Evidence Based Practice in NH: Therapeutic Hypothermia

By: Taela Leek

Introduction: Therapeutic Hypothermia (TH) is defined as the controlled cooling of the body to a temperature of 36°C or lower to prevent and/or lessen the effects of secondary neurological injury (Wright, 2005). During the last two decades the recommended use of TH has seen several practice changes.

Use After Traumatic Brain Injury (TBI): A literature review of six studies (spanning from 2003-2014) indicated that the risk for adverse neurological outcomes was too great when TH was used; except in cases with refractory increased intracranial pressure (ICP) to the typical standards of care.

Use After Cardiac Arrest: the standard of care for post-cardiac arrest patients who remain comatose (not following commands) (AHA, 2017).

Background:

Traumatic Brain Injury:

- **1960s-** Hospitals were using TH to treat increased ICP after TBI but were unable to control serious side effects
- **1990s-** Clinical trials began anew
- **2011-** Eurotherm3235 trial (2,498 patients, TH did not improve functional outcomes at a sixth-month post injury assessment) (Andrews et al., 2015)

Post- Cardiac Arrest American Heart Association (AHA) Strong Recommendations: (Koyfman & Peter, 2017).

- **Temperature** 32-36°C (Level 1 Evidence)
- **Criteria for Treatment** (Level 1 Evidence)
  - 18 and older
  - Comatose (not following commands)
  - Out-of-hospital or in-hospital cardiac arrest
  - Return of spontaneous circulation regardless of presenting rhythm

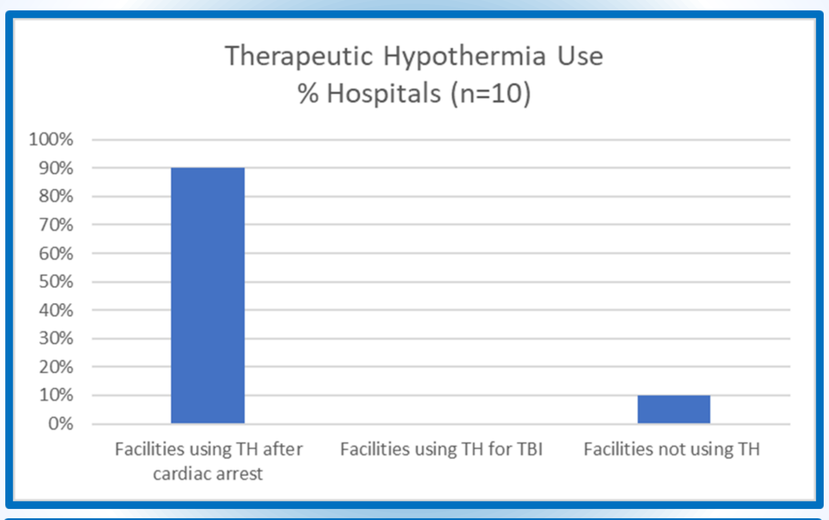
AHA Moderate Recommendation: (Koyfman & Peter, 2017).

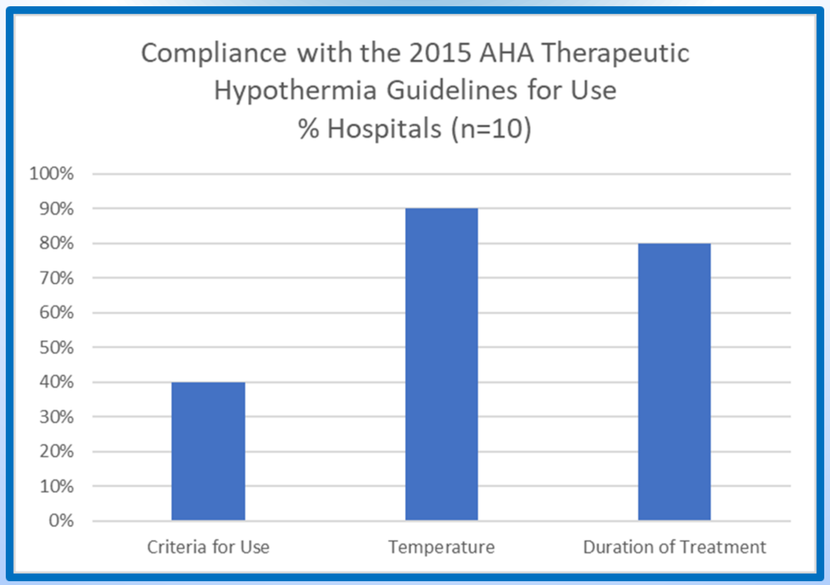
- **Cooling Time-** min. of 24 hours (Level 2 Evidence)

Methods:

- **Evidenced Based Practice Gap Analysis Survey-** a method used to determine the difference between the current evidence and actual practice
- **Setting:** NH ICUs, **Population:** 24, **Recruited:** 15, **Sample Size:** 10, **Response Rate:** 66.6%
- Participants were recruited as organizational informants through phone calls, emails, and face-to-face conversations
- Obtained IRB approval
- 14-question survey created on Qualtrics

Results





Discussion:

- **The largest gap** and best location for improvement is in the AHA post-cardiac arrest criteria for treatment
  - Prior to the 2015 guidelines, the AHA was very specific about which patient populations should receive TH, now its more generalized
- Facilities are either up-to-date or are not completely following any of the most recent AHA guidelines (2015 or 2010)
- 100% of facilities are following the most recent evidence for TH after TBI

Limitations:

- The informants' levels of expertise varied greatly
- The majority of responses were from southern NH
- The survey examines the informant's interpretation of their facility's policy- facilities would not allow access to the actual policies

Conclusion & Implications for Future Practice:

- **For optimal patient safety** after cardiac arrest, NH ICUs need to make a conscious effort to update their TH policies to reflect the 2015 AHA guidelines
- Future research is needed to address the optimal duration of cooling for TH
- **Now that the research shows gaps**... Future research is needed to understand if the current gaps in application are knowledge gaps, skill gaps, or practice gaps