

E-PEDCARE: first results of an international prospective registry of pediatric Out-of-Hospital and Emergency Department Cardiac Arrest.

**INTRODUCTION.** The mortality of pediatric Cardiac Arrests (CA) remains high despite efforts towards its reduction, and survivors often have profound neurological impairments. The characteristics, treatment and outcomes of pediatric CA are still incompletely studied and clinical practice guidelines are based on insufficient evidence.

**PARTICIPANTS AND METHODS.** E-PEDCARE is a prospective multicenter study (60 hospitals in 4 countries) of Out-of-Hospital CA (OHCA) and Emergency Department CA (EDCA) in patients admitted in Emergency Departments. Data collection and reporting are done according to Utstein Style, focussing on both the epidemiology and the variables associated with survival and neurological outcomes. We describe the preliminary results after the first nine months of data collection.

**RESULTS.** We have analysed 41 consecutive CA, 12.2% of which were EDCA. The median age of the sample was 6.4 years (interquartile range 1.2-12.0), 48% were male. The CA happened at home (39%), street (17.1%), school (4.9%), sports ground (2.4%) and other places (36.6%). The etiology was: presumed cardiac (22.2%), trauma (19.5%), respiratory (17.1%), drowning/submersion (14.6%), other non-cardiac (12.2%) and unknown (14.6%). There was a bystander in 46.3% of cases. However, “phone resuscitation” was started in only 17.1% and “phone-cardiopulmonary resuscitation” in 17.1%. The initial rhythm was asystole in 56.1% of CA, bradycardia in 19.5%, ventricular fibrillation in 7.3%, pulseless electrical activity in 4.9%, pulseless ventricular tachycardia in 2.4% and unknown rhythm in 7.3%. The most frequent known rhythm before return of spontaneous circulation (ROSC) was ventricular fibrillation (6/41, 14.6%) followed by asystole (4/41, 9.8%). Automated external defibrillator was used in 5 patients (12.2%). Overall, the median time between CA and the start of life support was 4 minutes (interquartile range 5-14), the median time between CA and first dose of adrenaline 7.8 minutes (4-16.8) and the time to first shock where relevant, 6 minutes (1-11). 8 (19.5%) patients were treated with hypothermia.

Outcomes in 36 children with OHCA: ROSC in 66.7% and sustained ROSC in 58.3% with 50% admitted to the intensive care unit. Six children are still inpatients. Eleven others have been discharged: 8 with a paediatric overall performance category (POPC) 1, one with POPC 2, two with POPC 3).

Outcomes in 5 patients with EDCA: ROSC in 4 and sustained ROSC in 3, one of whom is still in the hospital. Two children survived to discharge, one with a POPC of 3, the other child with a POPC of 1.

**CONCLUSION.** The preliminary results of the E-PEDCARE registry demonstrate a clearly higher OHCA and EDCA survival (with acceptable to good neurological outcome) than previously reported. Further results from this registry might further clarify and strengthen these observations. Continuous efforts are needed in order to know which variables are associated with better outcomes of CA in children.