

The prevalence and mortality in Hospitalised Patients with Mild, Moderate and Severe Hyponatremia

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Introduction:

Hyponatraemia, defined as serum sodium < 135 mmol/L is the commonest electrolyte abnormality, especially amongst hospitalised patients and is associated with increased length of stay, morbidity and mortality.

Aim:

To determine the prevalence of mild, moderate and severe Hyponatraemia in the hospitalised patients and estimate mortality between these three groups and compared against Normonatremic group.

Methods:

This is an observational retrospective audit in patients admitted to Acute Hospital Trust across 3 sites from July 2010 to July 2011. The data are obtained from hospital clinical laboratory and patients' Data Registry. The admission sodium is used for statistical comparisons. The Hospital Clinical Governance approved the audit. Normonatremia is defined as Serum Sodium (SNa) 135 to 144 mmol/L, Hyponatraemia as <135 mmol/L and Hypernatremic as > 145 mmol/L.

Results:

The total study population was 98,078. The mean age was 55.85 (+SD20.67) and 55.12% were males and 44.88% were females. 45.26% were 60 years and older and 54.74% was less than 60 years of age. Hyponatraemia was observed in 5.05 % on admission. The data showed that there were significant age differences between the different sodium groups with normal range being the youngest and those with severe hyponatraemia, the oldest ($p < 0.0001$). There were significant differences between gender and sodium levels with men having the highest levels in severe hyponatraemia category ($p < 0.001$). There were significant differences in mortality according to sodium level with lowest mortality in normal group and the highest death rate in hypernatremic group ($p < 0.001$).

Conclusion:

Hyponatraemia as well as Hypernatremia is associated with increased mortality compared to Normonatremic group.

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Sex	Freq	Percent	Cum.
F	54,064	55.12	55.12
M	44,014	44.88	100.00
Total	98,078	100.00	

Sodium	Freq.	Percent	Cum.
< 135	4,954	5.05	5.05
135-144	89,224	90.97	96.02
>=145	3,900	3.98	100.00
Total	98,078	100.00	

Summary of Age

Sodium mmol/LI	Mean	Std. Dev.	Freq.
< 135	67.920065	18.599677	4954
135-144	54.797039	20.515345	89224
>=145	64.819487	19.840263	3900
Total	55.858429	20.677769	98078

agegrp	Freq.	Percent	Cum.	
1	14,858	15.15	15.15	16-30
2	11,351	11.57	26.72	31-40
3	13,770	14.04	40.76	41-50
4	13,711	13.98	54.74	51-60
5	15,737	16.05	70.79	61-70
6	15,721	16.03	86.82	71-80
7	12,930	13.18	100.00	> 80
Total	98,078	100.00		

	Mortality			Sodium range mmol/L			
	Within 30 days	< 135	135-144	>=145	Total		
No	4,238	85.55	86,805	3,002	94,045	95.89	
Yes	716	14.45	2,419	898	4,033	4.11	
Total	4,954	100.00	89,224	3,900	98,078	100.00	
Within 1 year							
No	3,773	76.16	83,714	2,848	90,335	92.11	
Yes	1,181	23.84	5,510	1,052	7,743	7.89	
Total	4,954	100.00	89,224	3,900	98,078	100.00	
Within 2 year							
No	3,485	70.35	81,260	2,751	87,496	89.21	
Yes	1,469	29.65	7,964	1,149	10,582	10.79	
Total	4,954	100.00	89,224	3,900	98,078	100.00	