Top Ten Things To Know
Survival Outcomes Among Neonates, Infants and Children Following Extracorporeal Cardiopulmonary Resuscitation for Refractory In-Hospital Pediatric Cardiac Arrest

1. Pediatric in-hospital cardiac arrest (IHCA) has about 27% (25-33%) survival to discharge. Survival rates are usually lower with prolonged CPR.

2. Survival for pediatric IHCA may be improved with use of ECPR for the 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 pediatric cardiac IHCA victim reached SDC.

8. Compared to those with pulseless electrical activity or asystole, survival was increased for patients when the first documented pulseless rhythm was a shockable (ventricular fibrillation/pulseless ventricular tachycardia) rhythm (P=0.04).

9. Certain preexisting conditions were associated with increased mortality, including 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 (ie, pre-quality of CPR, mode of ECPR, cannulation and complications, and 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. NRCPR.org


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