IN BRIEF A Summary of the Evidence

Cardiopulmonary Resuscitation Feedback Devices for Adult Patients in Cardiac Arrest: A Review

Key Messages

• The use of a cardiopulmonary resuscitation (CPR) feedback device can result in improvements in CPR quality.

• It is uncertain whether using CPR feedback devices leads to improved patient outcomes.

• One guideline recommends the use of CPR feedback devices to improve the quality of CPR despite the lack of evidence that it improves patient outcomes.

Context

In Canada, up to 40,000 Canadians die of sudden cardiac arrest each year. The survival rate is low — 1% to 6% of those who experience sudden cardiac arrest outside of the hospital setting will survive it. However, survival is more likely if cardiopulmonary resuscitation (CPR) and defibrillation are initiated immediately. CPR involves external chest compressions and mouth-to-mouth ventilation. Key components of high-quality CPR include minimizing interruptions in chest compressions, providing compressions of an adequate rate and depth, avoiding leaning on the chest between compressions, and avoiding excessive ventilation. Poorly performed CPR contributes to poor survival outcomes.

Technology

Devices that provide audiovisual feedback during CPR have been developed to help improve the quality of CPR performance. These devices provide users with real-time feedback on their chest compression rate and depth, chest compression fraction (proportion of time during cardiac arrest that chest compressions are being performed), and ventilation rate.

Issue

It is unclear whether improvements in CPR quality achieved by CPR feedback devices translate into improvements in sudden cardiac arrest survival rates. A review of the clinical effectiveness of these devices, and a review of the evidence-based guidelines, will help inform decisions about the use of CPR feedback devices for adult patients in cardiac arrest.

Methods

A limited literature search was conducted of key resources, and titles and abstracts of the retrieved publications were reviewed. Full-text publications were evaluated for final article selection according to predetermined selection criteria (population, intervention, comparator, outcomes, and study designs).

Results

The literature search identified 274 citations, with 4 additional articles identified from other sources. Of these, 3 met the criteria for inclusion in this review: 1 systematic review and meta-analysis; 1 retrospective, observational before-after study; and 1 guideline.

Read more about CADTH and its review of cardiopulmonary resuscitation feedback devices for adult patients in cardiac arrest at:

www.cadth.ca/cardiopulmonary-resuscitation-feedback-devices-adult-patients-cardiac-arrest-review-clinical-0.

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