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European Resuscitation Council and European Society of Intensive Care Medicine Guidelines for Post-resuscitation Care 2015 Section 5 of the European Resuscitation Council Guidelines for Resuscitation 2015[☆]



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Temperature control:

Page 207/208: Treatment of hyperpyrexia

A period of hyperthermia (hyperpyrexia) is common in the first 48 h after cardiac arrest. [13,173–176] Several studies document an association between post-cardiac arrest pyrexia and poor outcomes. [13,173,175–178] The development of hyperthermia after a period of mild induced hypothermia (**rebound hyperthermia**) is associated with increased mortality and worse neurological outcome. [179–182] There are no randomized controlled trials evaluating the effect of treatment of pyrexia (defined as $\geq 37.6^{\circ}\text{C}$) compared to no temperature control in patients after cardiac arrest and the elevated temperature may only be an effect of a more severely injured brain.

Weak recommendation:

Although the effect of elevated temperature on outcome is not proven, it seems **reasonable** to treat hyperthermia occurring after cardiac arrest with **antipyretics** and to **consider active cooling in unconscious patients**.

Page 208: Targeted temperature management

The term targeted temperature management or temperature control is now preferred over the previous term therapeutic hypothermia.

The Advanced Life Support Task Force of the International Liaison Committee on Resuscitation (**ILCOR**) made several treatment recommendations on targeted temperature management [128] and these are reflected in these ERC guidelines:

Recommendations:

- Maintain a constant, target temperature between **32°C and 36°C** for those patients in whom temperature control is used (**strong recommendation**, moderate-quality evidence).

Whether certain subpopulations of cardiac arrest patients may benefit from lower (32–34°) or higher (36°C) temperatures remains unknown, and further research may help elucidate this.

- TTM is recommended for adults after **OHCA** with an **initial shockable rhythm** who remain unresponsive after ROSC (**strong recommendation**, low-quality evidence).
- TTM is suggested for adults after **OHCA** with an **initial non-shockable rhythm** who remain unresponsive after ROSC (**weak recommendation**, very low-quality evidence)
- TTM is suggested for adults after **IHCA** with **any initial rhythm** who remain unresponsive after ROSC (**weak recommendation**, very low-quality evidence).
- If targeted temperature management is used, it is suggested that the **duration is at least 24 hours** as undertaken in the two largest previous RCTs [31,187] (**weak recommendation**, very low-quality evidence).

It is clear that the optimal target temperature after cardiac arrest is not known and that more high-quality large trials are needed.

Page 209: Prehospital cooling strategies:

- Based on clinical evidence, **prehospital** cooling using a rapid infusion of large volumes of **cold intravenous fluid** immediately after ROSC is **not recommended**.

It may still be reasonable to infuse cold intravenous fluid where patients are well monitored and a lower target temperature (e.g., 33°C) is the goal. **Early cooling strategies**, other than rapid infusion of large volumes of cold intravenous fluid, and **cooling during CRP in the prehospital setting** have not been studied adequately. Whether certain patient populations (e.g., patients for whom transport time to a hospital is longer than average) might benefit from early cooling strategies remains unknown.

Page 209: Re-warming to normothermia

- The optimal rate is not known, but the **consensus** is currently about **0.25–0.5°C of rewarming per hour**. [228]