To determine the relationship between acid–base findings, such as pH, pCO2, and serum lactate levels, obtained immediately after starting cardiopulmonary resuscitation and the return of spontaneous circulation (ROSC)" Kim et al (2016).

Abstract:

To determine the relationship between acid–base findings, such as pH, pCO2, and serum lactate levels, obtained immediately after starting cardiopulmonary resuscitation and the return of spontaneous circulation (ROSC).

A prospective observational study of adult, nontraumatic out-of-hospital cardiac arrest (OHCA) patients was conducted at an urban academic teaching institution between April 1, 2013 and March 31, 2015. Arterial blood sample for acid–base data was taken from all OHCA patients on arrival to the emergency department. Of 224 OHCA patients, 88 patients with unavailable blood samples or delayed blood sampling or ROSC within 4 minutes were excluded, leaving 136 patients for analysis.

The pH in the ROSC group was significantly higher than in the non-ROSC group (6.96 vs. 6.85; P = 0.009). pCO2 and lactate levels in the ROSC group were significantly lower than those in the non-ROSC group (74.0 vs. 89.5 mmHg, P < 0.009; 11.6 vs. 13.6 mmol/L, P = 0.044, respectively). In a multivariate regression analysis, pCO2 was the only independent biochemical predictor for sustained ROSC (OR 0.979; 95% CI 0.960–0.997; P = 0.025) and pCO2 of

pCO2 levels obtained during cardiopulmonary resuscitation on ER arrival was associated with ROSC in OHCA patients. It might be a potentially marker for reflecting the status of the ischemic insult. These preliminary results need to be confirmed in a larger population.

Full Text

Reference:

Kim, Y-J., Lee, Y.J., Ryoo, S.M., Sohn, C.H., Ahn, S., Seo, D.-W., Lim, K.S. and Kim, W.Y. (2016) Role of blood gas analysis during cardiopulmonary resuscitation in out-of-hospital cardiac arrest patients. Medicine. 95(25):e3960, June 2016.

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