

## Mild Hypothermia Versus Normothermia in Patients Undergoing Cardiac Surgery: A Propensity Matched Analysis

**Authors :** Ramanish Ravishankar, Azar Hussain, Mahmoud Loubani, Mubarak Chaudhry

**Abstract :** Background and Aims: Currently, there are no strict guidelines in cardiopulmonary bypass temperature management in cardiac surgery not involving the aortic arch. This study aims to compare patient outcomes undergoing mild hypothermia and normothermia. The aim of this study was to compare patient outcomes between mild hypothermia and normothermia undergoing on-pump cardiac surgery not involving the aortic arch. Methods: This was a retrospective cohort study from January 2015 until May 2023. Patients who underwent cardiac surgery with cardiopulmonary bypass temperatures  $\geq 32^{\circ}\text{C}$  were included and stratified into mild hypothermia ( $32^{\circ}\text{C} - 35^{\circ}\text{C}$ ) and normothermia ( $>35^{\circ}\text{C}$ ) cohorts. Propensity matching was applied through the nearest neighbour method (1:1) using the risk factors detailed in the EuroScore using RStudio. The primary outcome was mortality. Secondary outcomes included post-op stay, intensive care unit readmission, re-admission, stroke, and renal complications. Patients who had major aortic surgery and off-pump operations were excluded. Results: Each cohort had 1675 patients. There was a significant increase in overall mortality with the mild hypothermia cohort (3.59% vs. 2.32%;  $p=0.04912$ ). There was also a greater stroke incidence (2.09% vs. 1.13%;  $p=0.0396$ ) and transient ischaemic attack (TIA) risk (3.1% vs. 1.49%;  $p=0.0027$ ). There was no significant difference in renal complications (9.13% vs. 7.88%;  $p=0.2155$ ). Conclusions: Patient's who underwent mild hypothermia during cardiopulmonary bypass have a significantly greater mortality, stroke, and transient ischaemic attack incidence. Mild hypothermia does not appear to provide any benefit over normothermia and does not appear to provide any neuroprotective benefits. This shows different results to that of other major studies; further trials and studies need to be conducted to reach a consensus.

**Keywords :** cardiac surgery, therapeutic hypothermia, neuroprotection, cardiopulmonary bypass

**Conference Title :** ICCCS 2023 : International Conference on Cardiology and Cardiac Surgery

**Conference Location :** Tokyo, Japan

**Conference Dates :** November 13-14, 2023