AUTOMATED EXTERNAL DEFIBRILLATORS AND SIMULATED IN-HOSPITAL CARDIAC ARRESTS
Rossano JW, Jefferson LS, Smith EO, Ward MA, Mott, AR. J Pediatr. 2009;154;672-676.

This prospective, randomized, controlled trial compared the time to attempt defibrillation by pediatric residents using automated external defibrillators (AEDs) versus manual defibrillators (MDs). The primary outcome was the first defibrillation attempt, whereas secondary outcomes were frequency of defibrillation attempts at less than 2 and less than 5 minutes.

Because prompt defibrillation is vital to survival of pediatric patients with ventricular fibrillation, researchers hypothesized that the use of AEDs would occur in a shorter time than with MDs in simulated in-hospital ventricular fibrillation cardiac arrest. Pediatric residents who were certified in pediatric advanced life support and had training on the use of AEDs and MDs participated in a scenario of a witnessed, unmonitored, in-hospital arrest of a 25-kg patient.

Those residents randomized to the AED group had shorter time to initial defibrillation than those in the MD group (median, 60 vs 103 seconds; \( P < .001 \)). More residents in the AED group attempted defibrillation at less than 2 minutes than those in the MD group (90% vs 53%; \( P = .003 \)). All of the residents (100%) in the AED group attempted defibrillation at less than 5 minutes compared with 23% of those in the MD group (\( P = .01 \)).

Researchers conclude that the findings support the use of AEDs for pediatric in-hospital cardiac arrests. Further research is needed in other settings and situations to establish whether findings can be generalized.

USE OF PLASTIC BAGS TO PREVENT HYPOTHERMIA AT BIRTH IN PRETERM INFANTS—DO THEY WORK AT LOWER GESTATIONS?
Ibrahim CPH, Yoxall CW. Acta Paediatr. 2009;98:256-260.

In this retrospective audit of admission temperatures of infants born at less than 30 weeks’ gestation, temperature was examined for 2 years before and 2 years after the introduction of polyethylene bags to determine whether occlusive wrapping of preterm infants during resuscitation prevented hypothermia.

A total of 253 eligible infants were included in the sample. Since the introduction of polyethylene bags, hypothermia dropped from 25% to 16% (\( P = .098 \)) in the total sample, which was not statistically significant. Upon subgroup analysis, researchers discovered that there was a statistically significant reduction in hypothermia in infants born beyond 28 weeks’ gestation (19.4% vs 3.9%; \( P = .017 \)), whereas those born before 28 weeks had only a marginal benefit (29.3% vs 24.8%; \( P = .58 \)).

Researchers note that the lack of statistical significance in hypothermia when the bags were used in infants born at less than 28 weeks’ gestation is in contrast to previously published studies. They surmise this is because of the comparatively low incidence of hypothermia at the study site even prior to the introduction of the bags.

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