U.S. Department of Veterans Affairs

Public Access Author manuscript

N Engl J Med. Author manuscript; available in PMC 2021 October 08.

Published in final edited form as:

N Engl J Med. 2015 September 03; 373(10): 979–980. doi:10.1056/NEJMc1508693.

Therapeutic Hypothermia in Children

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Letter to the Editor:

We commend the authors for this challenging multicenter randomized study on the use of therapeutic hypothermia (TH) in comatose children after cardiac arrest.¹ Indeed, 1355 patients were screened to eventually lead to 260 evaluations of the primary outcome, 1-year survival with a VABS-II score of 70.

Conclusions from this study, however, are hampered by its limited power. It was designed to detect an *absolute* survival difference of 15–20% assuming a survival rate of 15–35% in normothermic patients with a power of 85%; under these overly optimistic and unfounded conditions despite pertinent literature,^{2–4} only 276 patients were calculated to be needed. An *absolute* difference of 8%, however, still corresponding to >50% relative increase in neurologically acceptable survival, and a 0.14 p-value strongly suggest that the study was severely underpowered (42%) to rightfully reject the null-hypothesis under these conditions.

Therefore, it would be premature to conclude that withholding TH from pediatric patients does not make a difference in outcome. A >50% increased survival, though not significant due to suboptimal study design, points in a very different direction.

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Received from: TVHS VA Medical Center and Departments of Anesthesiology and Pharmacology, Vanderbilt University, Nashville, TN; Department of Emergency Medicine, Medical College of Wisconsin, Milwaukee, WI; and Department of Medicine - Cardiovascular Division, University of Minnesota, Minneapolis, MN.

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