PAEDIATRIC OUT-OF-HOSPITAL-CARDIAC ARRESTS AND EMERGENCY DEPARTMENT-CARDIAC ARRESTS: FACTORS ASSOCIATED WITH SURVIVAL TO DISCHARGE AND IMPROVED NEUROLOGICAL OUTCOME.

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 (65 hospitals, 6 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 Dec 2015.

RESULTS. We have analyzed 75 paediatric cardiac arrests, 12 of them were EDCA, 57.3% male. Median age of the sample: 3.6 years (interquartile range 1.1-9.1).

- We found association between survival to discharge and:
  - first rhythm different to asystole, p= 0.002. 16.6% (7/42) of patients whose first rhythm was asystole survived to discharge vs 51.9% with different known rhythm (14/27), nevertheless some patients whose first rhythm was asystole survived to discharge with 1 POPC=2, 4 POPC=3, 1 POPC=4, 1 POPC=5.
  - bystander (who started CPR before medical team arrived, p=0.03).
  - lower PELOD score in first 24 hours (p=0.013).
- We found association between survival to discharge with POPC 1 or 2 and:
  - first rhythm different to asystole, p<< 0.001. 2.7% (1/36) of patients whose first rhythm was asystole survived to discharge with POPC=1 or 2 vs 44% with different known rhythm (11/25).
  - bystander (p=0.04).
  - lower PELOD score in first 24 hours (p<0.001)

CONCLUSIONS. In our paediatric OHCA/EDCA study, a) patients whose first cardiac arrest-rhythm was different to asystole, b) patients with bystander and c) patients with lower PELOD at first 24 hours survived to discharge and had better neurological outcome. We need a larger tracing and to know more about other variables that may be associated with good outcome.