Letter to the Editor

Re: Guideline for resuscitation in cardiac arrest after cardiac surgery

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Keywords: Cardiopulmonary resuscitation; CPR; Defibrillation

Dr Dunning et al. [1] published guidelines for resuscitation of patients suffering cardiac arrest after cardiac surgery; hoping that this document would be helpful when the International Liaison Committee on Resuscitation (ILCOR) guidelines are updated in 2010. In creating these guidelines, efforts were made to obtain as wide a range of opinions as possible from the cardiothoracic surgical community and beyond; including topic reviews open to online comments for 2 months, which were published together with these reviews. However, none of these e-comments was referenced; some of which [2] contributed to these guidelines in that discussion included new concepts brought to the authors’ attention through these e-comments.

It was suggested that abdominal-only (AO) cardiopulmonary resuscitation (CPR) (or AO-CPR) can immediately be applied during the performance of a sternotomy, resternotomy or thoracotomy, thereby allowing uninterrupted CPR [2]. However, as pointed out in these guidelines, further research is necessary before AO-CPR during resternotomy can be recommended for routine use. Some of this research is already underway in humans. Two case reports of AO-CPR during resternotomy were recently brought to my attention; which, according to the authors, resulted after reading my e-comment [2] cited above. They described two patients in whom AO-CPR was used; in patient 1, the generated systolic blood pressures measured from the radial artery were the same as conventional CPR and, in patient 2, were the same as internal cardiac massage. They are currently considering using a protocol of primary abdominal CPR for all their cardiac surgery patients; however, consensus and training have not been achieved as yet. The most recent animal study of AO-CPR [3], not referenced by these guidelines, indicates that AO-CPR provides far superior compression-induced ventilation (an adequate breath for each compression/decompression cycle) and equivalent, if not better, haemodynamics when compared to chest-only (CO) CPR (or CO-CPR) and standard CPR.

In addition to the aforementioned potential/theoretical advantages of AO-CPR, another advantage is the likelihood that CPR does not have to be interrupted to perform endotracheal intubation. Intubating the patient with a Boussignac multichannel endotracheal tube would allow the delivery of constant-flow insufflation of 100% oxygen (CFIO) [4]. CFIO has been reported to be an efficient ventilatory method (with greater oxygenation when compared to the group of intubated patients that were mechanically ventilated) during continuous CO-CPR for cardiac arrest in humans [4]. Continuous CO-CPR ensures maximal haemodynamic efficiency [5]. Perhaps use of a Boussignac tube should be advocated in all cardiac surgery patients that are to remain intubated after surgery. The recommendation made in these guidelines that if the patient is not intubated then the second person to attend the arrest should administer 100% oxygen with a bag/valve/mask with two breaths every 30 compressions optimises neither ventilation/oxygenation nor circulation. On the other hand, immediate use of a Boussignac tube along with uninterrupted AO-CPR could allow the ‘ultimate’ optimisation of both ventilation/oxygenation and circulation because of its already superior ventilation and haemodynamics. Perhaps nurses caring for cardiac surgery patients that are not already intubated should be required to be proficient in endotracheal intubation.

References


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Reply to the Letter to the Editor

Reply to Rottenberg

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Keywords: Resuscitation; Cardiac arrest; Cardiac surgery; Guideline

We thank Dr Rottenberg for his comments [1] and for his interest in our work.

A guideline referring to many studies and meta-analyses will necessarily have a long reference list, and our guideline had 141 references. We are sorry not to have included Dr Rottenberg’s e-comment in the reference list but, as with our previous guidelines, readers are informed of the papers addressing the various topics in the ICVTS and of the presence of e-comments relating to papers which have served to inform the guidelines.