

Heel compressions quadruple the number of bystanders who can perform chest compressions for 10 minutes☆☆☆

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Abstract

Objective

The objective of the study is to evaluate whether chest compressions using the heel provide a more effective method than manual compressions for bystanders.

Methods

This is a cross-sectional observational comparison study where each subject acted as his or her own control. A 49-person cohort whose age distribution approximated that of sudden cardiac arrest victims were asked to perform 10 minutes of 5-cm manual compressions on a cardiopulmonary resuscitation manikin at 100 compressions per minute. The compression rate and the endurance of each subject were recorded. The same subject was then asked to perform 10 minutes of heel compressions at the same depth and rate.

Results

Sixteen percent of the cohort performed compliant manual compressions for 10 minutes vs 65% using heel compressions. Twenty-four percent of the subjects were not heavy enough to get compliant depth with manual vs 2% with heel compressions, and 6% could not get down on the floor to attempt manual compressions.

Discussion

Most cardiac arrests occur in private residences. If there is a witness, his or her age usually approximates that of the victim. Heel compressions are useful in situations where a lone rescuer cannot get down on the floor, cannot compress the chest to guideline depth because of an infirmity or lack of weight, or becomes too tired to continue manual compressions. Heel compressions significantly increase the bystander population's ability to provide effective, uninterrupted compressions until EMS arrival.

☆ Site where work was done:

☆ • Design: various places. Meetings at both authors' homes.

☆ • Data collection: various places in zip code 14756 and 31411.

☆ • Data analysis: at Trenkamp's residence, including meetings between Trenkamp and Perez.

☆ • Paper preparation: at Trenkamp's residence, with review by Perez via e-mail.

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