# INDUCED HYPOTHERMIA IN COMATOSE CHILDREN SURVIVING CARDIORESPIRATORY ARREST

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### INTRODUCTION

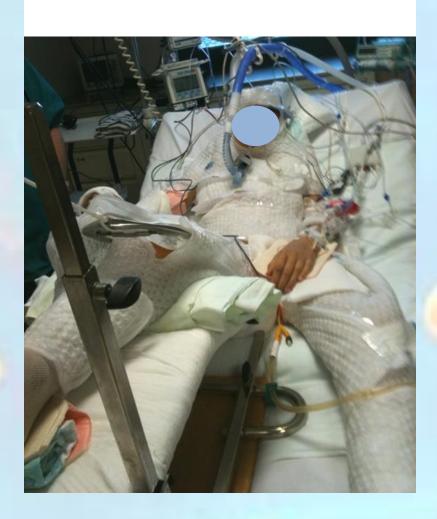
Despite compelling evidence showing that therapeutic hypothermia (TH) improves outcome in neonatal hypoxic-ischemic encephalopathy and in adults after ventricular fibrillation, there is lacking evidence in pediatric patients with return of spontaneous circulation (ROSC) after cardiac arrest (CA).

#### **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  $34 \pm 17$  minutes and the gap between RCP and the start of hypothermia was  $3.7 \pm 1.6$  hours. Length of mechanical ventilation was 96 hours (IQR 72-276), PICU stay was 10 days (IQR 3,5-20). VIS score was  $11.3 \pm 8.8$ . Five patients survived with Glasgow Outcome Scale  $2.4 \pm 1.4$ . 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  $\leq 2$  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 $_{24}$ ) and PRISM-III $_{24}$  in survivors vs non-survivors

