Top Ten Things To Know

Body Temperature Changes are Associated with Outcomes Following In-Hospital Cardiac Arrest and Return of Spontaneous Circulation

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

2. During a cardiac arrest event and return of spontaneous circulation (ROSC), body temperature can fluctuate.

3. A primary independent outcome for this study was survival to hospital discharge (SDC), and the dependent variable was neurologic outcome.

4. This study evaluates both the neurologic and functional status of those with SDC.

5. Of the 5,436 adult patients surviving to 24 hours post-ROSC, there was 77.1% (4,193) SDC.

6. Survival outcome varied with temperature occurrences for the 3,426 *NRCPR study patients with both a high and low temperature recorded. Those with normothermia showed the best SDC of 86.5% (1,523).

7. Temperature data collection varied.
   - Sites for measuring temperature were not controlled—axilla, oral or tympanic site had decreased odds of hyperthermia being recorded.
   - Incomplete temperature data was provided for 37% of patients that survived 24 hours. These patients had lower survival rates.

8. Study hypothesis: outcomes would be worse for those who experienced episodes of hyperthermia. Patients with hyperthermia had:
   - lower SDC-75.8%, and
   - lower odds of favorable neurologic outcome.

9. Fluctuation in body temperature post-IHCA has a negative impact on survival. Avoiding hyperthermia in the post resuscitation period has also been previously reported to have a significant impact on survival.

10. Further study should address the cause of alteration in the regulation of body temperature in the first 24 hours after ROSC and whether regulating temperature post arrest has a positive impact on outcomes.

*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.

Temperature is associated with Survival, Neurologic and Functional Outcome Following In-Hospital Cardiac Arrest and Return of Spontaneous Circulation: a Report from the National Registry of Cardiopulmonary Resuscitation. Resuscitation. Brian Suffoletto, Clifton Callaway, Mary Ann Peberdy, Terry L. Vanden Hoek, Robert A. Berg for the American Heart Association National Registry of Cardiopulmonary Resuscitation Investigators. NRCPR.org

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