Top Ten Things To Know
Temperature Patterns in the Early Post-Resuscitation Period after Pediatric In-Hospital Cardiac Arrest

1. Fluctuations in body temperature effects neurons; hypothermia is neuroprotective and hyperthermia causes neuronal injury.

2. The 2005 AHA Guidelines for CPR and Emergency Cardiovascular Care (ECC)\(^1\) recommended treating fever aggressively postresuscitation.

3. This study sought to evaluate whether post cardiac arrest hyperthermia is associated with worse outcomes, and if the prevalence of post-arrest hyperthermia would decrease after the publication of the 2005 AHA Guidelines for CPR and ECC.

4. The primary outcome of this study was
   - Occurrence of hyperthermia during first 24 hours postresuscitation.

5. Secondary outcomes were
   - Neurologic status at discharge from hospital
   - Survival to hospital discharge (SDC)

6. The primary outcome of hyperthermia in the 547 GWTG-R* pulseless cardiac arrest (CA) patients
   - 238/547 (43.5%) had at least one temperature ≥ 38 ºC
   - 165/547 (30.2%) had at least one temperature ≥ 38.5ºC
   - 106/547 (19.4%) had at least one temperature ≥ 39ºC
   - There was persistent hyperthermia >38ºC for 30/547 (5.5%)

7. The secondary outcomes for the 547 pediatric CA patients with reported temperatures were
   - Neurologic outcome- 201/489 (41.1%) had favorable neurologic outcome-based on the pediatric cerebral performance category (PCPC)(the different denominator is due to missing admission PCPC)
   - Survival
     - 440/547 (80.4%) survived > 24 hours
     - 272/547 (49.7%) SDC

8. No significant association was found with having any hyperthermia in the first 24 hours post CA, but persistent hyperthermia was significantly associated with unfavorable neurologic outcomes.

9. The incidence of post-arrest hyperthermia is found in the pediatric population after publication of the 2005 AHA Guidelines for CPR and ECC.

10. Further study could monitor compliance with new 2010 AHA Guidelines for CPR and Emergency Cardiovascular Care (ECC), to avoid post arrest hyperthermia in the pediatric population, and address the impact of strict fever control and/or hypothermia on outcomes

*GWTG-R, formerly NRCPR, is a performance improvement tool that can be used to identify and monitor key process variables and patient outcomes for in-hospital cardiac arrest.

\(^1\) Part 12; Pediatric Advanced Life Support. Circ.2005;112(supplIV) IV-181


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