**Targeted Temperature Management After Out of Hospital Cardiac Arrest**

**Clinical Question:** In out of hospital cardiac arrest patients with presumed cardiac cause, is there benefit of targeted temperature management at 33°C vs 36°C?

**Reference:** N Engl J Med. 2013 Dec 5;369(23):2197-206. doi: 10.1056/NEJMoa1310519. Epub 2013 Nov 17.

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**Population:** Unconscious survivors of out-of hospital cardiac arrest of presumed cardiac cause admitted to critical care units in Australia and Scandinavia   
  
**Intervention:** Temperature management at 36°C.

**Comparison:** Temperature management at 33°C.

**Outcome:** All cause mortality. (Secondary outcome was a composite of poor neurologic function or death at 180 days)

**Authors’ Conclusions:** Our trial does not provide evidence that targeting a body temperature of 33°C confers any benefit for unconscious patients admitted to the hospital after out-of-hospital cardiac arrest, as compared with targeting a body temperature of 36°C.

**Quality Checklist:**

1. The study population included or focused on those in the ED.

**Comment:** Although all these patients would be seen in the ED it is important to note that both study populations had to undergo active temperature management to achieve either 33°C or 36°C. Given that active cooling is a process that takes hours, the true practical implications for this paper may be more focused on the patient's stay in the ICU.

2. The patients were adequately randomized.



3. The randomization process was concealed.

4. The patients were analyzed in the groups to which they were randomized.

5. The study patients were recruited consecutively (i.e. no selection bias).

6. The patients in both groups were similar with respect to prognostic factors.

7. All participants (patients, clinicians, outcome assessors) were unaware of group allocation.

8. All groups were treated equally except for the intervention.

9. Follow-up was complete (i.e. at least 80% for both groups).

10. All patient-important outcomes were considered.

11. The treatment effect was large enough and precise enough to be clinically significant.

**Key Results:**

There was no statistically signifigant difference in all cause mortality or neurologic outcomes between temperature control at 33°C vs 36°C.

**BEEM Commentary:**

Treating physicians were not blinded to 33°C or 36°C, however the physician assessing neurologic function was.

Patients in this study had extremely early CPR (mean = 1 minute). Can such a population be generalizable to all out of hospital cardiac arrest patients?

**Comments on author’s conclusion compared to BEEM conclusion:**

The strong methologiy of this paper supports the authors' conclusion that hypothermia confers no benefit over strict temperature control.

**The Bottom Line:**

There is no benefit of targeted temperature management to 33°C compared with 36°C for out of hospital cardiac arrest patients of presumed cardiac cause.

**Clinical Application:**

In post cardiac arrest patients, continue with good critical care, including the maintainence of euthermia, however the induction of true hypothermia may be omitted.

**What do I tell my patients?**

Not applicable, except potentially for family members.

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