normal	30	7	

Abnormal	0	7	<0.001*

* : Significant

DISCUSSION

Renal dysfunction is common in chronic liver disease. The cause of this renal dysfunction is either multi-organ involvement in acute conditions or secondary to advanced liver disease. [4] The study was undertaken to assess the renal function in chronic liver diseases and find out the association of alteration of renal function with gradation of liver disease. (assessed by child-pugh criteria) and to find out the association of alteration of renal function among the cases of chronic liver disease of different aetiology. [5] The patients were interviewed with a pre-designed and pre-tested schedule, examined clinically, followed by some laboratory investigations relevant to diagnose the aetiology of chronic liver disease, and to assess the severity of liver and renal dysfunction. Data was analysed by standard statistical method. Eighty six percent of the patients were male and the mean age of study population was 43.58 y, 68% patients suffered from alcoholic liver disease, followed by 14% patients had chronic Hepatitis-B, 10% patients developed acute kidney injury, 20% had hepato renal syndrome and 14% had IgA deposition. The distribution of serum urea and creatinine across the categories of Child Pugh classification tested by Mann-Whitney test and the distribution was statistically significant. [6,7]

Renal dysfunction causes significant morbidity in cirrhotic patients. Diagnosis is challenging because it is based on serum creatinine, which is used to calculate estimated glomerular filtration rate, which itself is not an ideal measure of renal function in patients with cirrhosis. Finding the exact cause of renal injury in patients with cirrhosis remains problematic due to the limitations of the current diagnostic tests.[8] In this study, it was found in the study that distribution of serum urea and creatinine, according to the severities of liver disease as per Child Pugh classification, was statistically significant, as tested by Mann-Whitney test. The relation between Child-Pugh score and serum creatinine was found but change of creatinine with Child-Pugh score was statistically significant ($p<0.001$).

CONCLUSION

There is significant association between renal manifestations and liver cirrhosis patients.

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