

Survival Outcomes Among Neonates, Infants and Children Following Extracorporeal Cardiopulmonary Resuscitation for Refractory In-Hospital Pediatric Cardiac Arrest: A report from the NRCPR

Tia Tortoriello Raymond, Christopher Cunnyngham, Marita Thompson, Vinay M. Nadkarni, James Thomas for the American Heart Association National Registry of Cardiopulmonary Resuscitation Investigators

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- Pediatric in-hospital cardiac arrests (IHCA) are not rare.
- ECPR is recommended for consideration for the pediatric cardiac arrest victim with prolonged CPR not responding to conventional CPR.
- ECPR has a positive impact on survival for certain pediatric cardiac arrest patients.

Top 10 Things to Know

1. Pediatric IHCA has about 27% (25-33%) survival to discharge, there usually are lower survival rates with prolonged CPR.
2. Survival for pediatric IHCA may be improved with use of Extracorporeal Cardiopulmonary Resuscitation (ECPR) for the pediatric cardiac arrest patient who does not respond to conventional CPR.
3. The primary outcome for this *NRCPR study population was survival to discharge (SDC) for the pediatric IHCA victim.
4. There were two secondary outcomes for this study
 - the patient who never becomes pulseless would have an improved chance for survival;
 - the pediatric victim would have a favorable neurologic outcome (pediatric cerebral performance category [PCPC] of 1, 2 or 3) at hospital discharge.
5. Of the 199 pediatric CPR events that met criteria for ECPR 87(43.7%) had SDC.
6. The two secondary outcomes showed
 - the patient who maintained a pulse showed no better survival than those who became pulseless
 - favorable neurologic outcomes occurred in 56 (94.9%) of 59 survivors with recorded PCPC
7. Patients categorized with a cardiac condition prior to ECPR are more likely to survive, 48% of the cardiac pediatric IHCA victim reached SDC.

8. There was an increased survival for patients when the first documented pulseless rhythm was a shockable (VF/VT) rhythm, when compared to those with PEA or asystole (P=0.04).
9. Certain preexisting conditions were associated with increased mortality, these included pneumonia, renal insufficiency, and septicemia.
10. Further studies could focus on ECPR patients with preexisting cardiac conditions to validate variables pre and post ECPR care that have a positive impact on survival--pre-quality of CPR, mode of ECPR, cannulation and complications; post ECPR care with glucose and temperature monitoring.

*NRCPR is a performance improvement tool that can be used to identify and monitor key process variables and patient outcomes for in-hospital cardiac arrest.

Link to: (NRCPR.org)