Reviewer's report

Title: ROSC rates and live discharge rates after cardiopulmonary resuscitation by different CPR teams - a retrospective cohort study

Version: 0 Date: 30 Aug 2017

Reviewer: Quintin Quinones

Reviewer's report:

In "Differences in patient outcomes for cardiopulmonary resuscitation performed by rapid response, resident, and emergency teams" the authors seek to answer the clinically important question of whether the use of a dedicated Rapid Response Team (RRT) results in superior outcomes than resident or emergency room (ER) teams when responding to cardiac arrest. Retrospective chart review was used to compare the outcomes of the three groups. The RRT group responds to in hospital cardiac arrest M-F 7a-10p and Sat 7a-midnight. The resident team covers in hospital cardiac arrests M-f 10p-7a and Sat midnight to 7a and all day Sunday. The ER team covers all cardiac arrest in the ER as well as the out of hospital cardiac arrest at all hours. Patients in these different groups are comparable based on age, sex, and Charleson Comorbidity Index is similar among the groups.

Odds ratios for ROSC are reported as 0.59 and 0.71 for the resident and RRT groups respectively. Based on this data the authors conclude that the hospital should be staffed with a dedicated RRT at all times.

Unfortunately the authors are unable to control for the fact that the resident team operates at night and on the weekends when the hospital is often minimally staffed. The difference in outcomes could simply be due to a difference in how quickly cardiac arrest is identified and the resident team is notified at night vs. how the hospital functions during daylight hours. The authors simply do not have the data to draw their conclusion based on the data in this study. Such a bold statement would require a comparison between outcomes of the RRT and resident code team during similar hours and a similar environment.

I agree that attending physician involvement in cardiopulmonary resuscitation would likely show a higher rate of ROSC than a resident run service. However, to be able to draw this conclusion the study must compare how the two teams function during similar time of day in the hospital.
Strengths:

1. Interesting and highly relevant clinical question

2. Patients well matched between groups by age, sex, and comorbidity

Weaknesses:

1. While patients are matched the clinical environment is very different on nights and weekends.

2. Nursing, monitoring, and the time to recognize and report cardiac arrest is not accounted for

3. Differences in availability of equipment or other support staff day to night is not accounted for

4. The authors conclusion that a 24 hour RRT team is required is not well supported by their data.

Proofreading:

1. Several items are misspelled in table 1: Defibrillation, endotracheal, Charlson, and intubation

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

No

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No
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