



A RETROSPECTIVE CASE STUDY OF RENAL FUNCTION IN CHRONIC LIVER DISEASE

KEYWORDS

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ABSTRACT Renal insufficiency contributes significantly to mortality in patients with cirrhosis of liver. Our aim is to study the correlation between etiology of chronic liver disease and renal function.

SAMPLE SIZE :

50 cases of inpatients admitted in the year 2015 were selected at random.

INCLUSION CRITERIA :-

This study included patients with chronic liver disease being treated as in-patients in the Department of General Medicine, Asram, Eluru.

Evidence for chronic liver disease being defined by:

- a compatible Clinical profile (signs of liver cell failure or reduced liver span) along with Biochemical (altered liver function tests, reversal of albumin-globulin ratio) or Sonographic evidence (altered echotexture of liver) OR
- Tissue diagnosis (positive liver biopsy for cirrhosis)

Exclusion Criteria:

- Elderly patients (>60 years)
- Overt renal failure (S. creatinine >1.5)
- Known primary renal disease
- Diabetes mellitus / Hypertension
- Grade 4 hepatic encephalopathy
- Recent gastrointestinal bleed

Methodology:

Creatinine clearance for the patient was calculated by the formula (URINE CREATININE / SERUM CREATININE MULTIPLIED BY 24 HOUR URINE VOLUME).

$$\left(\frac{U_{cr}}{P_{cr}} \right) \times V$$

This was divided by 1440 to get the value in ml/ minute.

RESULTS:

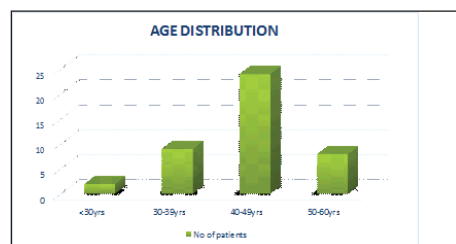
50 patients with chronic liver disease were enrolled in the study. 7 patients did not satisfy inclusion criteria and were excluded. So, a total of 43 patients were included.

The following observations were made:

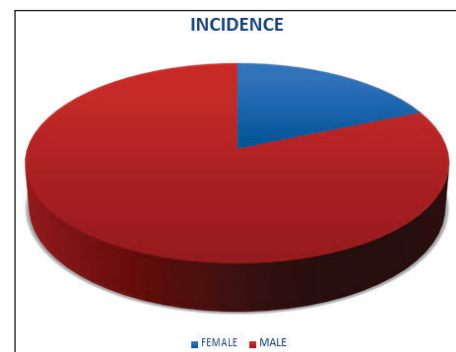
AGE AND SEX:

Age of the patients ranged from a minimum of 22 years to a maximum of 58 years. The mean age was 42.14 years. The age distribution is as follows:

AGE GROUP	NUMBER OF PATIENTS
Less than 30 years	2
30 to 39 years	9
40 to 49 years	24
Above 50 years	8



Patients above 60 years were excluded as GFR decreases with age. False low GFR thus calculated would interfere with the findings of this study.

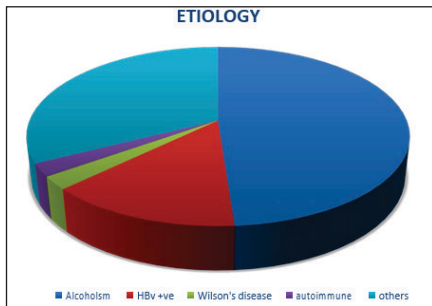


Of the patients included in the study 35(81.4%) were male, while remaining 8(18.6) were female.

ETIOLOGY:

Out of the 43 patients of cirrhosis, the cause of liverdisease was attributed to alcoholism in 21 patients. 6 patients were found to be positive for Hepatitis B surface antigen. One patient was a case of Wilson's disease and another patient was found to have autoimmune hepatitis. In the other 14 patients, causative etiology could not be ascertained.

ETIOLOGY	NO. OF PATIENTS	PERCENTAGE
ALCOHOLISM	21	48.83 %
HEPATITIS B	6	13.95 %
WILSON'S	1	2.33 %
AUTO IMMUNE HEPATITIS	1	2.33 %
UNKNOWN	14	32.56 %



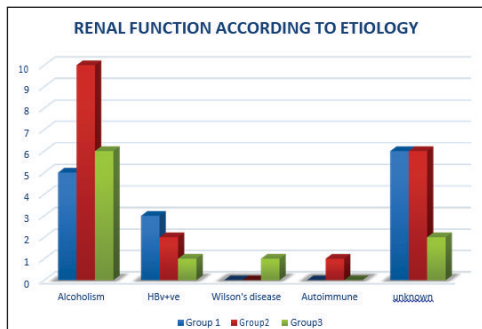
MEASURED CREATININE CLEARANCE BY TIMED URINE COLLECTION:

The patients were grouped into three based on their creatinine clearance:

Group	Creatinine clearance	No. of patients
Group I	>60 ml/minute	14
Group II	30-60 ml/minute	19
Group III	<30 ml/minute	10

RENAL FUNCTION ACCORDING TO ETIOLOGY

ETIOLOGY	NUMBER OF PATIENTS		
	GROUP I	GROUP II	GROUP III
ALCOHOLISM	5	10	6
HEPATITIS B	3	2	1
WILSON'S	0	0	1
AUTO IMMUNE	0	1	0
UNKNOWN	6	6	2



Out of the 21 alcoholic liver disease patients, only 5 (20 %) had creatinine clearance more than 60 ml/minute, whereas 3 (50%) out of the 6 HBsAg positive patients had creatinine clearance more than 60 ml/min.

CONCLUSION:

- 1.The mean age of patients who participated in this study was 42.14 years.
- 2.Chronic liver disease was more common among men(81.4%)
- 3.The most common cause of chronic liver disease was alcoholism(48.83%),followed by hepatitis B(13.95%) and others.
- 4.Most of the patients in our study(67.4%) had Gfr<60ml/min.
- 5.The incidence of renal insufficiency as assessed by Gfr is higher in alcoholics than HBv+ve patients.

TYPES OF RENAL FAILURE IN PATIENTS WITH CIRRHOSIS

A. HYPOVOLEMIA-INDUCED RENAL FAILURE

Hypovolemia is usually due to gastrointestinal hemorrhage or to fluid losses- either renal losses because of excessive diuretic therapy; or gastrointestinal losses as a result of diarrhea from excessive lactulose administration or gastrointestinal infection. Renal failure occurs soon after the onset of hypovolemia.

B. PARENCHYMAL RENAL DISEASE

Parenchymal renal disease should be suspected as a cause of

renal failure when proteinuria (>500 mg of protein/day), hematuria (>50 red cells/high-power field), or both are present and ideally should be confirmed by renal biopsy, if this procedure is not contraindicated.

The presence of renal tubular epithelial cells in the urine sediment favours the diagnosis of acute tubular necrosis.

C. DRUG-INDUCED RENAL FAILURE

Current or recent treatment with nonsteroidal anti- inflammatory drugs or aminoglycosides suggests drug- induced renal failure.

D. HEPATORENAL SYNDROME

Hepatorenal syndrome is an uncommon but potentially fatal complication of decompensated cirrhosis. It is a unique form of functional renal failure that often complicates advanced liver disease, hepatic failure or portal hypertension. It is characterized by intense constriction of the renal arterial vasculature with resulting oliguria and avid sodium retention.

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