

Reality or Myth Hyponatremia is Common in Admitted Patients in Medical Wards LUMHS Hyderabad

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ABSTRACT

OBJECTIVE: To see the frequency of hyponatremia in hospitalized patients of medical wards at Liaquat university hospital Hyderabad.

METHODOLOGY: In this Descriptive Cross-sectional Study we included 200 patients admitted in medical wards of Liaquat University Hospital Hyderabad from 1st July to 31st August 2013, Serum sodium level of these patients was sent and results were recorded on a preformed proforma. We included all patients admitted in ward through emergency or out patients department.

Inclusion Criteria: In this study patients attending emergency and OPD were included in between age of 12 years to 80 years.

Exclusion Criteria: In this study we excluded all patients with acute myocardial infarction, angina, and traumatic emergency.

RESULTS: Among 200 patients, we found 44%(88) patients having hyponatremia with 36%(72) patients with mild to moderate hyponatremia and 8% (16) patients have moderate to severe hyponatremia. Males have increased frequency of hyponatremia than females. Study concludes that frequency of hyponatremia is more frequent with increasing age.

CONCLUSION: Hyponatremia is common problem seen in admitted patients in male wards.

KEYWORDS: hyponatremia, medical words, liaquat university hospital.

INTRODUCTION

Hyponatremia defined as a serum sodium concentration <135 mEq/L,¹⁻⁶ no local data is available in Pakistan. Hyponatremia can be classified as mild (128 to 134meq/L), moderate (120 to 127meq/L), and severe (less than 120meq/L).⁷⁻⁸ Hyponatremia can be hypovolemic or euvolemic each of them has different mechanism and causes. In hypervolumic hyponatremia there is decrease in intravascular volume and increase in ADH secretion its common causes are congestive heart failure, nephritic syndrome and cirrhosis. In hypovolemic hyponatremia there is loss of sodium through body fluids and replacement with free water its common causes are vomiting, diarrhea, sweating, burns, Addison's disease. In euvolemic hyponatremia there is no fluid overload or dehydration; its common causes are psychogenic polydipsia, hypothyroidism and syndrome of inappropriate secretion of ADH (SIADH). hyponatremia mostly causes the neurological manifestations e.g. headache, nausea, vomiting, seizures and coma,⁷ several studies have established an association between severe hyponatraemia and increased morbidity and mortality rates^{9,10,11} This adverse outcome may be the result of the underlying disease and/or direct complications of hyponatraemia, including cerebral oedema in acute hyponatraemia^{9,12}

and the osmotic demyelination syndrome (ODS) after overly rapid correction of chronic hyponatraemia¹¹. The objective of study is to see the frequency of hyponatremia in hospitalized patients.

METHODOLOGY

This cross sectional study was conducted in the department of medicine Liaquat University Hospital Hyderabad during 1st July 2013 to 31st August 2013. Two hundred patients of both sex with different ages were taken for the study. These patients were admitted with different diseases. Serum sodium level of all these patients were sent to laboratory. A proforma was designed which includes history, diagnosis and serum sodium level. Data of 200 patients was collected on proforma to see the frequency of hyponatremia. The values of serum sodium level considered in the study were: Normal level 135 to 148meq/L, Mild Hyponatremia 128 to 134meq/L Moderate Hyponatremia 120 to 127meq/L, severe Hyponatremia less than 120 meq/L.

Inclusion Criteria:

In this study patients attending emergency and OPD were included in between age of 12 years to 80 years.

Exclusion Criteria:

In this study we excluded all patients with acute myocardial infarction, angina and traumatic emergency.

RESULTS

In this study we included 200 patients, out of which we found 44%(88) patients have hyponatremia with 36% (72) patients have mild to moderate hyponatremia and 8% (16) patients have moderate to severe hyponatremia. 30%(60) males have hyponatremia with 25% (50) patients have mild to moderate and 5% (10) patients have moderate to severe hyponatremia. 14% (28) females have hyponatremia with 11%(22) patients have mild to moderate hyponatremia and 3% (6) patients have moderate to severe hyponatremia. Males have increased frequency of hyponatremia then females. There is slightly increased frequency of hyponatremia with increasing age. In medical wards frequency of hyponatremia is common in chronic liver disease. So it is reality that hyponatremia is common problem in our admitted hospital pts.

