

A STUDY OF HYPONATRAEMIA IN ACUTE MEDICAL ADMISSIONS

H.Hendra, F.Graham, C.Catley, T.Boitsova, T.Rezk, S.Sankaralingam, S.Abeygunasekara

Broomfield Hospital, Chelmsford, UK

Introduction

Hyponatraemia is the commonest electrolyte balance disorder in clinical practice and occurs in up to 30% of hospitalized patients.

It is closely associated with increased morbidity, mortality and length of hospital stay. Mortality has been shown to be around 25% in patients with serum Na⁺ 120 – 125 mmol/L and up to 40% if Na⁺-level <114 mmol/L.¹

It can be classified into mild (125 - 134 mmol/L), moderate (115 - 124 mmol/L) and severe (< 115 mmol/L). The aim of this study was to determine the prevalence, aetiology and management of hyponatraemia in general hospital.

Methods

A total of 4139 acute medical admissions from September to November 2012 were studied. Hyponatraemia was found in 536 patients (12.9%) with 441 being mild, 86 moderate and 9 severe based on the above criteria; 130 cases were randomly selected and analysed further in details.

Results

Out of 130 cases; 87 were of mild (67%), 42 moderate (32%) and 1 of severe hyponatraemia (0.8%). The Na⁺-level were ranging from 114 mmol/L to 130 mmol/L in our cohort. The mean age was 75.1 years (17 - 99) and there is an equal male to female ratio.

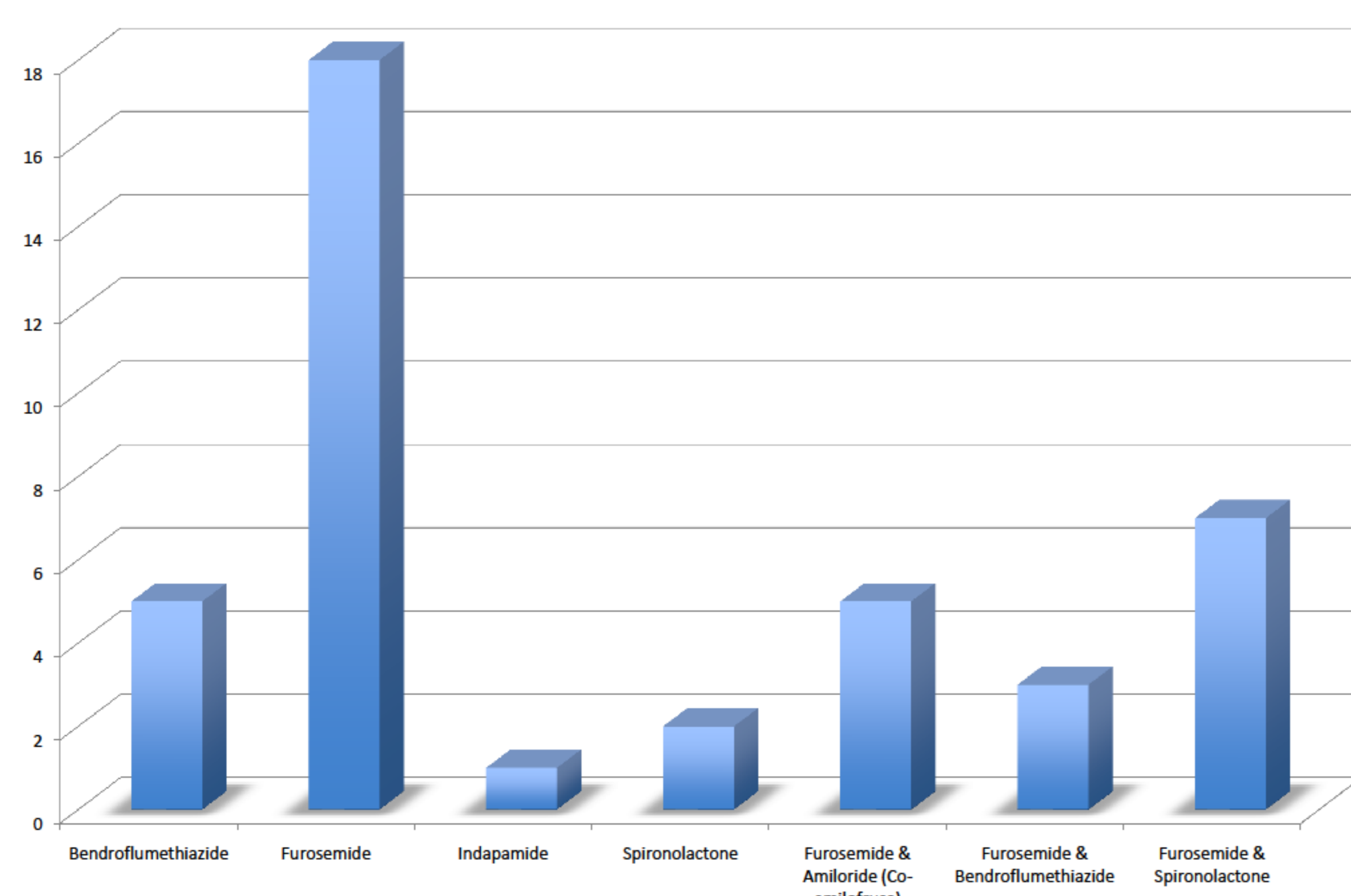


FIGURE 1: The type and number of diuretics taken

The cause of hyponatraemia was only identified in 89 patients (68% of cases). Diuretics either as monotherapy or in combination were noted as the cause of hyponatraemia in the majority of patients (46%). **Figure 1** describes the number of patients and the diuretics used.

