

Category : **Cardiovascular: cardiac arrest\CPR**

A232 - Risk factors for mortality in ICU cardiac arrest

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Introduction:

This study evaluates the incidence, risk factors of mortality and 1-year-survival in patients with cardiac arrest in the ICU (ICUCA).

Methods:

At a German university hospital with 78 non-cardiac-surgical ICU beds (surgical 41, medical 37) all adult patients with ICUCA, defined as need for performing chest compressions and/or defibrillation for the first time on the ICU were included. Primary endpoint was the occurrence of ICUCA. Secondary endpoints included conditions associated with ICUCA, rates of no-return-of-spontaneous-circulation (ROSC), risk factors of no-ROSC, survival to hospital discharge, 1-year-survival and cerebral performance category (CPC) one year after cardiac arrest.

Results:

We observed 114 ICUCA out of 14,264 ICU-admissions and 64,809 occupancy days according to an incidence of 0.8% of ICU-admissions (95%CI:0.7-1.0) and 0.2% of ICU occupancy days (CI95:0.1-2). Conditions associated with ICUCA were cardiocirculatory (n=88 [77%]), induction of anaesthesia (n=26 [23%]), respiratory failure [n=19 [17%]) and airway complications (n=14 [12%]). 34 patients (30%) had no-ROSC. Risk factors of no-ROSC were cardiac (Odds ratio (OR):5.4; 95%CI:1.4-20.7)/hepatic comorbidities(OR:7.2; 95%CI:0.9-54.6), SOFA \geq 2(OR:8.3; 95%CI:0.9-74.8) and continuous-renal-replacement-therapy before ICUCA (OR:5.9; 95%CI:1.7-20.8). Interestingly, HCO₃-levels $>$ 21 mmol/l in combination with cardiac comorbidities were associated with a higher mortality-risk (HCO₃- $<$ 21mmol/l:13%; 21-26mmol/l:45%; $>$ 26mmol/l:42%) / SOFA \geq 2 (HCO₃- $<$ 21mmol/l:8%; 21-26mmol/l:36%; $>$ 26mmol/l:33%). Hospital-mortality was 78%(n=89). 1-year-survival-rate was 10% (95%CI:5.5-17.7), survival with a good neurological (CPC1-2) outcome was 6.1%(95%CI:2.5-12.2).

Conclusion:

ICUCA is a rare but serious complication in the ICU. Further research should concentrate on identifying early predictors of survival, such as HCO₃-levels, and subsequently on the prevention of ICUCA.