A Comatose Patient: A Systematic Approach To Diagnosis And Management In An Emergency Room Setting

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Supplemental Video

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Introduction:
In a comatose patient, uncovering underlying etiology is challenging due to the lack of history. We present a systematic approach to creating a differential and identifying a diagnosis in an unconscious patient.

HPI:
A 35-year-old male presented via EMS after being found unconscious in his car. Patient was last seen 6 hours prior. Vitals were significant for hyperthermia 108.9 F, tachycardia 161 BPM, and hypotension 75/26 mmHg. Past medical history significant for type 1 diabetes, noncompliant with insulin.

Physical Exam:
Patient was not alert or oriented and appeared unkempt with GCS of 3. He had no response to painful stimuli and exhibited decorticate posturing. He was tachycardic on arrival.

Differential Diagnosis:
In approaching an unconscious patient, the mnemonic AEIOU TIPS may be utilized: A-alcohol, E-epilepsy/exposure, I-insulin, O-overdose, U-uremia, T-types of shock, I-infection, P-poisoning, S-stroke.

Hospital Course:
Based upon the differential, each etiology was worked up. Patient's blood alcohol was <10. For prophylaxis, levetiracetam was started and an EEG completed showing no seizure activity. Patient's blood glucose was 108 and an urinalysis showed no ketones or glucose. Patient received Narcan with no improvement. Urine toxicology returned negative. An ABG was done to check for respiratory depression showing respiratory acidosis and patient was intubated for airway protection. With BUN 17, uremia was unlikely. Patient was started on norepinephrine and NS for shock. Negative EKG, CXR, and echo eliminated cardiogenic and obstructive causes. Hypovolemia secondary to dehydration was likely due to recovery with resuscitation. Vancomycin and piperacillin-tazobactam were started as patient met sepsis criteria. Negative imaging excluded stroke. Excluding other differentials and meeting diagnostic criteria (temperature >105 and CNS dysfunction), a diagnosis of heat stroke was made. Ice was placed in the groin and axilla and his temperature decreased to 100.9. As a complication, patient developed DIC and was treated with cryoprecipitate, platelets, and vitamin K. Patient also developed acute renal and liver failure secondary to hypo-perfusion and rhabdomyolysis which was treated with NS with D5W and HCO3, N-acetylcysteine, and sodium citrate.

Outcome:
After a prolonged course, recovery of liver and renal function was seen. Mentation improved and patient was extubated.

Learning Objectives
1. Identify the underlying etiology in an unconscious patient in an emergency room setting.

2. Discuss complications and management of a heat stroke.

References and Resources
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1860726/pdf/987.pdf