



## Reference

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### Long-term prognosis according to the rhythm before the first ROSC in paediatric OHCA and EDCA

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**Objectives:** The prognostic value of the first recorded rhythm in cardiac arrests has been studied extensively, with better outcomes seen in shockable rhythms and bradycardia than in asystole. However, little is known about the prognostic value of the first rhythm before Return of Spontaneous Circulation (ROSC). We aimed to analyse if there were the same patterns of outcome according to the rhythm prior to first ROSC in paediatric Out-of-hospital Cardiac Arrests (OHCA) and Emergency-Department Cardiac Arrests (EDCA).

**Methods:** Observational multicentre prospective study in children with EDCA and OHCA. We collected survival to hospital discharge (SHD), survival to 6 months and Paediatric Overall Performance Category (POPC) at 6 months (considering good overall outcome POPC 1 or 2). We used Chi squared test, Fisher's exact test, and RR with 95% confidence interval (95%CI).

**Results:** 273 children, 81.7% OHCA, median age (yrs) 2.5 (0.1–17.4). 201 of them achieved ROSC. We knew the rhythm before first ROSC in 135 children: 48.1% asystole, 23.7% bradycardia, 15.6% pulseless electrical activity (PEA), 9.6% ventricular fibrillation and 3% pulseless ventricular tachycardia.

	SHD p, RR (95%CI)	Survival to 6 months p, RR (95%CI)	POPC 1–2 at 6 months p, RR (95%CI)
Asystole	0.002, 1.47 (1.14–1.91)	0.01, 1.38 (1.07–1.77)	0.06, 1.21 (0.99–1.49)
Bradycardia	0.00009, 0.53 (0.34–0.80)	0.001, 0.59 (0.40–0.88)	0.009, 0.72 (0.53–0.98)
PEA	0.67, 1.07 (0.79–1.45)	0.71, 1.06 (0.79–1.43)	1, 1.03 (0.79–1.33)
Shockable rhythms	1, 1.03 (0.63–1.67)	1, 1.02 (0.63–1.65)	1, 1.12 (0.81–1.54)

**Conclusions:** In children with EDCA or OHCA, bradycardia before first ROSC was associated with a good overall outcome at 6 months. Bradycardia and asystole before first ROSC were associated with higher and lower survival at 6 months, respectively. However, a shockable rhythm before first ROSC was a poor long-term prognosis factor. The prognostic value of a specific rhythm in cardiac arrest may not be the same throughout resuscitation.

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