

14:45-15:05 Prognosis and prognostication after cardiac arrest and hypothermia: The PROPAC II study

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INTRODUCTION. Guidelines for determination of prognosis in patient with postanoxic coma after cardiac arrest are all based on data collected in patients who were not treated with hypothermia [1]. In most hospitals however, induced hypothermia has become standard care. Therefore data regarding the reliability of diagnostic tools used to determine prognosis have to be collected in patients treated with hypothermia.

OBJECTIVES. To establish the validity of diagnostic methods to predict poor outcome in patients treated with hypothermia after CPR.

METHODS. This multicenter prospective cohort study included adult comatose patients admitted after CPR and treated with induced mild hypothermia (32–34°C). Data collected: Age, gender, presenting rhythm, time to return of spontaneous circulation, characteristics about hypothermia treatment, serum neuron specific enolase levels (NSE) on admission, 12 h after reaching target temperature, 36 and 48 h after CPR, results of SSEP recorded during hypothermia, and SSEP recorded if patients remained in coma after rewarming and wearing off of sedative drugs. Neurological examination (GCS and brain stem reflexes) was performed 48 and 72 h after CPR. Neurological outcome was assessed 30 days and 6 months after admission with the Glasgow Outcome Scale. Poor outcome was defined as death, vegetative state or severe disability 6 months after CPR. For SSEP, GCS-M score (M score dichotomy M1-2 vs. M3-6), pupillary reaction, corneal reflex and NSE levels[33lg/L, false positive rates (FPR, 1-specificity (2)) for prediction of poor outcome was calculated with 95% CI.

RESULTS. 391 patients were included in 10 collaborating hospitals between September 2007 and October 2009. Patient characteristics: median age 65, 73% male, median time to ROSC 15 min., initial rhythm VF/VT in 77%.

Outcome: 205 (53%) patients died, of whom 149 died in the first week after admission. No patient remained in a vegetative state, 9 patients were severely disabled, 49 moderately disabled and 124 made a good recovery. Predicting poor outcome: (1) SSEP (normothermia) FPR 0.01, 95% CI 0–0.05, (2) GCS-M score (72 h) FPR 0.12, 95% CI 0.07–0.18, (3) pupillary reaction (72 h) FPR 0.01, 95% CI 0–0.07, (4) Corneal reflex (72 h) FPR 0.04 95% CI 0.01–0.13 and (5) NSE (48 h) FPR 0.07 95% CI 0.04–0.12

CONCLUSIONS. This study shows that absent pupillary reaction 72 h after CPR and absent cortical response in SSEP after rewarming reliably predict poor outcome at 6 months in patients who remain comatose after CPR and treatment with hypothermia. These tests can be used shortly after rewarming and wearing off of sedative drugs. The results are in accordance with the recently published results of Rosetti et al. found in a much smaller group of patients from one centre [2]. Further results of analyses will be presented on the conference.

REFERENCE(S). 1. Wijdicks, *Neurology* (2006). 2. Rosetti, *Ann Neurol* (2010).

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