

Accidental Hypothermia - How to Manage



Managing patients with accidental hypothermia with and without cardiac arrest is covered in a recently published state-of-the-art review, endorsed by the International Commission for Mountain Emergency Medicine. Extracorporeal life support is the “treatment of choice” in patients with unstable circulation or cardiac arrest.

Peter Paal and colleagues based their recommendations on a literature review, and the article is published in the *Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine*.

Their main recommendation is that hypothermic patients with risk factors for imminent cardiac arrest (temperature $<28^{\circ}\text{C}$, ventricular arrhythmia, systolic blood pressure $<90\text{ mmHg}$), and patients who have already arrested, should be transferred directly to an extracorporeal life support (ECLS) centre.

They also recommend that emergency services implement protocols to ensure optimal pre-hospital triage, transport and treatment. Hospitals should have protocols for in-hospital management including criteria for the use of ECLS, and to cover post-resuscitation care.

The review covers pre-hospital care:

- Cooling: implications for drowning and avalanche rescue
- Staging of accidental hypothermia to facilitate triage and pre-hospital treatment
- How to measure temperature,
- Prehospital insulation, rewarming, rescue collapse and afterdrop
- Triage and prognostication of accidental hypothermic patients in cardiac arrest Oxygenation, anaesthesia induction and airway management
- Cardiopulmonary resuscitation
- Dispatching and transport decisions

The authors write:

“Cooling rates may vary widely according to the individual situation. Insulation, hypothermia staging, and triage to the appropriate hospital are key. Hypothermic patients with risk factors for imminent cardiac arrest (temperature $<28^{\circ}\text{C}$, ventricular arrhythmia, systolic blood pressure $<90\text{ mmHg}$), and those who have already arrested, should be transferred directly to an ECLS-centre. Cardiac arrest patients should receive continuous cardiopulmonary resuscitation (CPR) during transfer... Outcome is best if hypothermic cardiac arrest is witnessed, high quality CPR performed continuously until ECLS rewarming is started.”

Part 2 reviews in-hospital management:

- Rewarming
- Interpreting arterial blood gases in severe hypothermia
- Non-ECLS rewarming, Extracorporeal life support.

The authors note that protocols for in-hospital treatment of accidental hypothermia are rare, and they recommend that accidental hypothermia centres and treatment algorithms are developed within departments that perform ECLS.

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