

30-day mortality and neurological outcome in survivors of out-of-hospital cardiac arrest

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Purpose: Mortality is high in survivors of out-of-hospital cardiac arrest (OHCA) — it is even up to 86% and it strongly correlates with ischemic brain damage. In the last decade, quality of cardiopulmonary resuscitation by emergency medical services (EMS) enormously improved as well as the postcardiac arrest treatment of survivors of OHCA in intensive care units, in particular by introducing mild induced therapeutic hypothermia to prevent ischemic brain injury. Our purpose was to evaluate 30-day mortality and neurological outcome in survivors of OHCA.

Methods: We retrospectively studied 119 survivors of OHCA (73.1% men, mean age 64.1±13.5), admitted from 2011 to 2013. On admission, they were comatose with palpable pulse, breathing either spontaneously or mechanically ventilated. Postcardiac arrest treatment included iv. infusion of fluids, vasopressors and inotropes if necessary, percutaneous coronary interventions (PCI) in case of acute coronary syndromes (ACS), mild induced hypothermia of 34°C for the first 24 hours. Neurological evaluation by cerebral performance category (CPC) scale 1-5 was performed. Mild to moderate neurological disability was registered as CPC

scale 1-2, severe cerebral disability, vegetative state and brain death as CPC scale 3-5.

Results: OHCA was witnessed in 45.4%. It was the consequence of ventricular fibrillation or pulseless ventricular tachycardia (VF/VT) in 54.6% and of asystole or pulseless electrical activity (PEA) in 45.6%. Mean time from OHCA to EMS arrival was 8.6±4.5 minutes, mean time from EMS arrival to return of spontaneous circulation (ROSC) due to resuscitation by EMS 17.6±17 minutes. On arrival to intensive care, the patients were comatose, 92.4% mechanically ventilated. Mild therapeutic hypothermia was performed in 82.4% during the first 24 hours. Mean admission troponin I level was 6.5±20.8 µg/l, admission lactate 6.5±4.2 mmol/l and peak troponin I 35.3±4.8 µg/l. ACS were the cause for 41.1% of OHCA. PCIs were performed in 40.3% after emergency coronary angiography. Mean ejection fraction within the first few hours was 33.7±15%. Vasopressors were administered in 75.6%, inotropes in 57.1%, intraaortic balloon pump in 6.7%. 30-day mortality was 46.2% and 6-month mortality 52.9%. CPC scale 1-2 was achieved in 35.3%, CPC scale 3-5 in 64.7%.

Conclusion: Improvements in resuscitation and postresuscitation care resulted in an increased survival and better neurological outcome of successfully resuscitated patients due to OHCA.

KEYWORDS: out-of-hospital, cardiac, arrest, outcome.

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