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A study on hyponatremia in intensive care unit patients

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Abstract

Hyponatremia is a common electrolyte abnormality often detected asymptotically it is also common in hospitalized patients also this study was conducted in Telangana and Andhra Pradesh in 200 hospitalized patients 60 patients were having hyponatremia where serum sodium is less than 135 M.Eqll /lt. and average age is 62 years. Males patients are 45% and female patient are 55%.

Keywords: Hyponatremia, Serum Sodium, altered sensorium and sepsis

Introduction

Hyponatremia is defined as serum sodium is less than 135 M eqll. It is most dangerous and common electrolyte abnormality in hospitalized patients associate with profound disturbance of cerebral function. Manifestations are confusion, lethargy, vomiting, seizures and coma [1]. The degree of cerebral symptomatology depends more on rate of development of electrolyte abnormality than its severity. Iatrogenic complications from aggressive and inappropriate therapy is more harmful than hyponatremia.

Most cases of hyponatremia reflects water imbalance and abnormal water handling, not Na. Imbalance, indicate primary role of ADH is the pathophysiology of hyponatremia [2], Serum osmolality identifies isotonic and hypotonic hyponatremia although these case can be identified by history or previous lab. inslization [3] clinically significant hyponatremia is relatively common & is non specific in its presentation [4].

Aims and Objectives

Aims of the study is to know the causes and clinical features of hyponatremia in hospitalized patients.

Material and Methods

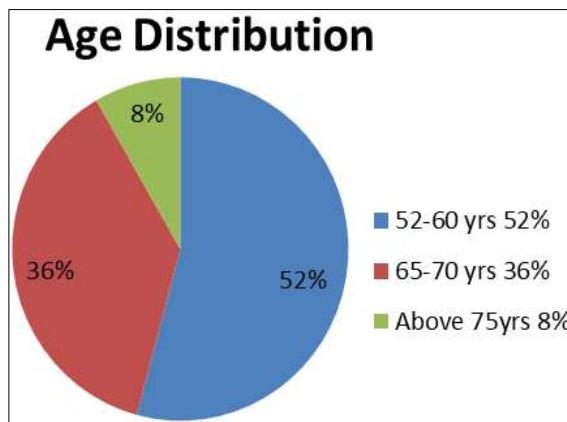
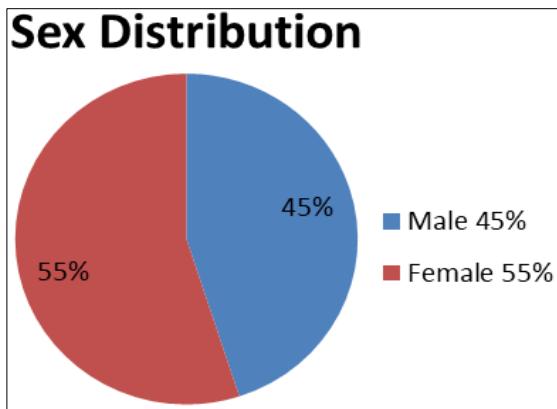
Patients admitted between March 2016 to Nov 2016 were taken into consideration. Serum sodium less than 135 Meqll/ Lt and age more than 50 yrs. were included in this study.

When serum sodium is less than 126 M.eqll the plasma and urine sample are sent for measurements of osmolality by freezing point depression osmometers serum electrolytes and urine spot Na are measured by ion sensitive electrode method.

when serum sodium is<126 M.eqll, Other Parameters like serum osmolality urine osmolality urine spot sodium, costisol, serum T3, T4, TSLT were send for analysis.

Observation

1. Total No of pts C servers Hyponatremia is 4% [4].
2. No of Pts. admitted in 5 months period is 200.
3. No of Pts with Hyponatremia is 28.
4. Male Pts 44% f.56% age distribution Max no 52-63yrs (78) next group is 65-70 yrs (36) and above 75yr is (8 Pts).



Discussion

In our study the patients with serum sodium between 125-135m mol/L are rarely having any symptoms. The patients with serum sodium <125m mol/L was having CNS Symptoms like, lethargy, drowsiness irritability confusion, seizures CT Scan (plain & contrast) of brain was done in all the patients and there was no structural abnormality and these symptoms are attributed to hyponatremia.

