Target Temperature Management 33°C versus 36°C after Out-of-hospital Cardiac Arrest, a Randomized, Parallel Group, Assessor Blinded Clinical Trial

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Introduction and objective: Unconscious patients with return of spontaneous circulation (ROSC) after out-of-hospital cardiac arrest (OHCA) have a high risk of death and poor neurological function. Temperature regulation is recommended in guidelines to improve outcome, but the optimal target temperature management strategy is not known. Our objective was to test two essentially different temperature levels, both avoiding hyperthermia, on the outcomes of survival and poor neurological function.

Methods: In a multi-center, parallel-group, assessor blinded trial, conducted in 36 intensive care units, we centrally randomized 950 unconscious adults with ROSC after OHCA of presumed cardiac cause, to a target temperature management of 33°C or 36°C. The primary outcome is survival until end of trial (180 days after last randomization) adjusted for site as the stratification variable. The secondary outcomes are poor neurological function or death at 180 days and adverse events (bleeding, infection, arrhythmia, electrolyte- and metabolic disturbances) within the first seven days. Secondary multi-variate analyses will be performed adjusting for age, gender, initial rhythm, time to ROSC and presence of shock at admission.

Results: Nine hundred and fifty patients were randomized between November 2010 and January 2013. The cohort baseline characteristics are: median age 65 years (inter quartile range 56-73), 81 % male gender, and 78 % ventricular fibrillation or non-perfusing tachycardia. The last follow up will be performed in July 2013. Data on demographics, temperature and
critical care management, primary outcome (survival) and secondary outcomes (neurological function and adverse events) will be presented.

**Conclusion:** The target temperature management 33°C versus 36°C after out-of-hospital cardiac arrest-trial is the largest trial to date investigating target temperature management after cardiac arrest. Results will be available end of August. (NCT01020916)