Hypothermia treatment after cardiac arrest

Northern Hypothermia Registry

Background: Two randomized studies have shown a neuroprotective effect of therapeutic hypothermia after cardiac arrest in man (New Engl J Med; 2002,346; 549-556, 557-563). Also , see the ILCOR advisory statement (Circulation, 2003; 108: 118-121, Resuscitation, 57 (2003) 231-235).
Main objective: To document the clinical use of therapeutic hypothermia in order to evaluate treatment safety, effi cacy and the use of ICU resources.
Patients: Cardiac arrest victims with restoration of spontaneous circulation (ROSC) and persistent unconsciousness. ROSC is defi ned as systolic BP >80 mm Hg for >5 min.
Treatment proposal: see protocol

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Hospital code	
Patient code	
Date of arrest (yyyy-mm-dd)	
Age	
Sex	
Weight (kg):	
Length (cm):	
Smoker:	

When Cardiac arrest is unwitnessed, please specify times as from Emergency call to event (CPR, first defibrillation, return of spontaneous circulation etc)

1.1 Patient's major prearrest diseases:

- ☐ *none*
- ☐ *coronary disease*
- ☐ *heart failure*

☐ *hypertensive disease*

☐ *insulin dependent diabetes mellitus* ☐ *non-insulin dependent diabetes mellitus*

☐ *pulmonary disease*

☐ *renal impairment*

☐ *neurological disease*

☐ *hepatic disease*

☐ *malignancy*

☐ *alcohol/drug abuse*

2.1 Cerebral Performance Category (CPC) prior to cardiac arrest:

Circulatory arrest data:

3.1 Cardiac arrest – site:

4.1 Witnessed arrest?

4.2 By-stander CPR?

5.1 Initial rhythm at arrival of medical personnel?

6.1 Time from emergency call until ambulance/emergency team is on scene *(not known=999)*?

min

6.2 Estimated time from arrest until basic CPR by medical personnel *(not known=999)*

min

6.3 Use of active compression-decompression-device (ACD)?

7.1 Defi brillation performed?

7.2 Estimated time from arrest until first defibrillation *(min, not known=999)*

8.1 Estimated time from arrest until ROSC *(min, not known=999)*?

9.1 Suspected cause of cardiac arrest?

Hypothermia treatment data:

10.1 Glasgow coma score at the initiation of hypothermia treatment?

10.2 Reaction Level Scale (RLS) at the initiation of hypothermia treatment?

11.1 Initial temperature, before cooling (°C) (*not known=999*)?

11.2 Estimated time from arrest until initiation of hypothermia treatment? (min)

11.3 Target temperature (±1°)? (°C)

11.4 Core temp - measurement site?

12.1 Mode of initial cooling

- ☐ *ice-packs*
- ☐ *cold fluid infusions*
- ☐ *air cooling*
- ☐ *circulating water blankets*
- ☐ *intravascular device*
- ☐ *other*

13.1 Time from arrest until core temperature ≤34°C *(min, not known=999)*?

13.2 For how long was target temperature maintained?

13.3 Time from target temp to normothermia ≥ C (*min, not known=999)*

14.1 Mode of temp. control?

- ☐ *ice-packs*
- ☐ *air cooling*
- ☐ *circulating water blankets*
- ☐ *intravascular device*
- ☐ *other*

Outcome data:

15.1 Did the patient survive until ICU discharge?

16.1 Best CPC during ICU stay?

16.2 Best GCS during the ICU stay?

16.3 Best RLS during the ICU stay?

16.4 Did the patient obey commands during the ICU stay?

16.5 Length of ICU stay? (hours)

16.6 Patient discharged to:

17.1 If patient did not survive until ICU discharge – time from arrest until death? (hours)

17.2 Was an autopsy performed?

If (1) patient was discharged from ICU and (2) hospital-outcome data is available at the time of registration please answer questions 18.1-4

18.1 CPC at hospital discharge?

18.2 Best CPC during hospital stay? (ICU and ward included)

18.3 How many days from arrest to discharge? (days)

18.4 If CPC 5 (dead) during hospital stay, please specify probable cause of death.

Adverse events during ICU treatment:

19.1 Was there any major bleeding during hypothermia treatment?

19.2 Serious infection?

- ☐ *no*
- ☐ *yes, pneumonia*
- ☐ *yes, sepsis*
- ☐ *yes, other*

19.3 Arrhythmias requiring intervention?

- ☐ *no*
- ☐ *yes; bradycardia (<40)*
- ☐ *yes; tachycardia (>130)*
- ☐ *yes; atrial fibrillation*
- ☐ *yes; ventricular tachycardia*
- ☐ *yes; ventricular fibrillation*
- ☐ *yes; other*

19.4 Other adverse events?

- ☐ *no*
- ☐ *yes; hypoglycemia (<3mmol/L)*
- ☐ *yes; sustained hyperglycemia (>8 mmol/L, >4h)*
- ☐ *yes: low s-potassium (<3.0mmol/L)*
- ☐ *yes; low s-magnasium (<0.7 mmol/L)*
- ☐ *yes; low s-phosphate (<0.7 mmol/L)*
- ☐ *Body temperature >38° C*

Investigations:

20.1 Was a CT scan of the brain performed? ☐

21.1 Was an EEG performed? ☐

22.1 Was a somatosensory evoked potential (SSEP) performed? ☐

23.1 Was an MRI of the brain performed? ☐

General treatment data:

24.1 Did the patient receive antibiotics during the ICU-stay?

- ☐ *no*
- ☐ *yes; as profylaxis*
- ☐ *yes; as theraphy*
- ☐ *yes; as SDD*

25.1 What sedatives were used during treatment?

- ☐ *midazolam*
- ☐ *opiate*
- ☐ *propofol*
- ☐ *other*
- ☐ *none*

25.2 Were muscle relaxants given? ☐

26.1 Did the patient receive anticonvulsants other than protocol sedation?

26.2 Clinical signs of seizures?

27.1 Renal replacement therapy?

28.1 Did the patient receive infusion of inotropes and/or vasopressors?

29.1 Was coranary angiography performed before or during the ICU stay?

29.2 Cardiac intervention performed before/or during ICU stay?

- ☐ *no*
- ☐ *yes, thrombolysis*
- ☐ *yes; percutaneous coronary intervention*
- ☐ *yes;open heart surgery*
- ☐ *Yes, pacemaker*

29.3 Was the patient in cardiogenic shock at the initiation of cardiac intervention

29.4 Was an intraaortic balloon pump used?

29.5 Did the patient develop a myocardial infarction

Please don't forget to add and register data regarding survival and neurological follow-up on the Follow-Up-Form.
Thank You,
The Northern Hypothermia Network

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