

## A Multimodal Approach for Prognostication of Post Anoxic Brain Injury

*Lorenzo Peloso, Thomas Boidsenghien, Lili Mateus Sanabria, Bedrana Moro Salihovic, Jacques Creteur, Jean-Louis Vincent, Nicolas Gaspard, Fabio Silvio Taccone*

Clinique Universitaire de Bruxelles Hopital Erasme, Brussels, Belgium

### Introduction

International Guideline recommend using bilaterally absence of pupillary light reflex (PLR) and/or bilaterally absence of the cortical response (N20) to short-latency somatosensory evoked potentials (SSEPs) at 72 hours after return to spontaneous circulation to predict unfavorable outcome in comatose patients after cardiac arrest. The aim of this study was to compare this algorithm with a multimodal approach including other prognostic tools.

### Methods

Retrospective study of adult (>18 years) cardiac arrest patients admitted from January 2016 to March 2019 and who underwent multimodal monitoring. We collected demographic characteristics and cardiac arrest data, together with SSEPs, the presence of burst-suppression on early EEG, a neurological pupillary index on the automated pupillometry

### Results

We included 143 patients; 104 (73%) of those had UO. Using the approach of Guidelines, unfavorable outcome at day 3 was observed in 7/14 patients with absent PLR, in 16/16 with absent N20 and 14/14 with combined absent pupillary light reflex and N20; 51/104 (49%) patients with UO were identified. Using the multimodal approach, UO was identified in 30/30 patients with NPI

### Conclusions

This study suggests a multimodal approach, including NPI and BS on EEG, SSEPs and NSE, has a higher predictive value for UO than recommended predictive tools.