

Continuous chest compressions versus interrupted chest compressions



A cardiac arrest is an unforeseen loss of function in the heart's electrical system. Cardiac arrest stops blood from being pumped to major organs of the body. In a matter of seconds the person is pulseless and unconscious. Cardiopulmonary resuscitation (CPR) needs to be started within minutes to increase survival rate and decrease brain damage from lack of oxygenation. CPR is a vital part of managing a person who experiences a cardiac arrest. In the adult population, of those who have experienced cardiac arrest, does the use of compressions only versus adding rescue breaths when giving CPR decrease mortality rate? This article will explore the evidence-based practice in decreasing mortality rates through the use of continuous chest compression CPR.

Background and Significance

Through recent years, there has been a debate over if continuous chest compressions or interrupted chest compressions (30 compressions: 2 breaths) can decrease mortality rate in people who experience sudden cardiac arrest. Current evidence-based practice continues to evaluate the effectiveness of continuous chest compressions during cardiopulmonary resuscitation (CPR). According to the American Heart Association (AHA), in the United States there are over 320,000 sudden cardiac arrests that happen annually in out-of-hospital settings and 88 percent of cardiac arrests happen at home (2015). If CPR is started promptly and properly to people who experience cardiac arrest, their lives can be saved.

Perfecting CPR is an ongoing trail. Past CPR standards focused on administering both chest compressions and rescue breaths. CPR is done to

keep blood flow and oxygenation to the body until the heart is functioning again with the help of emergent medical care. Being able to notice the early signs and symptom leading to cardiac arrest are key to providing early and efficient CPR with high survival rates.

Since most cardiac arrest happens outside of the hospital setting, improving survival rate is essential. CPR promotes blood flow and oxygenation to the body through mechanical chest compressions and the use of rescue breaths. Current research is shifting away from the use of standard CPR (30 compression: 2 breaths) and focusing on continuous chest compression to increase survival rate. Limiting time off the chest is believed to increase survival rate of individuals who experience cardiac arrest.

Literature Review

The researcher used multiple databases and websites to search for articles to support the PICO question. The Cochrane Library website, Clinical Key, ProQuest, and the American Heart Association. AND was used for a Boolean Operator, to narrow down the search the researcher limited only, full text articles, journals of nursing, nurse as an author, evaluating the title, articles within the last five years and reviewing the abstract.

Continuous Chest Compression Versus Interrupted Chest Compression

This is a meta- analysis article investigates whether continuous chest compression or interrupted chest compression make a difference when performing CPR. Standard CPR consist of using the 30 chest compressions: 2 breaths method. New studies are focusing more on continuous chest

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compression claiming that limiting time off the chest increases survival rate in people who experience cardiac arrest.

This search was conducted by using multiple databases to find articles that talked about compression style (continuous or interrupted) during CPR comparing them to survival rate. Articles included all randomized, quasi-randomized, and cluster-randomized studies. Two authors independently evaluated the articles that were found through the search. A third author was used to resolve any disagreements about the articles. Biases were decreased by the authors not being blinded to authors, institutions, or publications. These articles were assessed by using the GRADE assessment tool. Simulation studies on mannequins or other instruments related to the topic excluded. Survival rates to hospital admission, hospital discharge, and one year after were compared.

In conclusion of the literature review, there was found no significant difference between continuous versus interrupted chest compressions. There was a slight difference with the trials of bystander CPR-initiated showed increase in the number of people surviving hospital discharge from 11.6% to 14% when continuous chest compression are done versus interrupted (Zhan, Yang, Huang, He, & Liu, 2017, p. 21). when compared to healthcare professionals, early initiation of CPR and quality chest compressions leads to better outcomes.

Rating teams' non-technical skills in the emergency department

Within this qualitative study health care professionals were interviewed on their performance in emergency situations such as CPR. This study was <https://assignbuster.com/continuous-chest-compressions-versus-interrupted-chest-compressions/>

conducted to understand roles and improve communication in medical emergencies. The health care professional reflected on their practices and communication to improve and make changes that result in better outcomes using the “ Team Emergency Assessment Measure” (TEAM). The TEAM Tool assess the non-technical skills of the nurses.

