Hyponatremia is the most common electrolyte disturbance and associated with considerable morbidity and mortality. Data on the frequency of hyponatremia in the Emergency Department (ED) is limited, especially in older patients.

### Aim of the Study
- **Primary objective:** to gain insight in prevalence, etiology, treatment and prognostic implications of hyponatremia in patients ≥65 years presenting to the ED.
- **Secondary objective:** differences in presentation and outcome between the study population and normonatremic elderly ED patients.

### Methods
We performed a retrospective cohort study of all internal medicine patients aged ≥65 years presenting to the ED in a one year period. Demographic, clinical characteristics and outcome were obtained from clinical records. Hyponatremia was subdivided into mild (134–130 mmol/L), moderate (129–125 mmol/L), and severe (<125 mmol/L). Univariable and multivariable Cox regression analyses were performed to estimate the effect of covariates on patient outcome, expressed as hazard ratio (HR) and 95% Confidence Intervals (CI).

### Results
1438 visits of patients ≥65 years were identified, of which 303 elderly patients were hyponatremic, representing a prevalence of 21.1% (95%CI 19.0-23.2%). Hyponatremia was classified as mild in 212 (70.0%), moderate in 58 (19.1%), and severe in 33 elderly patients (10.9%).

### Patient Outcome
89% of hyponatremic elderly patients were hospitalized, compared with 70% of normonatremic patients (p<0.001). Median length of hospital stay was 7 days in hyponatremic and 6 days in normonatremic patients (p=0.004). Three-month survival was 70% (64–76%) in hyponatremic elderly versus 84% (82–86%) in normonatremic elderly.

### Conclusion
Hyponatremia is a common electrolyte disturbance among elderly internal medicine patients presenting to the ED and is associated with higher admission rates, longer hospital stay, and higher mortality rates. In particular, moderate hyponatremia was a marker of underlying frailty and predictive of mortality.

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