Hyperthermia, Heat Injury, and Heatstroke

Heat injuries are a significant cause of morbidity and occasional mortality. Rising temperatures, humid environments, and comorbid conditions all contribute to the risk.

HEATSTROKE

- Imbalance of heat generation vs heat clearance, defined as temperature >40° with neurologic manifestations
- Two types include nonexertional (classic) and exertional

EVALUATION

1. Evaluate for triggers and comorbid conditions
2. Basic laboratory assessment to include toxicology screen
3. Exclude other conditions and mimics

TREATMENT

- Continuous temperature monitoring
- Reduce core temperature to 38° as rapidly as possible, and stop active cooling at 38° - 39°
  1. Surface cooling >> Cooling rate of about 0.1°C per minute
  2. Internal cooling >> Refrigerated crystalloid: Each liter of chilled crystalloid cools the patient by roughly 1°C

*Avoid use of antipyretic agents

Heatstroke is a potentially fatal condition that occurs in the setting of hyperthermia (core temperature typically >41°)

Multimodal cooling strategy should be implemented with both internal and surface cooling approaches

Diagnostic work-up includes accurate assessment of core temperature and reversible triggers (ie, toxic ingestion)

Preventative measures should be implemented, such as activity modification, ensuring adequate hydration for those at risk

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