**The Hidden Perils of Running After Dark: A Case of Nocturnal Heat Stroke**

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Introduction

Exertional Heat Stroke (EHS) is a critical condition resulting from the body's inability to dissipate heat produced during intense exercise. It is characterized by significantly elevated core body temperature, central nervous system dysfunction, and multi-organ failure. EHS can occur in hot and humid conditions, regardless of the time of day.

Case description

A 17-year-old healthy girl was brought to the emergency department (ED) by university ambulance one hour after being found unresponsiveness following a two-hours night run at the campus stadium. Upon arrival, her vitals were: blood pressure 94/68 mmHg, heart rate 168 bpm, temperature 39.7°C, oxygen saturation 98% on room air, and Glasgow Coma Scale (GCS) score of E1V2M4. She exhibited muscle spasms in all four limbs. Blood gas analysis revealed lactic acidosis. Initial resuscitation in the ED included aggressive cooling with ice packs, a cooling fan, tepid sponging, and three liters of cold isotonic saline infusion. Her temperature decreased to 37.7°C with good urine output. However, her GCS did not improve, necessitating intubation. A brain computed tomography scan showed generalized cerebral edema without intracranial bleeding. Blood tests revealed rhabdomyolysis (creatine kinase 26,446 U/L) and acute kidney injury. The patient was admitted to the ICU and extubated after three days. Her GCS recovered, and her kidney injury resolved by the time of discharge after six days of hospitalization.

Discussion

EHS can occur with intense physical activity even without extreme environmental conditions due to factors such as high humidity and inadequate acclimatization. This case highlights the vigilance in diagnosing heat stroke following prolonged exertion, even at night. Aggressive cooling measures aimed to address hyperthermia-induced cerebral edema, but the poor GCS suggests potential delays in optimal management and transportation to the hospital. The patient's development of rhabdomyolysis and acute kidney injury illustrates the multisystem involvement of heat stroke. Early recognition and effective management of heat-related illnesses are essential to prevent serious complications.

Conclusion

Nighttime exercise poses hidden risks of heat-related illnesses despite cooler temperatures, with humidity and acclimatization being contributing factors. Early diagnosis, aggressive cooling, and proper hydration remain the cornerstones of effective EHS management.

Keywords: Heat stroke, Exercise, Cerebral edema