Top Ten Things To Know
Childhood Obesity and Survival After In-Hospital Pediatric Cardiopulmonary Resuscitation

1. Pediatric In-Hospital Cardiac Arrest (IHCA) has about 27% (25-33%) survival to discharge.

2. In this study of 1268 pediatric patients in the NRCPR* database, 17% were obese and 45% were underweight patients.

3. The primary outcome for this *NRCPR study population was survival to discharge (SDC) for the pediatric IHCA victim. There were 2 initial types of events- 725 events (57%) involved pulseless cardiac arrests and 543 (43%) severe bradycardia with pulses.

4. There were two secondary outcomes for this pediatric study:
   • the patient who survived the event (defined as return of spontaneous circulation for >20 min)
   • survival with favorable neurologic outcome.

5. Both the obese and underweight children were more likely to be associated with male gender. Two unique factors were associated with the obese child, they are noncardiac medical illness and cancer. The factors associated with the underweight child were prematurity and cardiac surgery.

6. Obese patients were more likely to:
   • have been pulseless throughout the event (P <0.001)
   • Have a first documented rhythm of asystole (P < 0.05)
   • Have received >2 doses of epinephrine (43%, compared with 29% in each of the other groups; P < 0.001)
   • Have received vasopressin, magnesium, lidocaine, and amiodarone, compared with the other 2 groups (P <0.05).

7. Obesity was independently associated with worse rates of event survival, survival to discharge and survival with a favorable neurologic outcome.

8. Obese patients tended to receive CPR for a longer time than did patients in other weight categories (P <0.08).

9. Self reported feedback showed that obese children were more likely to experience CPR quality issues during resuscitation such as the following:
   • Team function problems (such as deviation from pediatric advanced life support protocols) were present in 10% of the obese group compared to 5% of underweight and 7% of normal weight patients (P<0.05).
   • Invasive airway placement difficulties tended to be more common for the obese (14%) and underweight (12%) patients, than for normal-weight patients (9%; P<0.10).
   • Defibrillation difficulties were more common for obese patients (P < 0.05).
   • Vascular access problems tended to occur more commonly in obese and underweight patients (P<0.09).

10. Future pediatric CPR investigations and guidelines may need to address potential management issues for CPR and advanced life support for the obese child.

*Get With The Guidelines®-Resuscitation, formerly 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.

ECC statements and guidelines | Heart Disease and Stroke Statistics 2010


© 2010, American Heart Association. All rights reserved.