Case Conference

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The Timing of Hypothermia

- Animal model: < 1 hr → better outcome
- The timing of hypothermia induction is not associated with neurological outcome after discharge
- Compare to normothermia, both have better outcome (2 hrs vs. 8 hrs)

<table>
<thead>
<tr>
<th>Table 1: Multiple System Approach to Post-Cardiac Arrest Care</th>
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<tbody>
<tr>
<td>Description</td>
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<td>Cerebral microcirculation</td>
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<td>Electrocardiogram</td>
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<td>Core temperature</td>
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<td>Blood pressure</td>
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<td>Pulse rate</td>
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<td>Oxygen saturation</td>
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Original article

The influence of rewarming after therapeutic hypothermia on outcome after cardiac arrest

- *Resuscitation*. 2012 Apr 18
- Bouwes A et al
- Amsterdam, The Netherlands
Current consensus is to rewarm at 0.25-0.5°C/h and avoid fever.

Do these correlate with poor outcome?

- Active rewarming
- The rate of rewarming
- Development of fever

Method
- Retrospective cohort study
- January 2006 to January 2009
- Rewarming:
  - Active rewarming: high rate (>0.5°C/h)
  - Normal rate (<0.5°C/h)
- Poor outcome
  - Death
  - Vegetative state
  - Severe disability after 6 months

Result
- 128 included patients, 56% had a poor outcome
- Actively rewarmed patients (38%) had a higher risk for poor outcome, OR 2.14 (1.01-4.57), p<0.05, BUT...
- Adjustment for the confounders age and initial rhythm, OR 1.51 (0.64-3.58), no significance

Conclusion
- Active rewarming and the rewarming rate did not have a higher risk for a poor outcome

Original article

Intra-arrest hypothermia during cardiac arrest: a systematic review

- Crit Care. 2012 Mar 7;16(2):R41
- Scolletta S et al.
- Brussels, Belgium
Introduction

- When to start hypothermia when cardiac arrest?
- As early as possible?

Methods

- Systematic search for intra-arrest therapeutic hypothermia (IATH)
- Outcomes related to the use of IATH
  - Mortality
  - Neurological status
  - Cardiac function
  - ROSC rate

Results

- 23 animal studies and 5 human studies
- IATH improved survival and neurological outcomes when compared to normothermia and/or hypothermia after ROSC
- Improved ROSC rates and with improved cardiac function, including better left ventricular function, and reduced myocardial infarct size

Conclusion

- IATH improves survival and neurological outcome when compared to normothermia and/or conventional hypothermia