

## Does prehospital cooling help achieve target temperature after OHCA?



Researchers conducted a pragmatic randomised controlled trial (ICEPACS RCT) in a large metropolitan area to compare prehospital cooling by paramedics of patients resuscitated after out-of-hospital cardiac arrest (OHCA), to usual care with no targeted temperature management (TTM) applied until hospital. Results show that prehospital cooling initiated five minutes after resuscitation did not increase rates of achieving a target temperature of 32–34°C within six hours of hospital arrival but was safe and increased application of TTM in hospital.

The trial included 585 patients randomised to receive prehospital cooling using surface ice packs, cold saline infusion and wristband reminders ( $n = 279$ ) or control ( $n = 306$ ). The primary outcome of "successful TTM" – achieving a target temperature of less than 34°C within six hours of ED arrival – was not significantly different comparing groups. However, prehospital cooling resulted in increased application (ever) of in-hospital TTM compared to controls (68% vs. 56%,  $p = 0.003$ ).

"This finding confirms the hypothesis that a prehospital intervention can directly influence the application of evidence-based recommendations by in-hospital clinicians, as suggested by observational research," according to the study published in the journal *Resuscitation*.

Previously, two large trials suggested that cooling during resuscitation or immediately following return of spontaneous circulation (ROSC) may be harmful. In contrast, the ICEPACS trial detected no excess of adverse events when prehospital cooling was delayed until five minutes after successful ROSC.

The authors explain: "We intentionally delayed the initiation of prehospital cooling in our trial to reduce the risk of re-arrest, which occurs most frequently in the minutes immediately following ROSC. Patients randomised to prehospital cooling in our RCT also received less intravenous cold saline during transport than was administered in these other trials, which may have further decreased the potential for prehospital cooling to induce recurrent arrhythmias or pulmonary oedema."

The authors stress that their primary outcome directly measured the effectiveness of prehospital cooling as an implementation strategy, but alternative endpoints that could be considered in future research include improving physiology, limiting disability, alleviating discomfort, and improving patient satisfaction.

The trial has several limitations, including that the study did not achieve the anticipated sample size due to slower than expected enrolment, and may have been underpowered to detect small but clinically important differences in primary or secondary outcomes. Also, not all eligible patients were enrolled by participating paramedics, and this may affect the generalisability of the findings.

Source: [Resuscitation](#)

Image Credit:

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