mean MD parameters and LP ratio measured in venous and arterial blood.
RESULTS. The median time from OHCA to MD analysis was 369 min (IQR 255-444) and patients underwent a median of 76 h (IQR 65-82) of monitoring. The LP ratio of cerebral venous blood increased (LP ratio > 25) after OHCA indicating compromised cerebral oxidative metabolism during the first 20 hours. The difference between time-weighted mean of lactate, pyruvate and glycerol (in intervals of 12 hours) of the jugular venous and the arterial blood was significant during post-resuscitation care ($p < 0.02$) when using mixed effects models. In patients with unfavorable outcome (87 %), cerebral venous lactate remained high with mean and peak venous lactate level > 2.2 and 5.5, respectively.
CONCLUSION. Isolated neurochemical changes indicating brain injury were found after OHCA and consecutive resuscitation. Jugular bulb MD may provide a reliable global estimate of cerebral metabolic state and can be implemented as a new diagnostic tool for ICU patients after OHCA, with implications for early prognosis and treatment.

000927

The association of coagulofibrinolyticmarkers with brain death after out-of-hospital cardiac arrest

S. Tahara[1], K. Maekawa[1], M. Hayakawa[1], M. Takahashi[1], K. Moriki[1], M. Hayamizu[1], Y. TAKAHASHI[1], T. Tsuchida[1], Y. Sadamoto[1], Y. Homma[1], T. Oyasu[1], A. Mizugaki[1], T. Saito[1], T. Yoshida[1], K. Katabami[1], T. Wada[1]
[1]Department of emergency medicine, Hokkaido University Hospital, Sapporo, Japan
Correspondence: S. Tahara
Intensive Care Medicine Experimental 2019, **7(Suppl 3):**000927

INTRODUCTION. Despite recent improvements, some patients after out-of-hospital cardiac arrest (OHCA) suffer total loss of brain function, i.e. brain death. Coagulofibrinolyticmarkers and disseminated intravascular coagulation (DIC) score were known to be associated with neurological outcome in patients after OHCA, but the associations between these variables and brain death were not examined.
OBJECTIVES. To evaluate the associations of coagulofibrinolyticmarkers and DIC score with brain death after OHCA.
METHODS. We performed a retrospective analysis using data from the regional UtsteinRegistry and medical records between 2006 and 2012. We enrolled patients who experienced OHCA with successful return of spontaneous circulation and were admitted to Hokkaido University Hospital. Outcome measure was brain death during hospitalization. Logistic regression model was used to evaluate the associations of coagulofibrinolyticmarkers including platelet count, prothrombin time, plasma levels of fibrinogen, fibrin/fibrinogen degradation products, and calculated DIC score on admission with brain death. Classification and Regression Tree (CART) analysis was used to identify specific thresholds of significant variables.
RESULTS. The overall rate of DIC (defined by DIC score >= 5) and brain death were 13.0% (n = 41/315) and 9.5% (n = 30/315), respectively. Compared with non-brain death group, brain death group gained significant lower level of fibrinogen on admission (1.97 vs. 2.45 g/L, p=0.005), but there were no differences about other variables. CART analysis identified fibrinogen level of 2.26 g/L as an optimal threshold. In multivariable logistic regression analysis, fibrinogen level =< 2.26 g/L was associated with increased risk of brain death (adjusted odds ratio 2.87, 95%CI 1.16-7.08, p=0.02).
CONCLUSION. Decreased fibrinogen level at admission was an independent prognostic factor for brain death after OHCA.

REFERENCE

1. Ono Y, Hayakawa M, Maekawa K, Kodate A, Sadamoto Y, Tominaga N, Murakami H, Yoshida T, Katabami K, Wada T, Sageshima H, Sawamura A, Gando S. Fibrin/fibrinogen degradation products (FDP) at hospital admission predict neurological outcomes in out-of-hospital cardiac arrest patients. Resuscitation. 2017 Feb;111:62-67.

