



A STUDY ON HYPONATREMIA IN CIRRHOSIS OF LIVER AND ITS PROGNOSTIC VALUE.

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ABSTRACT

BACKGROUND: Hyponatremia is an electrolyte imbalance that commonly occurs in hospitalized patients. In cirrhotic patients with advanced stage of disease there is release of ADH that causes impairment in renal excretion of free water resulting in dilutional hyponatremia^{2,3} in combination with renal vasoconstriction. This study was taken up to find the prevalence of the hyponatremia and association between hyponatremia and the occurrence of major complications in patients with liver cirrhosis in a tertiary care hospital.

AIMS AND OBJECTIVES

1. To study the prevalence of hyponatremia in cirrhotic patients attending a tertiary care hospital.
2. To evaluate the association between hyponatremia and complications in cirrhosis among patients attending a tertiary care center and its prognostic significance.

METHODS:

It is a cross-sectional study done in Katuri Medical College & Hospital over a period of 13 months between June 2018 to June 2019. Patients were selected based on clinical examination, biochemical tests and ultrasound abdomen and divided into three groups as those having a sodium levels of < 130, 131 to 135 and > 136 meq/l and patients having sodium levels < 135 meq/l were considered hyponatremic. MELD score was calculated at the time of admission.

RESULTS:

There was significant difference with respect to MELD score in three groups (p value = < 0.0001) and with respect to complications of liver cirrhosis namely portal hypertension, hepatic encephalopathy, hepatorenal syndrome

CONCLUSION:

Hyponatremia in cirrhosis are associated with severe complications like hepatic encephalopathy, hepatorenal syndrome and high morbidity and mortality.

KEYWORDS : Cirrhosis, Hyponatremia, ADH, MELD score

INTRODUCTION

Hyponatremia is an electrolyte imbalance that commonly occurs in hospitalized patients. In cirrhotic patients with advanced stage of disease there is release of ADH¹ that causes impairment in renal excretion of free water resulting in dilutional hyponatremia^{2,3} in combination with renal vasoconstriction. This study was taken up to find the prevalence of the hyponatremia and association between hyponatremia and the occurrence of major complications in patients with liver cirrhosis in a tertiary care hospital.

AIMS AND OBJECTIVES

1. To study the prevalence of hyponatremia in cirrhotic patients attending a tertiary care hospital.
2. To evaluate the association between hyponatremia and complications in cirrhosis among patients attending a tertiary care center and its prognostic significance.

METHODOLOGY

- Study area : Dept of General Medicine, Katuri medical college.
- Study period : June 2018 to June 2019.
- Study population : 100.

Study group : The patients taken for study were divided into three groups as those having a sodium levels of < 130, 131 to 135 and > 136 meq/l and patients having sodium levels < 135 meq/l were considered hyponatremic.

STUDY DESIGN:

Cross sectional study and chi square test was used to compare complications in cirrhotic patients.

INCLUSION CRITERIA:

All cirrhotic patients aged between 20-70 years.

EXCLUSION CRITERIA:

1. Patients with cardiac failure
2. Patient on diuretic therapy.
3. Patients with chronic kidney disease
4. Patients on drugs like SSRI, TCA, MAO inhibitors etc.

RESULTS:

In the present study 46(46%) patients belong to the group of serum sodium concentrations ≥ 136 meq/L. While, 34(34%) and 20 (20%) patients belong to serum sodium concentration group of ≤ 130 meq/L and 131-135 meq/L respectively. Mean MELD score in three groups ≤ 130 meq/L, 131-135 meq/L and ≥ 136 meq/L was 25.91 ± 8.092 , 28.00 ± 8.385 , 18.17 ± 5.591 respectively.

There was significant difference with respect to MELD score in three groups (p value = < 0.0001) and with respect to complications of liver cirrhosis namely portal hypertension, hepatic encephalopathy, hepatorenal syndrome (p value = 0.0111, < 0.0001, 0.0140 respectively). However no statistical difference was found for ascites, gastrointestinal bleeding and coagulopathy.

DISCUSSION

According to Paolo Angeli⁵ hepatic encephalopathy was present in 38% of the patients with serum sodium < 130 meq/l compared with 24% of patients with serum sodium between 131 and 135 meq/l and 15% of patients had serum sodium levels > 135 meq/l.

Angeli P et al showed HRS in 17% patients with serum sodium < 130 meq/L, 10% in patients with serum sodium 130-135 meq/L and only 6% in patients with normal serum sodium concentration.

Kim JH et al (2009) showed HRS in 17% patients with serum sodium < 130 meq/L compared with 10% in patients with serum sodium 130-135 meq/L and only 6% in patients with normal serum sodium concentration.

In the present study there was no association found between serum sodium and gastrointestinal bleeding and coagulopathy; similar result shown by Angeli P et al and Shaikh S et al⁶

CONCLUSION

Dilutional hyponatremia is frequent in cirrhotic patients and low serum sodium levels⁴. In cirrhosis are associated with severe complications of liver cirrhosis like hepatic encephalopathy, hepatorenal syndrome and high morbidity and mortality.

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