Syndrome of Inappropriate ADH Secretion (SIADH) was diagnosed in 36 patients (40%). Fluid overload was found in 13% of cases (12/89). The treatment given included intravenous fluid resuscitation in 52, cessation of diuretics in 41 and fluid restriction in 48 of cases. Both intravenous fluid therapy as well as fluid restriction were documented in 14 patients. In total Demeclocycline was given to 3 patients, none of the subjects received hypertonic saline or Vasopressin receptor antagonist. While the average length of stay for all medical admissions was 4 days, the average length of stay in those with hyponatraemia was significantly prolonged with 17.1 days (2 – 70). **(Figure 2)**

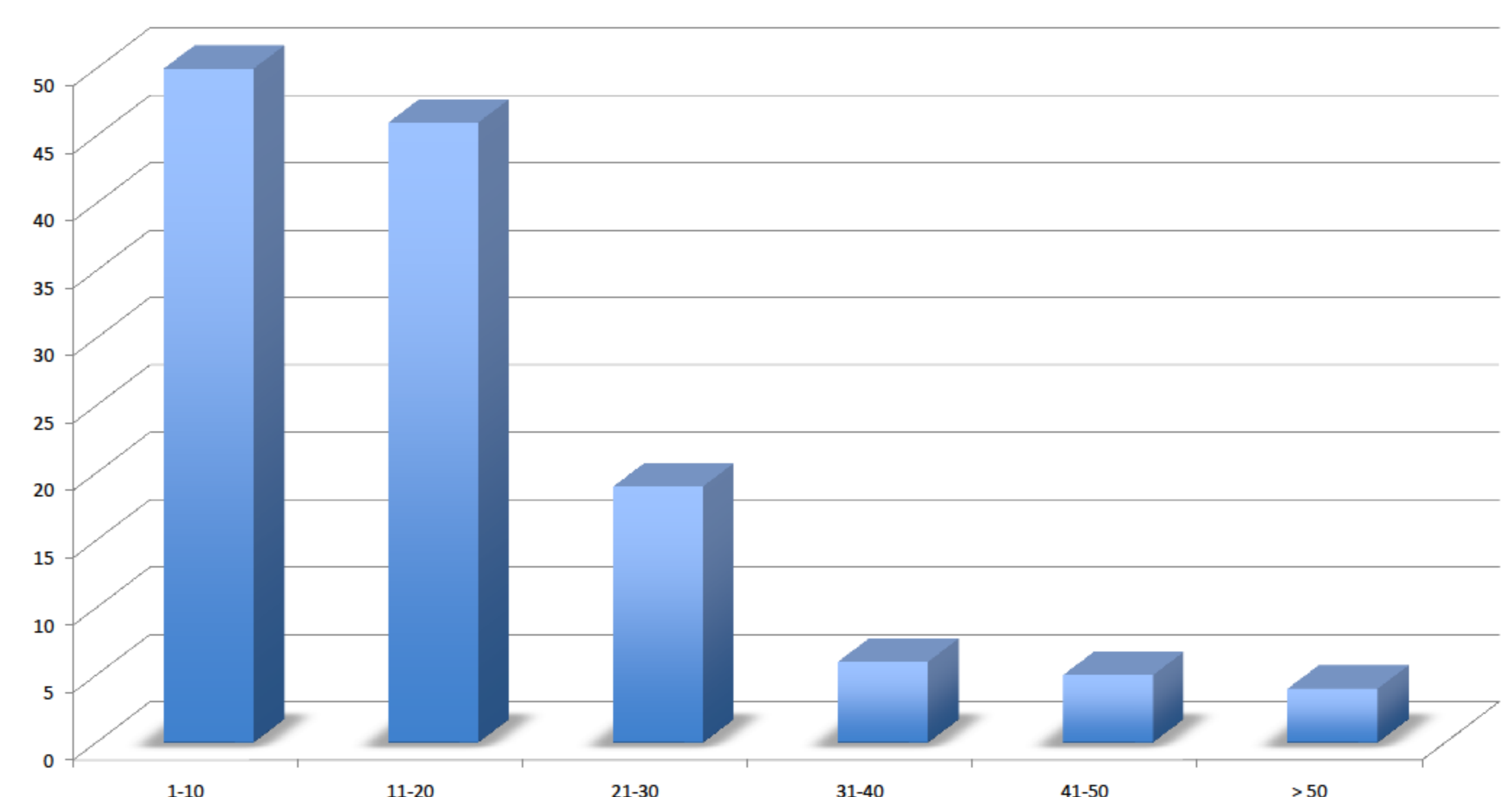


FIGURE 2: Length of stay in hospital for patients with hyponatraemia (in days)

Conclusions

Hyponatraemia which was present in 12.9% of our medical admissions is associated with a significant increase in the length of time patients stay in hospital. Our study revealed that the use of diuretics and SIADH were the main cause of hyponatraemia, it also highlighted the challenge in identifying the condition as it showed that in 32% of patients a diagnosis was not reached. Further evidence of this issue is also seen in the inconsistent management in some cases. In response to this issue, a trust guideline which includes a flowchart of how to manage hyponatraemia has been developed to improve patient care.

References

- Gill G, Huda B, et al. Characteristics and mortality of severe hyponatremia – a hospital based study. Clin Endocrinol (Oxf). 2006 Aug;65(2):246-9
- UK Consensus Algorithm for Hyponatraemia by Prof. Ashley Grossman (Oxford). "Inpatient hyponatraemia and SIADH management guidance", 2014.