Predictors of vasopressin responsiveness in critically ill adults
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Background
• Vasopressin is an endogenous hormone that acts on V1-receptors causing vasoconstriction.1,2
• In patients with septic shock, serum vasopressin concentrations exhibit a biphasic pattern, with increased endogenous vasopressin levels immediately after the onset of shock, followed by a significant reduction with shock progression.3,4
• This relative deficiency in vasopressin is thought to contribute to hypotension.4
• Vasopressin as an add-on vasopressor significantly reduces concurrent vasoactive agent requirements by restoring vascular tone and increasing mean arterial pressure in patients with septic shock.5-11
• In clinical practice, response to vasopressin varies widely among critically ill patients. Specific predictors of vasopressin-responsiveness are lacking in the current literature.

Methods
• To identify if there are patient-specific characteristics that predict responsiveness to vasopressin in patients with shock
• To identify a patient population who would be more likely to benefit from the use of vasopressin

Inclusion Criteria
• Age ≥ 18 years
• Admission to an adult intensive care unit (ICU)
• Initiated on a vasopressin infusion for shock

Exclusion Criteria
• Received vasopressin for < 30 minutes
• Vasopressin initiated in the operating room or prior to ICU arrival
• Additional catecholamine(s) started and/or titrated within 30 minutes of starting vasopressin

Primary Endpoint
• Vasopressin responsiveness (defined as an increase in mean arterial pressure [MAP] ≥ 10 mm Hg or ability to taper a concurrent catecholamine) at time of first blood pressure (BP) reading after start of infusion

Multivariate analysis
• Age
• Gender
• Ethnicity
• Body mass index
• Type of shock (septic, cardiogenic, hypovolemic, or mixed)
• Serum pH
• Sequential Organ Failure Assessment (SOFA) score
• Volume of fluids received 6 hours prior to vasopressin initiation
• Vasopressin as first-line or add-on vasopressor
• Concomitant use of stress dose steroids (≥ 300 mg of hydrocortisone per day)

Data Collection
The following information will be obtained from Business Objects MUE Universe and the electronic medical record:
• Patient demographics
• Height (cm)
• Weight (kg)
• ICU location
• Type of shock
• ICU and hospital length of stay
• Vasopressin start date and time
• Concurrent catecholamines
• Blood pressure (systolic, diastolic, and MAP)
• Mode of BP measurement (arterial line vs BP cuff)
• Platelet count
• PaO2/FiO2
• Serum creatinine
• Glasgow coma score
• Bilirubin

References

Disclosures
The authors have no conflicts of interests regarding personal or financial relationships with commercial entities that may have influenced the content or subject matter of this presentation.