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Severity of community acquired hypernatremia is an independent predictor of increased mortality

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Background: Hypernatremia is common in critically ill patients and is associated with adverse outcome. However, community acquired hypernatremia (CAH) in general hospital has been rarely studied. We investigated CAH according to severity or duration of hypernatremia.

Methods: We retrospectively analyzed patients admitted to an urban tertiary hospital from January 1st, 2012 to December 31st 2014. Community acquired hypernatremia was defined as more than 147 mEq/L at admission without transfer from other hospitals. Severity was categorized as mild (148-150 mEq/L), moderate (151-154 mEq/L) and severe (≥ 155 mEq/L). The main outcome was long term mortality.

Results: During the study period, 79,998 patients admitted to the hospital. Of them, 178 patients(0.2%) had hypernatremia at admission: 121 (68.0%) with mild hypernatremia, 33(18.5%) with moderate hypernatremia and 24 (13.5%) with severe hypernatremia at admission. In maximum sodium, 91(51.1%) developed mild hypernatremia, 31(17.4%) developed moderate hypernatremia and 56 (31.5%) developed severe hypernatremia. Mean duration of hypernatremia was 2.3 ± 2.0 days. The median follow-up period was 31.5 (interquartile range, 5 to 175) days and mortality of CAH was 24.7%. Multivariate analysis showed that moderate (HR=3.33, 95% CI[1.18-9.37]) and severe hypernatremia (HR=3.21, 95%CI [1.11-9.27]) at maximal level was an independent risk factor for long term mortality compared to mild hypernatremia. However, initial level of sodium and duration of hypernatremia was not associated with long term mortality.

Conclusion: Maximum level of sodium in CAH was an independently associated with the long term mortality in general hospital.

Keywords: Hypernatremia, Mortality, Sodium