NASAL COOLING WITH A NEW COOLING DEVICE IN PATIENTS AFTER CARDIAC ARREST AND SUCCESSFUL RESUSCITATION

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Purpose of the study

Rapid induction of therapeutic hypothermia might further improve neurologic outcome after cardiac arrest. The preliminary safety and effectiveness of the RhinoChill device (BeneChill, Inc, San Diego, CA) was assessed in survivors of cardiac arrest.

Materials and methods

Seven patients after successful resuscitation from cardiac arrest were included in a prospective observational case series at an emergency department of a tertiary care university hospital. Cooling was initiated with the RhinoChill device for 60 min. It uses an evaporative coolant, that is vaporized into both nostrils via a tubing set with oxygen to cool the nasopharynx and achieve local and systemic hypothermia. After 60 min an additional cooling method of free choice was added to achieve target temperature of 33.0 °C and maintain it for 24 hours. Results are presented as median and the range from the first to the third quartile.

Results

The age of the patients was 68 (66; 74) years, 6 patients were male, the body mass index was 26.1 (24.1; 28.0) kg/m2, the time from cardiac arrest to ROSC was 23 (16; 29) min. The esophageal temperature before start of cooling was 35.4 (34.7; 36.0)°C. After 60 min the esophageal temperature was reduced to 34.1 (33.4; 34.9)°C, the cooling rate was 1.6 (1; 1.7)°C /h. Favorable neurologic outcome (CPC 1 or 2) was achieved in 2 patients (29%). No adverse event was related to the cooling device.

Conclusions

The RhinoChill device effectively reduced esophageal temperature 1.6 C/h (median) after cardiac arrest without device-related adverse events.