Electrolyte imbalance – a hidden factor in the outcomes of patients with out-of-hospital cardiac arrest

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KEYWORDS: out-of-hospital cardiac arrest, electrolytes, imbalance, potassium, survival.

CITATION: Cardiol Croat. 2025;20(11-12):285. | https://doi.org/10.15836/ccar2025.285

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Introduction: Out-of-hospital cardiac arrest (OHCA) is commonly associated with metabolic and electrolyte disturbances, including acidosis, glucose dysregulation, and changes in potassium, calcium, magnesium, and lactate levels[1]. Persistent abnormalities after return of spontaneous circulation (ROSC) are frequently linked with adverse outcomes. The aim of this study was to evaluate the prevalence of electrolyte imbalance and its association with survival in OHCA patients.

Results: We retrospectively analyzed 38 patients with OHCA, 78% male, most frequently aged 70–79 years. The most common initial rhythm was ventricular fibrillation (79%). Potassium levels were normal in 53% of patients, hypokalemia was observed in 36%, and hyperkalemia in 7.9%. Regarding fluid therapy, 500 ml of normal saline was administered in 28.9% of cases, while the remainder received various combined infusions. Statistical analysis showed a significant difference in potassium levels between survivors and non-survivors (p=0.018). No statistically significant differences were observed for sodium, chloride, bicarbonates, or lactates.

Conclusion: These findings emphasize the prognostic importance of potassium status in OHCA. Early recognition and correction of hyperkalemia, hypokalemia, or severe acidosis are crucial for resuscitation outcomes and survival, given the central role of electrolytes in cardiac function and conduction. Beyond clinical management, strengthening public education and first aid training remains essential, since a single trained bystander can determine survival. Clinical guidelines should therefore integrate both medical and preventive perspectives.

RECEIVED:
September 26, 2025
ACCEPTED:
October 22, 2025

LITERATURE

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