There is increase in hospitalization because of increase in Co-morbid condition like hypertension (55%) Diabetes mellitus (48%) Ischemic heart disease (20%), and renal failure (2%) most of the patients are multiple drug like ARBS, ACE Inhibitors, diuretics and oral hypoglycemic agents. These drugs can interfere and predispose them to electrolyte imbalance with metabolism of various electrolytes.

The patient with CNS Symptom were treated with intravenous 3% saline infusion to raise their serum sodium levels by 0.5 m.mol/L per hour to maximum of 12 m.mol/L increase in serum per day. Patients who did not have any central pontine myelinolysis is described as a rare complication of treatment of hyponatremia but recent data has (leave) shown that the rate of correction has little of with the [5, 6, 7] development of central pontine myelinolysis.

Appropriate correction of hyponatremia in patients with symptomatic hyponatremia is recommended in accordance to the guideline for correction of hyponatremia, in general plasma sodium shall not be corrected to more than 25 to 130 m.eq/L assuming that total body water comprises 50% of total body weight 1 m/kg of 3% sodium chloride will raise the plasma sodium by 1 meq/L [8].

In male's mortality is higher 28% when compared with female (10%) may be related to age related brain atrophy. On the basis of the results it appears that physical factors may be more dominate factor of the two in ensuring brain

survival during hyponatremia in elderly female subjects. Many studies show a higher mortality in the elderly patient with sever hyponatremia in 30% to 48% in our study the mortality is 26% and causes of death were coronary artery disease, cerebro vascular accidents, sever sepsis and progressive renal failure [9].

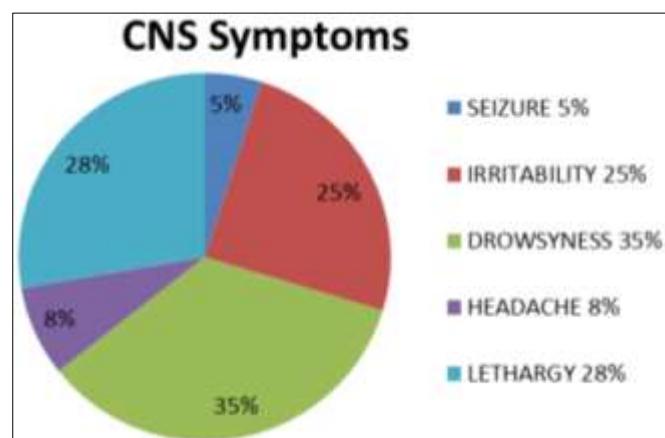
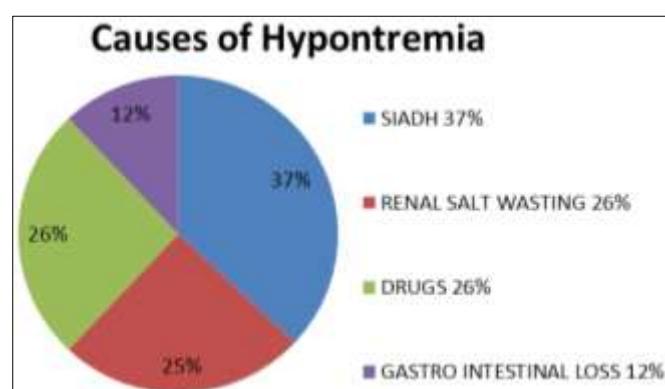
In our study the commonest cause of the hyponatremia was due to SIADH 32% followed by drugs 22% then renal salt wasting and Gastrointestinal losses. Most important factor is during induced as VII JNC recommended diuretics as front line drug for treatment of hypertension a word of caution should be maintained while prescribing duties to the patients especially elderly patients [10].

Conclusion

In our study the mean age in 65yrs light preponderance to female patients that is female 55% and males 45%.

Causes of hyponatremia: Dehydration, drugs. And like hypothyroidism CRF HIV and other infections.

The CNS Symptoms are lethargy 40% and irritability 36% seizures in 8% and Headache is 8% where observe.



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