



ORIGINAL RESEARCH PAPER

General Medicine

A STUDY ON ASSESSMENT OF RENAL FUNCTIONS IN PATIENTS OF CHRONIC LIVER DISEASE IN A SUB URBAN POPULATION

KEY WORDS: RAAS, GFR, MELD

Dr. Janish Andu*

Final Year Postgraduate, General Medicine, Meenakshi Medical College And Research Institute. *Corresponding Author

Dr. Mohanraj. P

Professor, General Medicine, Meenakshi Medical College And Research Institute.

ABSTRACT

Primary liver can lead to secondary abnormalities in kidney function or both liver and kidney disease can occur simultaneously. Chronic liver disease itself is a state of imbalance between inflow and outflow of blood. In advanced stages of liver disease when fibrosis ensues obstruction to the flow of blood develops in portal and hepatic vasculature which is accounted for the development of portal hypertension and ascites later in the course. The study highlights the importance of early identification of renal function test in all chronic liver disease for better prognosis.

INTRODUCTION

Renal involvement in patients of chronic liver disease is one of the most dreaded complications associated with increase in morbidity and mortality.¹ Patients with structural renal disease involving either glomerulus or collecting system like glomerulonephritis, interstitial and renal tubular nephritis can be associated with liver involvement where the basic pathology lies in kidney and is independent of hepatic involvement.² Various components of functional renal disorders encompasses pre-renal azotaemia, accounting for most of the cases, ischemic tubular necrosis and hepatorenal syndrome.^{3,4} Rearrangements in various homeostatic mechanisms marked by abnormal hepatic and renal parameters due to chronic liver disease have been associated with renal impairment in these patients.⁵

Need for the study:

The study highlights the importance of early identification of renal function test in all chronic liver disease for better prognosis and also scarcity of studies on renal function test in chronic liver disease patients in people from sub urban population in India

AIMS & OBJECTIVES OF THE STUDY:

Evaluation of renal function tests to find the incidence of various types of acute renal failure in chronic liver disease patients. To find relationship of various factors for different types of acute renal failure in chronic liver disease patients and to evaluate the diagnostic accuracy of plasma creatinine levels in assessing renal functions in patients of chronic liver disease.

MATERIALS AND METHODS:

This was a cross sectional study. The study included 100 patients with cirrhosis as evidenced by clinical examination and by serological or radiological evidence from patients in the ward of Department of General medicine Meenakshi medical college after obtaining ethical committee clearance. For statistical convenience people were divided into 5 group using MELD score. Statistical analysis was done using SPSS24.

RESULTS:

Table - 1 : Age And Sex Distribution Of Patients

Age Group	Frequency	Percent
30-40 Years	35	35.0
41-50 Years	35	35.0
51-60 Years	26	26.0
Above 60 Years	4	4.0
Total	100	100.0

Sex	Frequency	Percent
Male	90	90.0
Female	10	10.0
Total	100	100.0

Table 1- shows the socio demographic data of the patients screened with chronic liver disease and out of the 100 patients observed majority of patients belonged to age group of 41 to 50 years (35patients) and least were seen in above 60 years (4patients). Gender wise 90(90 %) were males and 10(10%) were females.

Table 2: Etiology Of Chronic Liver Disease

ETIOLOGY	Frequency	Percent
ALC	87	87.0
HEP B	4	4.0
IDIOPATHIC	9	9.0
Total	100	100.0

Table 2-In our study it was observed that alcoholism (87%) was the major cause of chronic liver disease in males, followed by idiopathic (9%) and hepatitis B(4%). Hepatitis B were found to be positive in 4% of study population.

Table-3: Urine Volume

urine volume	Frequency	Percent
<1000	6	6.0
1000 to 1500	49	49.0
>1500	45	45.0
Total	100	100.0

Table 3-It was observed that Urine output were found to be less than 1000ml in 6% of patients. 49%patients had urine output 49% of patients, 45% of patients had urine output more than 1500ml.

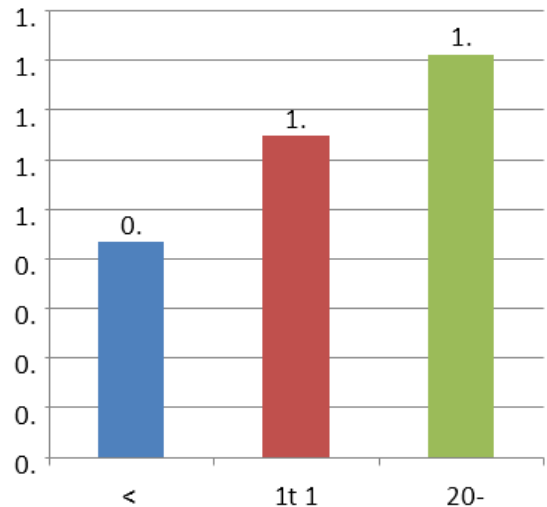


Figure - 1: Serum Creatinine

Figure 1 - The mean value of the serum creatinine in Group I patients is 0.87mg/dl. In Group II 1.29. In Group III 1.62. So in our study it was observed severe liver disease patients the serum creatinine values increases as compared to other groups. It is due to development of renal failure in the advanced liver disease patients.

