

A Multimodal Approach for Prognostication of Post-Anoxic Brain Injury: Beyond the Guidelines.

Lili MATEUS SANABRIA, Lorenzo PELUSO, Bedrana MORO SALIHOVIC, Jacques CRETEUR, Jean-Louis VINCENT, Nicolas GASPARD, Fabio Silvio TACCONE
Department of Intensive Care – Erasme Hospital – Brussels, Belgium
Department of Neurology – Erasme Hospital – Brussels, Belgium

Introduction: To adequately predict poor outcome in comatose survivors after cardiac arrest (CA), international Guidelines recommended the use of absent or extensor motor response at \geq 72 hours from arrest in combination with either bilateral absence of pupillary light reflexes (PLR) or N20 waves of somatosensory evoked potentials (SSEPs). A multimodal monitoring (MMM) approach including other prognostic tools may be useful.

Methods: Retrospective analysis of adult (> 18 years) CA patients who underwent MMM from January 2016 to December 2017. Together with clinical variables and SSEPs, we collected the presence of highly malignant EEG patterns (i.e. suppressed background or burst suppression), the absence of neurological pupillary index on the automated pupillometry (NPI=0) at 24 and 48-72 hours and the highest neuron-specific enolase (NSE). 3-month unfavorable outcome (UO) was defined for a Cerebral Performance Category ≥ 3 .

Results: A total of 84 patients were included; including 59 (70%) with UO. At 72 hours, UO was observed in 12/35 patients with absent PLR, in 7/7 with absent N20 and 10/10 with combined absent PLR and N20; 29/59 (50%) patients with UO were identified using this approach. Using the MMM approach, at 24 hours after CA UO was identified in 16/16 patients with NPI=0 and additional 16/17 patients with highly malignant EEG tracings. At 48-72 hours, UO was associated with absent N20 in 2/2 patients and with NSE > 50 mcg/L in 9/9 patients. Unreactive EEG both at 24 and 48-72 hours was associated with UO in other 5/16 patients; a total of 48/59 (81%) patients with UO were identified using this MMM approach.

Conclusions: These data suggest that a wider combination of prognostic tools may increase the accuracy of a MMM to identify patients with unfavorable after cardiac arrest.

Click here for the

abstract: https://d3w3ioujxcalzn.cloudfront.net/item_files/f1a2/attachments/568984/original/p64_-_sanabria.pdf