000938

Automated pupillometry to predict outcome in cardiac arrest patients undergoing ECMO

M. Menozzi[1], M. Oddo[2], C. Sandroni[3], G. Citerio[4], JF. Payen[5], J. Creteur[1], FS. Taccone[1]
[1]Department of Intensive Care, Erasme Hospital, Université Libre de Bruxelles, Brussels, Belgium; [2]Department of intensive care medicine, Centre Hospitalier Universitaire Vaudois (CHUV), University of Lausanne, Lausanne, Switzerland; [3]Department of anesthesiology and intensive care, Catholic University School of Medicine, Rome, Italy; [4]School of medicine and surgery, University of Milano-Bicocca, Milan, Italy; [5]Department of anesthesia and critical care, Grenoble Alpes University Hospital, Grenoble, France
Correspondence: M. Menozzi
Intensive Care Medicine Experimental 2019, **7(Suppl 3):**000938

INTRODUCTION. Hypoxic-ischemic brain injury (HIBI) is the main cause of death or disability in patients resuscitated from cardiac arrest (CA). Extracorporeal membrane oxygenation (ECMO) is used to treat refractory CA or post-CA shock. However, the potential benefit of this resource-intensive treatment should be balanced against the risk of futility. Automated pupillometry (AP) recently shown to accurately predict HIBI outcome within 24h from CA and may therefore be useful in this setting.
OBJECTIVES. To assess the accuracy of early AP for outcome prediction in CA patients undergoing ECMO.
METHODS.*Post hoc* analysis of an international multicenter prognostication study. The primary study endpoint was the accuracy of a neurological pupil index (NPI) ≤ 2 to predict 3-month poor neurological outcome defined as severe disability, unresponsive wakefulness or death (Cerebral Performance Category [CPC] 3-5).
RESULTS. On a total of 456 included patients, 66 (14%) were treated with ECMO during resuscitation or immediately after the return of spontaneous circulation. Unfavorable outcome was observed in 43 (65%) patients. On admission, 15 (23%) patients had NPI of ≤ 2; 13/15 had CPC 3-5. The two patients with favorable outcome had a continuous EEG background and recovered a normal NPI (> 3.5) within 24 hours. Sensitivity, specificity, and positive predictive value of NPI ≤ 2 on admission for unfavorable outcome was 91%, 30%, and 87%, respectively. On day 1 and 3, NPI ≤ 2 was observed in 11/66 (17%) and 4/42 (10%), respectively; all of them had unfavorable outcome.
CONCLUSION. NPI measured with AP in CA patients undergoing ECMO immediately after hospital admission was a sensitive but not specific predictor of poor neurological outcome. Altered pupillary response should not be used as a tool for deciding on ECMO treatment in this phase.

001092

Early lactate and glucose kinetics after return to spontaneous circulation after out-of-hospital cardiac arrest

P. Freire Jorge[1], R. Boer,[1], KC. Harms,[2], BWJ. Bens[2], M. Nijsten[1]
[1]Department of critical care, University Medical Center Groningen, Groningen, Netherlands; [2]Department of emergency medicine, University Medical Center Groningen, Groningen, Netherlands
Correspondence: P. Freire Jorge
Intensive Care Medicine Experimental 2019, **7(Suppl 3):**001092

INTRODUCTION. Hyperlactatemia(1) and hyperglycemia(2) are frequently observed as part of the stress reaction during critical illness. Shorter times to normalization or higher rates of decrease of lactate and glucose have been associated with better outcomes.(3,4) After return to spontaneous circulation (ROSC) after out-of-hospital cardiac arrest (OHCA), blood gas analyses usually demonstrate a marked hyperlactatemia and hyperglycemia. We hypothesize that after ROSC recovery from hyperlactatemia and hyperglycemia can be faster than described for several other critical conditions.
OBJECTIVES. To determine the early kinetics of lactate and glucose in the first 3 hours after ROSC after OHCA in patients presenting with marked hyperlactatemia.