Copeptin for the differential diagnosis and therapy management of hyponatremia in hospitalized patients ”The Co-MED-Study”

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Background & Aim

Background:
• Hyponatremia is the most common electrolyte disorder in clinical routine and its differential diagnosis is challenging
• The most important osmo- and volume-regulated hormone is arginine vasopressin (AVP). The amount of plasma AVP is regulated by osmotic and non-osmotic stimuli
• The measurement of AVP is cumbersome
• Copeptin is more stable, released in an equimolar ratio with AVP and can be assayed in plasma

Aim of the study:
• To evaluate the usefulness of copeptin as a new diagnostic and prognostic tool in the differential diagnosis and in therapy management of profound hyponatremia

Patients & Methods

Setting:
• All patients admitted to the University Hospital of Basel and the Kantonsspital Aarau with profound hyponatremia (Na+ <125mmol/L) were included in the study

Work-up on admission:
• Complete medical history
• Clinical items (physical examination, volume status, HR, BP, temp., weight, etc.)
• Routine laboratory tests and copeptin measurements

Final diagnosis:
• The final diagnosis was made retrospectively by three experts blinded to copeptin levels and was based on our clinical algorithm (see Figure 2), complete chart review and therapy response

Results

Plasma copeptin levels in the differential diagnosis of profound hyponatremia show a wide overlap. Nevertheless, copeptin levels identify a subset of patients with a clear need of saline infusion or fluid restriction and may be a helpful new tool for a more rapid and targeted treatment in patients presenting with profound hyponatremia. The best prediction of therapeutic management is achieved when combining copeptin, volume status and FEuric acid.

Summary & Conclusion