

Study: Use of therapeutic hypothermia in out-of-hospital cardiac arrest dipped after TTM trial



A U.S. registry study on use of therapeutic hypothermia for out-of-hospital cardiac arrest patients found that use dipped immediately after publication of the [Targeted Temperature Management \(TTM\) trial](#), which provided evidence for more lenient temperature management.

The study, by Steven M. Bradley, MD, MPH, Minneapolis Heart Institute and colleagues, for the Cardiac arrest Registry to Enhance Survival (CARES) Surveillance Group, included 45,935 patients between 1 January 2013 and 31 December 2016.

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Results

Overall use of therapeutic hypothermia during the study period was 46.4%. Use dropped from 52.5% in the last quarter of 2013 to 46% in the first quarter of 2014 after the publication of the TTM trial and remained at or below 46.5% until the end of the study period. In segmented hierarchical logistic regression analysis, the risk-adjusted odds of use of therapeutic hypothermia were 18% lower in the first quarter of 2014 compared with the last quarter of 2013. Overall risk-adjusted patient survival dropped from 36.9% in 2013 to 34.3% in 2016. The researchers note that although decreasing trends in survival were not consistently explained by decreasing use of therapeutic hypothermia these analyses were underpowered owing to a small number of participating hospitals.

As evidence for therapeutic hypothermia is largest for ventricular tachycardia (VT) or ventricular fibrillation (VF), the researchers also analysed trends in the use of therapeutic hypothermia for patients with VT or VF and pulseless electrical activity (PEA) or asystole. In unadjusted analyses OF patients with VT or VF, use of therapeutic hypothermia dropped from 59.9% in the last quarter of 2013 to 53.3% in the first quarter of 2014 and remained below 56.0% UNTIL 2016 Among patients with PEA or asystole, the use of therapeutic hypothermia decreased from 46.1% in the last quarter of 2013 to 42.2% in the first quarter of 2014 and remained below 42.6% until 2016. Risk-adjusted analyses demonstrated similar findings.

The researchers emphasise that this analysis of trends in the use of therapeutic hypothermia should be strictly interpreted as reflecting the experience of hospitals participating in the CARES registry with at least 10 out-of-hospital cardiac arrests over a 4-year period.



Lead author, Steven Bradley, MD, MPH (pictured), told *ICU Management & Practice* in an email that he was not surprised by decreased use of therapeutic hypothermia found in the analysis: "The change in use is consistent with changes seen after publication of negative studies for other treatments. This suggests clinicians are misinterpreting the Targeted Temperature Management trial as a negative study for therapeutic hypothermia."

He added that continued emphasis is needed on the guideline-recommended benefit of therapeutic hypothermia for out-of-hospital cardiac arrest. "Applied correctly, the findings of the Targeted Temperature Management trial should make it easier to achieve that goal. Efforts on implementation are needed to increase the proportion of patients that receive this important therapy."

Source: [JAMA Network Open](#); email
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Published on : Fri, 9 Nov 2018