

Post Intensive Care Syndrome in out-of-hospital cardiac arrest patients: A prospective observational cohort study

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Introduction:

Intensive care unit (ICU) patients are at increased risk to suffer from a post-intensive care syndrome (PICS), which includes psychological, physical and/or cognitive symptoms long after the index hospital stay. Our aim was to systematically evaluate PICS in patients with out-of-hospital cardiac arrest (OHCA).

Methods:

In this prospective observational cohort study, baseline predictor variables were collected during ICU stay and PICS was measured at 90 and 365 days after ICU admission within the following domains: a) psychological burden (Hospital Anxiety and Depression Scale [HADS], Impact of Event Scale-Revised [IES-R]), b) physical symptoms (EuroQol [EQ-5D]), and c) cognitive functioning (Cerebral Performance Category [CPC] score, modified Rankin Scale [mRS]). PICS was defined as impairment in at least one domain.

Results:

Of 139 patients, 69 patients (49.6%) showed evidence of PICS after 90 days. Eighteen (12.9%) reported psychological, 51 (36.7%) physiological, and 35 patients (25.2%) showed cognitive impairments. Univariate logistic regression analyses found intubation (OR 2.32, 95%CI 1.08 to 4.97, $p=0.03$), sedatives (OR 3.36, 95%CI 1.03 to 11.00, $p=0.045$), mRS at discharge (OR 4.33, 95%CI 1.70 to 11.01, $p=0.002$), CPC at discharge (OR 3.29, 95%CI 1.43 to 7.60, $p=0.005$) and work loss during 90-day follow-up (OR 13.42, 95%CI 1.67 to 107.53, $p=0.014$) to be associated with PICS. After one year, 52 patients (47.3%) had evidence for PICS with fourteen patients (12.7%) showing psychological, 40 (36.7%) physiological, and 24 (22.2%) cognitive impairments. Duration of rehabilitation (OR 1.24, 95%CI 1.03 to 1.50, $p=0.026$), APACHE score (OR 1.08, 95%CI 1.02 to 1.15, $p=0.007$), mRS (OR 4.05, 95%CI 1.45 to 11.29, $p=0.008$) and CPC at discharge (OR 3.26 95%CI 1.31 to 8.08, $p=0.01$) were associated with PICS at one year follow-up.

Conclusions:

With a growing number of patients surviving their ICU stay after an OHCA and nearly half of all OHCA survivors displaying PICS up to one year after ICU admission, appropriate screening and management is necessary to minimize the risk for PICS and to meet the increased need for its treatment. Future studies should evaluate whether early identification of these patients enables preventive strategies.