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Impact of Two Resuscitation Sequences on Alveolar Ventilation during the First Minute of Simulated Pediatric Cardiac Arrest: Randomized Cross-Over Trial

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BACKGROUND

In case of pediatric cardiac arrest, the American Heart Association recommends following the adult resuscitation sequence, i.e., starting with chest compressions. Conversely, the European Resuscitation Council advocates the delivery of five initial rescue breaths before starting chest compressions.

OBJECTIVES

ERC vs AHA

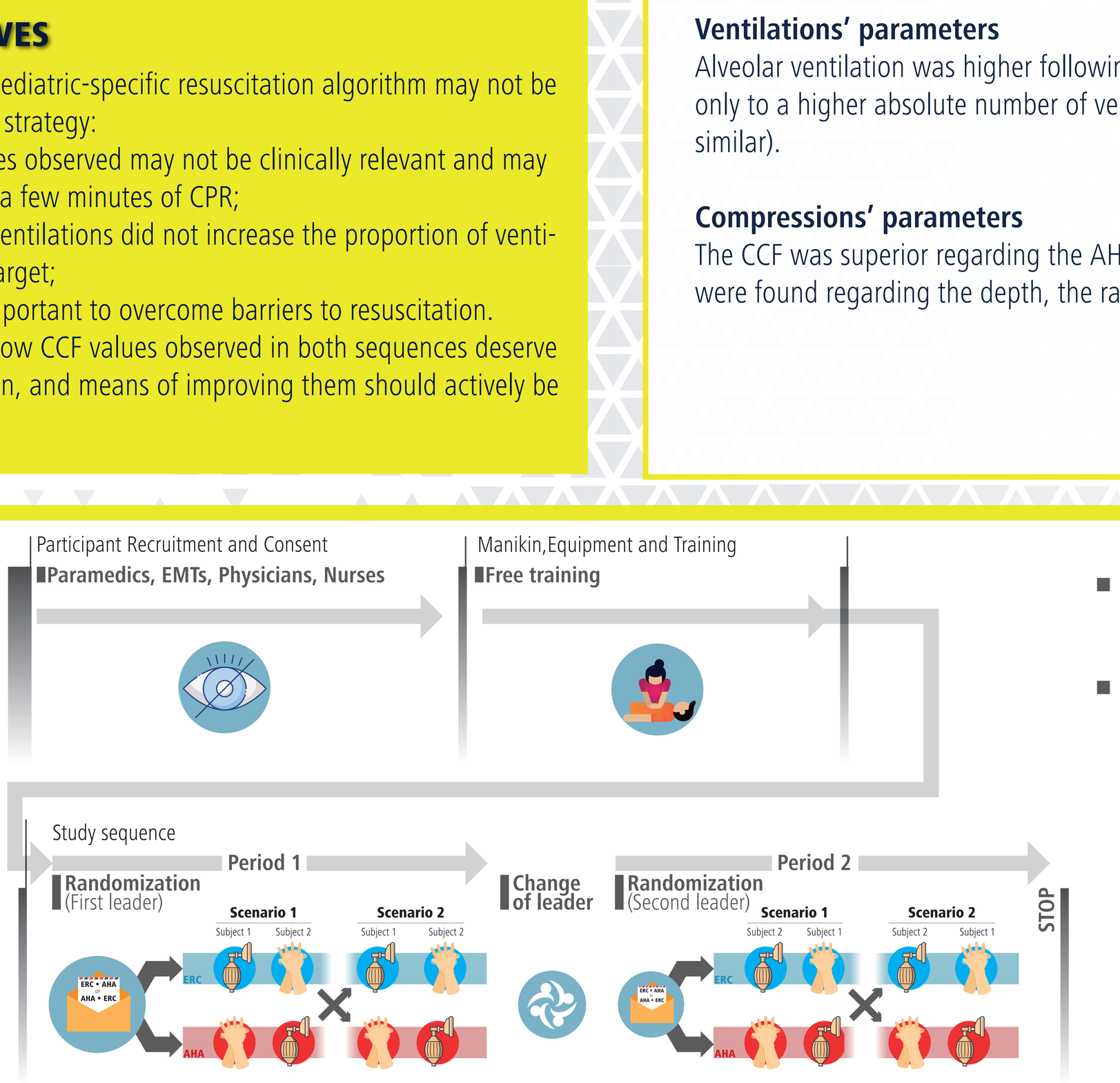
Primary: Does the AHA versus ERC sequence provide better alveolar ventilation during the first minute of CPR?
Secondary: Quality of ventilation and chest compression parameters between AHA versus ERC?

PERSPECTIVES

Advocating a pediatric-specific resuscitation algorithm may not be an appropriate strategy:
- the differences observed may not be clinically relevant and may well fade after a few minutes of CPR;
- the initial 5 ventilations did not increase the proportion of ventilations in the target;
- it is highly important to overcome barriers to resuscitation.

Moreover, the low CCF values observed in both sequences deserve further attention, and means of improving them should actively be sought.

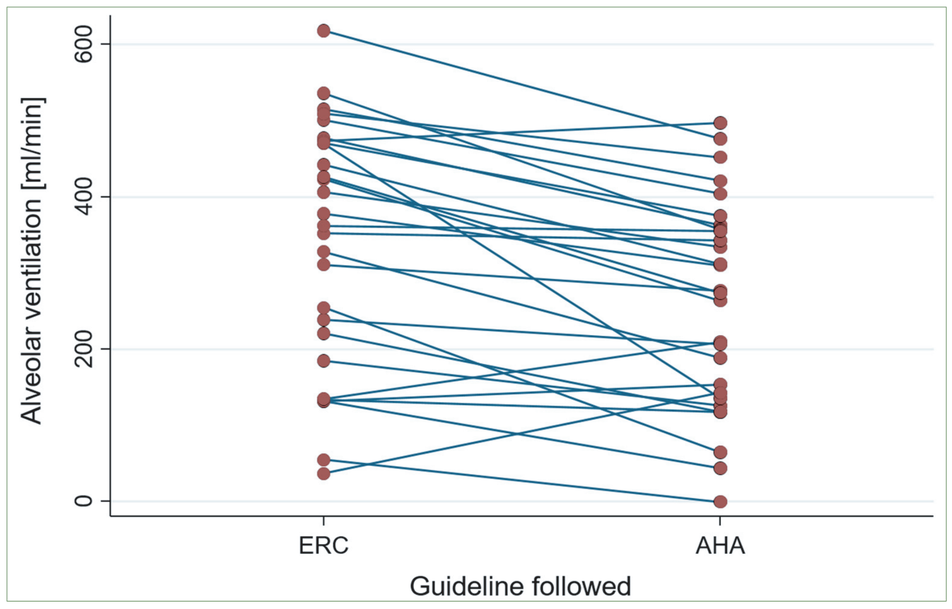
METHOD



RESULTS

370 mL [203;472] — 276 mL [140;360]

Difference 80 mL [24;135]



Ventilations' parameters

Alveolar ventilation was higher following the ERC sequence, related only to a higher absolute number of ventilations (the mean volume was similar).

Compressions' parameters

The CCF was superior regarding the AHA sequence, but no differences were found regarding the depth, the rate, and the chest recoil.

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Reference: Suppan L, Jampen L, Siebert JN, Zünd S, Stuby L, Ozainne F. Impact of Two Resuscitation Sequences on Alveolar Ventilation during the First Minute of Simulated Pediatric Cardiac Arrest: Randomized Cross-Over Trial. Healthcare. 2022; 10(12):2451. https://-doi.org/10.3390/healthcare10122451

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