

# INDUCED HYPOTHERMIA IN COMATOSE CHILDREN SURVIVING CARDIORESPIRATORY ARREST

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## INTRODUCTION

Despite compelling evidence showing that therapeutic hypothermia (TH) improves outcome in neonatal hypoxic-ischemic encephalopathy and in adults after ventricular fibrillation, there is lacking evidence in pediatric patients with return of spontaneous circulation (ROSC) after cardiac arrest (CA).

## OBJECTIVE

This prospective study aims to assess efficacy and safety of TH after pediatric CA.



## METHODS

This study was conducted in post-ROSC patients admitted to our PICU from January 2012 to April 2013. According to our protocol, children who had been resuscitated after cardiac arrest underwent TH using a servo-controlled cooling device (targeted temperature, 32 °C to 34 °C). Target temperature was gained quickly and maintained with minor fluctuations (0,2–0,5 °C/h) for 24-36h.

## RESULTS

Eighteen patients were included, mean age was 14 months (IQR 1,6-177). RCP duration was 34 ± 17 minutes and the gap between RCP and the start of hypothermia was 3,7 ± 1,6 hours. Length of mechanical ventilation was 96 hours (IQR 72-276), PICU stay was 10 days (IQR 3,5-20). VIS score was 11,3 ± 8.8. Five patients survived with Glasgow Outcome Scale 2,4 ± 1,4. A significant inverse correlation was found between survival and VIS<sub>24</sub> (r -0.74, p 0.024) and PRISM-III<sub>24</sub> (r -0.72, p 0.023). At 3 months follow-up, Pediatric Cerebral Performance Category score was ≤2 in 4 patients.

## CONCLUSIONS

Due to lacking evidence and protocols, TH after pediatric CA is not widely used. This study shows a possible benefit of TH in children with ROSC, but further investigations and controlled studies are needed in order to confirm these findings.

Vasoactive-Inotropic Score at 24 hours (VIS<sub>24</sub>) and PRISM-III<sub>24</sub> in survivors vs non-survivors

