Caution in Correcting Hyponatremia in Patients on Vasopressin

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Introduction

- Vasopressin is commonly used as a pressor agent in the treatment of septic shock.
- Despite the frequent use of vasopressin, few cases of hyponatremia have been reported in association with its use.

Case Presentation

- A 24-year-old male presented with status epilepticus requiring mechanical ventilation.
- The hospital stay was complicated by ventilator associated pneumonia and sepsis requiring vasopressin infusion to maintain his blood pressure.
- The patient developed hyposmolar hyponatremia (serum Na=126 mEq/L; serum osmolarity=265 Osm/L).
- Water restriction and discontinuation of vasopressin resulted in polyuria and an abrupt rise in serum sodium to 140 mEq/L, mimicking diabetes insipidus.

Discussion

- Vasopressin is synthesized in the hypothalamus and secreted by the posterior pituitary gland.
- It acts on the V1 receptors on the blood vessels to induce vasoconstriction.
- It also acts on the distal tubules and collecting ducts in the kidneys via V2 receptors to promote water reabsorption.

Conclusions

- Although vasopressin frequently is used in the ICU, it is not frequently associated with electrolyte abnormalities.
- This case reminds us that 1) vasopressin is rarely associated with hyponatremia, and 2) abrupt discontinuation of vasopressin can result in a rapid and unexpected correction of the serum sodium.

References