

## Shockable rhythms are not infrequent in children and their prognosis is better than other rhythms.

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### Abstract

- Purpose of the study. To know the frequency of shockable rhythms (ventricular fibrillation or pulseless ventricular tachycardia) in emergency department cardiac and out-of-hospital cardiac arrest (OHCA) in children, and its prognosis compared to other rhythms.
- Materials and methods. Prospective multicentre study of paediatric cardiac arrest in emergency department and OHCA in children under 18 years old. We collected first blood lactate, blood pH, PELOD scale at 24 first hours, ROSC, survival at discharge and Paediatric Overall Performance Category (POPC) at 6 months from cardiac arrest. T-test, Fisher's exact test, Chi-square test, relative risk and its 95% confidence interval.
- Results.

229 paediatric cardiac arrests, 84.7% of them were OHCA.

Age	Number of shockable /no-shockable first rhythm	%
<1 yo	1 / 77	1.3
1-<8 yo	7 / 88	7.4
8-18 yo	11 / 45	19.6
Overall	19 / 210	8.3

10/19 patients with first shockable rhythm were male, 16/19 were witnessed cardiac arrests, 18/19 were OHCA, 12/19 were defibrillated with AED (automated external defibrillator). Patients with first shockable rhythm didn't have significant difference in proportion of sustained ROSC but had higher survival at hospital discharge (61.1% vs 22.8%),  $p < 0.0001$ , RR 2 (1.1-3.6), higher POPC 1 or 2 at 6 months (41.2% vs 15.1%),  $p = 0.007$ , RR 1.4 (1.1-2.4) and had more frequently presumed cardiac aetiology (77.8% vs 15.6%),  $p < 0.0001$ , RR 5.0 (3.2-7.9). There was not significant difference between shockable and no-shockable group for other well-known prognosis factors like lactate), pH or PELOD.

·Conclusions. Shockable rhythms are not infrequent in children over 1 year old and having them as first rhythm is a good prognosis factor of overall outcome at 6 months. Defibrillation -including AED- should be an important component of paediatric resuscitation, mainly in children over 8 years old.