Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Letter to the Editor

Rapid implementation of a mechanical chest compression device for in-hospital cardiac arrest during the COVID-19 pandemic

To the Editor,

The COVID-19 pandemic has created unique challenges for resuscitation teams responding to cardiac arrests. In response, the American Heart Association and European Resuscitation Council have released new guidance to help navigate these challenges. Specific mention was made to consider mechanical chest compression devices to reduce the number of providers needed during the resuscitation.[1,2] This guidance builds upon prior consensus on science and guidelines recommending against routine use of mechanical chest compression devices, outside of arrests where sustained high-quality manual compressions is impractical or a threat to provider safety.[3,4] In general, the quality of data regarding the safety/efficacy of mechanical chest compression devices for in-hospital arrest is low.[5] Explored here are our experiences with rapid implementation of the LUCAS® chest compression system at a tertiary care hospital during the COVID-19 pandemic.

The LUCAS® device was introduced in April 2020. In total, 23 in-person training events were held and were attended by 126 nurses and 30 physicians. A video learning module was released to all potential code team responders and was completed by 555 individuals. Twenty-one in-hospital cardiac arrests (IHCA) occurred between April and June 2020. In June 2020, a survey exploring the attitudes and experiences with the device (see supplement data) was sent to nurse and physician code leaders identified via intra-arrest documentation. Ultimately, 44/76 (58%) participants responded, distributed roughly evenly between nurses (34%), code leaders (32%), and attending physicians (34%).

Ultimately, 32 (73%) responders had been involved in an event where the LUCAS® device was deployed. On a five-point Likert scale ranging from 'Strongly Disagree' to 'Strongly Agree,' more than half of participants *strongly agreed* that the LUCAS® reduced the number of individuals needed in the room (56%), improved the quality of chest compressions (59%), and led to a more controlled resuscitation experience (59%). Of the surveys where the LUCAS® was deployed, 12 (37%) participants *agreed/strongly agreed* that the LUCAS® led to delays in patient care, while 12 (37%) participants *disagreed/strongly disagreed* that it resulted in delays. The largest barrier identified during use of the LUCAS® was concern for patient size and patient transfer onto the LUCAS® backboard. Of the 20 (45%) participants who were involved in an event during the pandemic where the LUCAS® was not deployed, 8 (40%) participants specifically mentioned it was not utilized due to concerns regarding patient size, while 7 (35%) participants noted that by the time of deployment, the patient had return of spontaneous circulation.

These survey results show generally positive responses despite rapid implementation of the LUCAS® device. The goal of creating a safer and more controlled resuscitation effort was appreciated by participants. Participants also identified avenues for further improvement. Specific suggestions included more training sessions with emphasis on patients of various body habitus, and transitioning patients to the LUCAS® backboard in hopes of decreasing delays in care. Overall, these survey results show prompt introduction of the LUCAS® device during the COVID-19 pandemic is feasible, but further technical enhancements and hospital staff training are needed to achieve optimal results.

Contributions

All authors have made substantial contributions to the conception and design of the study, acquisition of data, or analysis and interpretation of data. All authors reviewed the manuscript and revised it for intellectual content. All authors approved the manuscript prior to submission.

Conflicts of Interest

None declared.

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Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at https://doi.org/10.1016/j.resuscitation.2020.08.122.

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