This study was conducted with emergency nurses from two regional hospitals using emergency nurses as participants. A twelve-month period was used to conduct the research using 17 nurses. These nurses were interviewed across focus groups about that has similar number of resuscitation events.

The TEAM Tool helped to define roles in resuscitation to improve survival rate. This tool help to promote reflective feedback about CPR to increase survival rate by focusing on chest compression depth and rate. 89% of patients survived emergent situations dealing with cardio-respiratory complications (Porter, Cant, & Cooper, 2017, p. 16). Communication of roles and chest compression rate contributes to increasing survival rate of people who experience cardiac arrest.

Communication and protocol compliance and their relationship to quality of CPR

This integrative review was conducted to improve priorities actions when performing CPR. A literature review was completed to evaluate the performance of healthcare professionals' CPR skills and promoting an increase in survival rate in patient who experience a cardiac arrest (Sullivan, 2015, p. 1). When nurses are competent in CPR skills and handling emergent

situations, there is a better chance of the patient surviving due to proper care be given.

Databases (PubMed, EMBASE, and CINAHL) were used to look up articles. 183 articles came up, which were filtered. The articles further underwent evaluation focusing on CPR priorities and nurses' CPR skills.

In conclusion, nurses were able to pass their basic lifesaving skills test, but were not able to successfully complete a code mock trial. This study found that nurses needed to improve in their skill when performing CPR. If nurses' skills were improved there would be better survival rate (Sullivan, 2015 p. 5). The focus is on promoting quality chest compressions and limiting time off the chest to increase survival rate when performing CPR. This study aims to increase CPR skill in healthcare professionals by meeting CPR guidelines through AHA.

Instructional Strategies to Improve Nurses' Retention of CPR Priorities

The main purpose of this article was to investigate communication in relation to quality of CPR. Improving CPR and survival rate in a layperson who experiences out-of-hospital CPR through telephone communication was under investigation. According to Nord-Ljungquist & Bohm (2015), if CPR is given with the first two minutes of a cardiac arrest, survival rates are increased (p. 255). The chances of survival can increase two or three times greater if victims of cardiac arrest are treated early (Nord-Ljungquist & Bohm, 2015, p. 255). When performing CPR this article's key is on chest continuous chest compressions and maintaining a patent airway to promote an increase in survival rate.

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This is a retrospective observational study was conducted by recording of videos and audio files that were analyzed. The study consisted of volunteer laypersons and emergency medical dispatchers (EMD) who participated in a simulated environment. Each simulation was done in a separate room and EMD gave instruction on how to perform CPR with chest compressions and using rescues breaths (Nord-Ljungquist & Bohm, 2015, p. 255). The volunteers where later interviewed about their experience.

In conclusion, this study noticed that airway management was a problem (Nord-Ljungquist & Bohm, 2015, p. 258). The quality of CPR when doing chest compression is what resulted survival rate. Focus in the future needs to be aimed toward quality and effectiveness of CPR rather than if it is continuous or interrupted chest compressions being done, even though contentious chest compression is recommended for a layperson (Nord-Ljungquist & Bohm, 2015, p. 259).

Implications

When it comes to providing CPR, the key is early detections, providing quality chest compressions (depth, rate and consistency), and airway management. Cardiac arrests are emergent situation, which warrant immediate attention. Improving CPR is always essential in healthcare to decrease mortality rate. Future practice should continue to focus in early detection of cardiac arrest and providing quality chest compression, which makes a difference in mortality rate.

Recommendation for future studie:

- Not enough research done on the difference continuous and interrupted chest compressions
- More research needs to be done by nurses and nurse practitioners
- More focus need to be placed on the quality of chest compression

Conclusion

Evidence thus far does not indicate that there is a significance decrease in mortality rate when using continuous chest compressions. Continuing to focus on early detection and quality compressions seem to make positive difference for improving survival rate of a cardiac arrest. More research and trials into continuous chest compression will need to be done in order to improve CPR. Thus, continuing following the AHA guidelines in CPR should be continued in practice until future research is completed.

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