

Title:

Paediatric Out-of-Hospital-cardiac arrests and Emergency Department-cardiac arrests: factors associated with survival to discharge and improved neurological outcome.

Abstract: (Your abstract must use Normal style and must fit into the box. Do not enter author details)

PURPOSE OF THE STUDY. Knowing factors associated with survival to discharge and neurological outcome in Out-of-Hospital Cardiac Arrest (OHCA) and Emergency-Department Cardiac Arrest (EDCA).

MATERIALS AND METHODS. Prospective study (61 hospitals, 4 countries) using Utstein style with paediatric OHCA and EDCA. Factors associated with survival and neurological outcome to discharge (paediatric overall performance category –POPC–) were analyzed from 1st Jun 2014 to 15th May 2015.

RESULTS. We have analyzed 46 paediatric cardiac arrests, 13% (6/46) EDCA, 4/46 unknown rhythm, 4/46 inpatients, 50% male. Median age of the sample: 6 years (interquartile range 1.7-10.9).

- We found association between survival to discharge and:
 - first rhythm different to asystole, $p=0.002$. 12.5% (3/24) of patients whose first rhythm was asystole survived to discharge vs 66.7% with different known rhythm (8/12),
 - lower PELOD score in first 24 hours ($p=0.04$).
- We found association between $POPC \geq 4$ to discharge and:
 - first rhythm different to asystole, $p=0.002$. 87.5% (21/24) of patients whose first rhythm was asystole had $POPC \geq 4$ vs 33.3% with different known rhythm (4/12),
 - lower PELOD score in first 24 hours ($p=0.035$).

The survival rate to discharge in children whose first rhythm was PEA/bradycardia was higher than in children whose first rhythm was asystole, $p=0.002$. 2 children whose first rhythm was asystole survived to discharge, both with $POPC=3$.

CONCLUSIONS. In our paediatric OHCA/EDCA study, patients whose first cardiac arrest-rhythm was different to asystole survived to discharge and had better neurological outcome (nevertheless some patients whose first rhythm was asystole survived to discharge with $POPC=3$). We need a larger tracing and to know more about other variables that may be associated with good outcome despite asystole as first rhythm. PELOD in first 24 hours seems to be a good predictor of survival and a good neurological outcome to discharge.