

Impact of hyponatraemia in patients with fracture neck of femur

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Introduction

Hyponatraemia, defined as serum sodium <135 mmol/L is commonest electrolyte abnormality and is frequently encountered in elderly population. It is associated with osteoporosis and falls and an independent risk factor for fractures. The reported one-year mortality for fracture neck of femur is between 20% and 35%.

Aim

To evaluate the impact of hyponatraemia on patients with fracture neck of femur compared to normonatraemia admitted to the hospital.

Methods

This is an observational retrospective audit to look at the incidence of hyponatraemia and outcomes such as length of stay, time to operation and mortality in patients admitted to acute hospital from October 2009 to March 2011. The admission sodium was used for statistical comparison.

Results

1050 patients were admitted with fracture neck of femur during this period. There were 23.1% of subjects with Na <135mmol/L and 73.14% with normal sodium, defined as 135 to 144 mmol/l. Among the hyponatraemic group, 16.48% had Na 130-134 (mild), 4.95% Na 125-129 (moderate) and 1.72% Na <120 (severe). Patients with hyponatraemia Na <135 mmol/l on admission to hospital had significantly increased length of stay and delayed time to operation compared with normonatraemic group. They were also older than the patients with normal sodium. There was no difference with regards to within 30 days and over 30 days mortality in both groups. This may be due to the higher mortality associated with fracture neck of femur and in both groups the mortality was around 25% in keeping with other studies.

Hyponatremia vs normonatremia (<135 vs 135-144)

Variable	Hyponatremia (n=243)	Normonatremia (n=768)	p
Age – mean (SD)	81.53 (10.85)	79.43 (15.19)	0.046
Gender – men (n %)	63 (25.93)	229 (29.82)	0.24
Length of Stay – median	25 (11, 49)	21 (11, 40)	0.046
Time to operation –	2 (1, 5)	1 (1, 3)	0.048
Overall mortality	62 (25.51)	203 (26.43)	0.78
Mortality with 30 days	29 (11.93)	99 (12.89)	0.70
Mortality over 30 days	33 (13.58)	104 (13.54)	0.99

Conclusion

There was high prevalence of hyponatraemia in patients with fracture neck of femur. The length of stay was significantly longer by 4 days and the time to surgery was delayed by 1 day in hyponatraemic subjects. Early identification and management of hyponatraemia and associated medical conditions may help to improve the clinical outcomes.

References

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