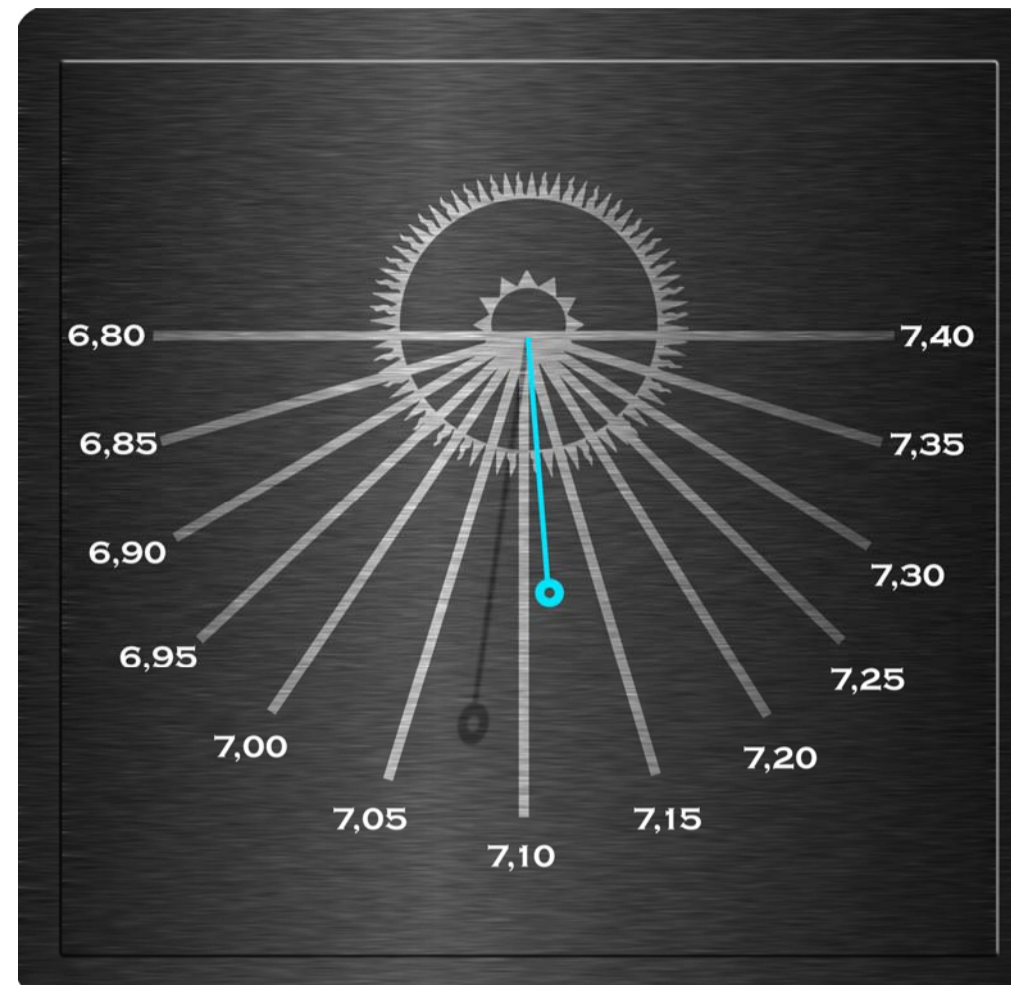


## Looking a "metabolic watch". The analytical parameters found at the beginning of the resuscitation are predictors of the neurological prognostic in the prehospital cardiac arrest.

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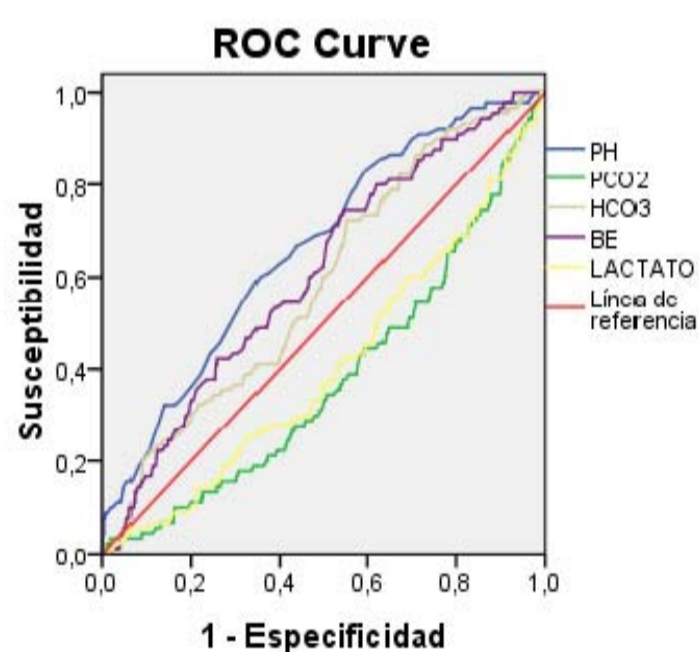
**Objective.** We want to look for new parameters, predictors of good neurological outcome, that allow us to make decisions in the resuscitation scene. When to start to reanimate?, and when not? And when we must finish? The arrest time is the best parameter in this regard, but rarely is reliable. We seek other clock, a **METABOLIC CLOCK** that can give us a better information about that downtime and the patient's condition prior to the start of resuscitation.



**Methodology.** Analytical observation study. Population: cohort of patients with cardiac arrest, attended by an EMS. Years: 2012-2014. Epidemiological variables (age, sex) Explanatory variables: **pH, PCO<sub>2</sub>, EB, lactate** and **bicarbonate** (previous analytical values at the beginning of resuscitation) Result: Neurological recovery, CPC I-II. Hypothesis testing: ANOVA. To determine the cut-off associated with the ultimate goal, ROC curves were drawn. To associate the independent variables a multivariate analysis was performed using a binary logistic regression model. Odds ratio (OR) and confidence intervals  $p < 0.05$  were estimated.

**Results.** 742 patients, median age - 65 years (IQR 52-78), 79% men. 35.7% have shockable rhythm Overall survival without neurological impairment (CPC I-II) – 19,3%

**ROC Test.** pH, lactate, BE and PCO<sub>2</sub> they show significant sensitivity and specificity in ROC analysis. Bicarbonate does not show statistical association



Ph -- 0,646 (IC 95% 0,595-0,697)  $p < 0.0001$   
 PCO<sub>2</sub> -- 0,366 (IC 95% 0,314-,0417)  $p < 0.0001$   
 BE -- 0,570 (IC 95% 0,518 -0,622)  $p = 0.012$   
 LACTATE -- 0,431 (IC 95% 0,376 -0,487)  $p = 0.014$

### Cutoff values with higher sensitivity and greater specificity.

pH=7.07, PCO<sub>2</sub>=54.65, BE=-10.7, LACTATE=4.3.

### Ranges of these parameters where is concentrated the survival maximum. (CPC I-II).

pH (7,04 – 7,33), PCO<sub>2</sub> (47 – 72), EB (-10 – 0) Lactate (4,0 – 8,29)

### Binary logistic regression from these predictors.

They remain as independent variables associated with the recovery "ad integrum".

**Ph -- OR: 2.16** (IC 95% 1.21 -3.8)  $p = 0.008$

**PCO<sub>2</sub> – OR: 1.72** (IC 95% 1.13 -2.6)  $p = 0.012$

**Conclusions.** We are closer to finding a metabolic clock for the CPR. And we have already two metabolic values that they can help us, with some warranty, for taking that decision:

**PH**  
**PCO<sub>2</sub>**