FIGURE I:

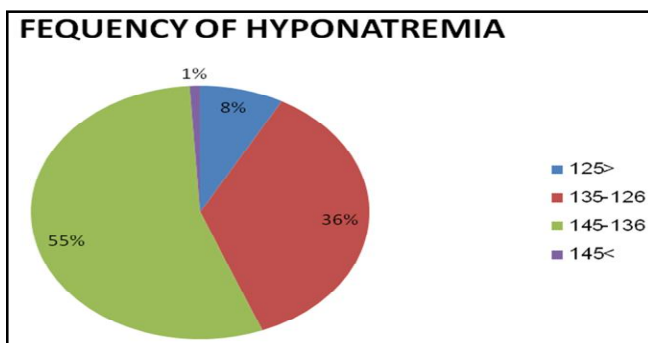
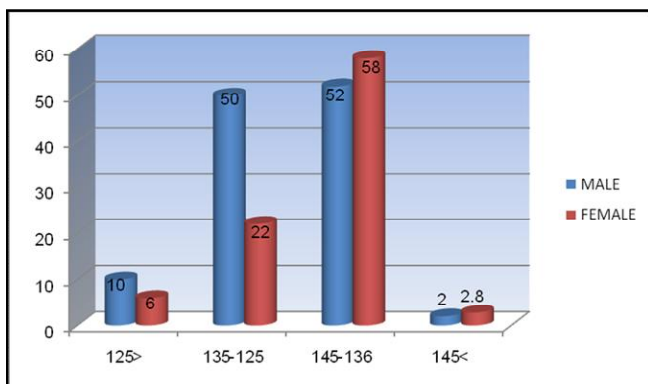


FIGURE II:



DISCUSSION

Our study shows that hyponatremia is common in indoor patients admitted for different diseases in tertiary care hospital at Hyderabad/Jamshoro Sindh. Out of 200 patients studied, we found 44%(88) patients have hyponatremia with 36%(72) patients have mild to moderate hyponatremia and 8% (16) patients have moderate to severe hyponatremia. 30%(60) males have hyponatremia with 25% (50) patients have mild to moderate and 5% (10) patients have moderate to

TABLE I: AGE OF PATIENTA SUBJECT AND HYPONATREMIA CROSSTABULATION

Age of study subject	HYPON				Total
	<125	126-135	136-145	>145	
13-30yrs	2	23	39	1	65
30-45yrs	1	9	15	0	25
45-60yrs	8	16	27	1	52
>60 yrs	5	24	29	0	58
Total	16	72	110	2	200

TABLE II: DIAGNOSIS OF PATIENT

	Frequency	Percent
CLD	42	21
DM	16	8
Stroke	25	12.5
Hypertension	5	2.5
COPD	15	7.5
Meningitis	21	10.5
T.B	18	9
Snake Bite	12	6
Organophosphorus poisoning	9	4.5
Others	37	18.5
Total	200	100

severe hyponatremia. 14% (28) females have hyponatremia with 11%(22) patients have mild to moderate hyponatremia and 3% (6) patients have moderate to severe hyponatremia. Males have increased frequency of hyponatremia then females. There is slightly increased frequency of hyponatremia with increasing age, in medical wards frequency of hyponatremia is common in chronic liver disease then in stroke.

Comparison between our study and other studies indicates that hyponatremia is much more common in our setup. William M et al took the data of 13,979 patients admitted over a 46 months period from the registered record system (RMRS) in Indiana¹³. He demonstrated that out of 13,979 patients 763(4%) were admitted with hyponatremia¹³. Marya D. Zilberberg et al performed a retrospective cohort study of hospitalized patients in US¹⁴. He collected data of 198, 281 patients and demonstrated that the incidence of hyponatremia at admission was 5.5 % (n = 10,899)¹⁴. Robert J et al conducted study at denver, Colorado

and demonstrated that daily incidence and prevalence of hyponatremia averaged 0.97% and 2.48%, respectively⁸. It is known that hyponatremia is more common in hospitalized patients than in ambulatory individuals¹⁵. The association of hyponatremia with mortality in hospitalized patients with specific comorbidities (CHF, cirrhosis, pneumonia, acute myocardial infarction, or cancer) has been well characterized^{16,17, 18,19,20}. In a non selected large group of hospitalized patients, two studies have shown that even mild hyponatremia associates with an increased risk of in-hospital and long-term mortality. A higher proportion of hyponatremic patients required intensive care unit (ICU) (17.3% vs. 10.9%, $p < 0.001$) and mechanical ventilation (MV) (5.0% vs. 2.8%, $p < 0.001$) within 48 hours of hospitalization. Hospital mortality (5.9% vs. 3.0%, $p < 0.001$), mean length of stay (HLOS, 8.6 ± 8.0 vs. 7.2 ± 8.2 days, $p < 0.001$) and costs ($\$16,502 \pm \$28,984$ vs. $\$13,558 \pm \$24,640$, $p < 0.001$) were significantly greater among patients with hyponatremia than those without¹⁴.

There are several limitations in this study. We conducted this study on small number of patients and patients were not follow up for prognosis. So far less or no data is available regarding frequency in our setup. In conclusion, the present study showed that hyponatremia is much more common in patients at department of medicine CH Hyderabad. Considering increase mortality and morbidity associated with hyponatremia emphasis should be made on the care of such patients and further large scale study on this subject is recommended.

CONCLUSION

Hyponatremia is common in patients admitted in medical wards in liaquat university hospital. Males have increased frequency of hyponatremia than females because mostly they work outside home in hot environment, there is only slightly increased frequency of hyponatremia with increasing age.

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