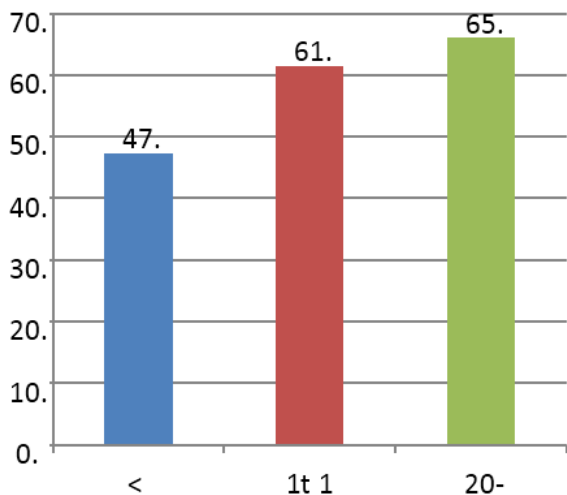


Figure 2 - Urine Creatinine

Figure 2-It was observed that urine creatinine values were raised as the severity of the disease increases amongst the three groups.

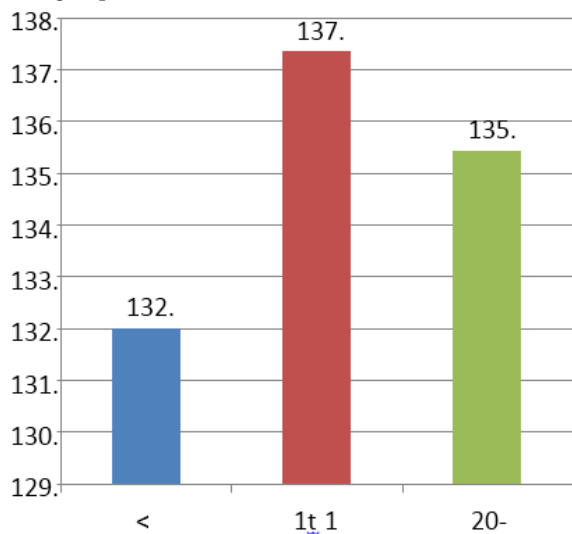


Figure 3 :serum Sodium

Figure 3-In the study there is decreasing trend in the serum sodium from group II to group III. As the disease advanced the development of renal failure occurs. In the advanced disease the development of ascites and volume overload leads to dilutional hyponatremia.

DISCUSSION:

Our study was conducted in 100 patients. It was observed majority of patients belonged to age group of 41 to 50 years (35patients) and least were seen in above 60 years (4patients). Gender wise 90(90 %) were males and 10(10 %) were females. It shows the predominance of male gender with higher liver disease as compared to females. Our study has also shown that patients with alcoholic cirrhosis had adverse renal function compared to those with HbsAg positivity. It was observed that urine creatinine values were raised as the severity of the disease increases amongst the three groups, studies done by Papadakis .and Arrief and another study by Caregato et al ⁶have supported this observation. It was

observed that urine creatinine values were raised as the severity of the disease increases amongst the three groups similar finding were seen in studies done by Herget-Rosenthal^{7,8}The study highlights the importance of early identification of renal function test in all chronic liver disease for better prognosis.

Limitations:

1. Small sample size
2. Study period was very short.

CONCLUSION:

In our study we observed alcoholics develop severe renal dysfunction compared to patients with cirrhosis due to other causes. Renal parameters were found to follow an increasing trend, whereas urinary output and GFR followed a decreasing trend. The frequency of renal dysfunction with advancing grades of MELD score also increased. The study highlights the importance of early identification of renal function test in all chronic liver disease for better prognosis.

Acknowledgement:

Dr.Punitha, Department of Soial and Preventive Medicine, Meenakshi medical college, Kanchipuram.

Sources of Support: Nil

Conflicts of interest: Nil

REFERENCES:

1. Epstein ,Massry SG, Glasscock .Kidney in liver disease.1995:1105- 1107
2. Ruez Arbol L, Urman J, Fernandez J et al. Systemic, renal and hemodynamic derangement in cirrhotic patients with SBP.J of Hepatol 2003;38:1210-1218
3. Santiago J. Munoz MD. The Hepatorenal syndrome .Journal of Hepatology : Medicine Clinics of North America 92 (2008) 813-837
4. Guevara M, Gines P, Bandi JC, et al. in hepatorenal syndrome Hepatology 1998 ;28:416-1
5. Newman, Grubb et al. Serum Cystatin C :A better marker for changes in GFR. . Kidney International 1995;47:312-318
6. Caregato, Merkel et al. Limitations of plasma creatinine as marker of glomerular filtration in cirrhotics. Archives of Internal Medicine
7. Herget- Rosenthaclinical assessment of renal function in cirrhotics. Journal of Medicine 1987;82:945-952 .
8. Vikas , Dharnidarka, Gary Stevens. Plasma creatinine as a marker of renal function:A meta analysis.