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EVALUATION OF HYPONATREMIA IN HOSPITALIZED PATIENTS- A RETROSPECTIVE OBSERVATIONAL STUDY

Internal Medicine

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ABSTRACT

Background and objectives: A retrospective study was performed for evaluation of hyponatremia in hospitalized patients. **Material and Methods:** A retrospective case record based study was carried out and 200 hospitalized ICU patients aged 18-0 yrs were selected who were admitted for more than 1 week duration not having undergone any surgical intervention. Exclusion criteria was patients with underlying chronic kidney disease or chronic liver disease, previous history of dialysis and previous history or head trauma or stroke. **Results:** Significant reduction in serum sodium levels were noted. The correlation of the symptoms with the serum sodium levels was found to be statistically significant in cases of severe and moderate hyponatremia **Conculsion:** Hospitalized pateints are at risk of hyponatremia particularuly suffering from gastrointerstinal, cardiovascular and renal disorders and if left untreated can lead severe symptomatic hyponatremia.

KEYWORDS

INTRODUCTION:

Reduced serum sodium or hyponatremia is a common dyselectrolytemia amongst hospitalized patients. while patients may be asymptomatic, studies have shown that it is associated with increased mortality and morbidity. it is defined as serum sodium levels equal to or lower than 135 mEq/L. The serum sodium levels is indirectly indicative of the hydration status of a patient and is well balanced by ADH, the kidneys and thirst control. usually with serum sodium values less than 130 mEq/L, they often present with symptoms, which can be non-specific in nature. very often, these non-specific symptoms are masked by the symptoms of the underlying disease for which the patient is hospitalized, making it challenging for diagnosing hyponatremia, and thereby delay the corrective treatment. The symptoms and signs of hyponatremia are due to cerebral edema, which is not affected by the absolute sodium value, but by the rate of fall of the concentration in the blood. the symptoms can range anywhere from nausea, vomiting, intractable headache to neuropsychiatric symptoms of irritability, restlessness, disorientation, altered levels of consciousness, seizures and ending in coma. although it is difficult to identify these symptoms, and attribute it to hyponatremia, high index of suspicion in sick patients can help reduce morbidity and mortality. It is also important to evaluate the cause of hyponatremia in such patients, as it would guide the treatment strategy. Here, we aim to study the incidence of hyponatremia in hospitalized patients and evaluate the clinical features and aetiology of the same.

METHODS AND MATERIALS:

This is retrospective study that was conducted in the department of medicine between January 2022 and July 2022. it was a case record-based study of patients admitted in the high dependency and intensive care units with varying diagnosis for more than one week. Inclusion criteria was participants aged 18-70 years admitted in ICU for more than 1 week duration not having undergone any surgical intervention. Exclusion criteria was patients with underlying chronic kidney disease or chronic liver disease, previous history of dialysis and previous history or head trauma or stroke.

200 study participants were recruited, and the details were recorded in a semi-structed pro forma. The demographic details, clinical features, drug history and laboratory parameters were recorded, and the data was entered into an MS excel spreadsheet.

Statistics- mean, median, standard deviation, minimum value, maximum value, range was used to describe the data.

RESULTS:

200 study participants were taken from the case records. Out of this, 134 were males, while the remaining were females. The mean age of patients admitted was 54.66 years (range 18-70 years). Out of these 200 study participants, 178 participants had hyponatremia. The mean serum sodium level was 122.35 +/- 12.22 mEq/L. The severity of hyponatremia in the patients was as follows: -

Serum sodium levels (mEg/L)	Frequency
130-135	22
125-130	65
<125	13

The broad categories of disease that was associated with the study participants was as follows.

Disease	Percentage
Psychiatric disorder	18
Adrenal insufficiency	10
Gastrointestinal	34
Respiratory	10
Cardiac disorders	32

29% of patients were on diuretics and 42% of patients were on drugs other than diuretics which causes hyponatremia.

114 patients had some neurological symptoms of hyponatremia due to cerebral oedema like nausea, vomiting, giddiness, and altered sensorium. 28 patients presented with seizures. The lower the sodium value, the higher the incidence of symptomatic hyponatremia.

Range	Symptomatic	Asymptomatic	P value
<120	20	0	<0.001
125 – 130	80	32	<0.05
130 – 135	34	34	0.32

The correlation of the symptoms with the serum sodium levels was found to be statistically significant in cases of severe and moderate hyponatremia. However, it was significant in the case of mild hyponatremia.

DISCUSSION:

Hyponatremia in hospitalized patients is a result of various factors such as impaired kidney function, drug effects, reduced appetite and associated co-morbid conditions. in the present study, hyponatremia was seen most commonly in middle aged males. the similar findings were observed in a Study done by Hochman [13] and Vurgese [14]. The mean age of the study participants was similar to the findings by Anderson and team [15], as well as Vurgese and team [14] which was 57.05 + 2SD. The symptomatology was directly proportional the severity of hyponatremia. In a study performed by Hochman and team [13], it was observed that while 43.4% were asymptomatic, 16.7% had severe neurological deficits.

CONCLUSION:

Hospitalized pateints are at risk of hyponatremia particularuly

suffering from gastrointerstinal, cardiovascular and renal disorders and if left untreated can lead severe symptomatic hyponatremia.

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