Higher post-resuscitation hemoglobin, lower pO_2 and lower lactate are associated with survival after cardiac arrest

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PURPOSE OF THE STUDY: To determine the differences between survivors and non-survivors after cardiac arrest in post-resuscitation hemoglobin, pO_2 and lactate.

MATERIALS AND METHODS: We retrospectively included adult patients with non-traumatic out-of-hospital or in-hospital cardiac arrest admitted in 2015 and 2016. We analysed the lowest hemoglobin, the highest pO_2 and the highest lactate in the first 24 hours after admission in survivors and non-survivors to hospital discharge.

RESULTS: We included 153 patients, 109 (71.2%) were males, mean age was 63.8 ± 13.1 years, and 62 (40.5%) survived to hospital discharge. There were no differences between survivors and non-survivors in age (70 ± 12 vs. 66 ± 13 years, $p = 0.06$) and gender (70.9% vs. 71.4%, $p = 1.00$). The lowest hemoglobin was significantly higher in survivors (133 ± 21 vs. 113 ± 26 g/l, $p < 0.0001$), while the highest pO_2 and lactate were significantly higher in non-survivors (16.2 ± 6.4 vs. 19 ± 9.7 kPa, $p = 0.04$, and 4.9 ± 3.1 vs. 8.5 ± 5.5 mmol/l, $p < 0.0001$, respectively).

CONCLUSIONS: The results of our study are in concordance with other studies, where higher hemoglobin, lower pO_2 and lower lactate were associated with better survival. Prospective, randomised studies are required to determine the target levels of these parameters.