Reviewer’s report

Title: Prognostic Value of Point-of-Care Ultrasound during Cardiac Arrest: A Systematic Review

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Reviewer: Ciro Santoro

Reviewer's report:

The authors present an intriguing review on the values of cardiac motion assessed through point-of-care sonography to predict cardiac resuscitation in cardiac arrest patients. The review included fifteen clinical studies with a total of 2471 patients among all the study, evaluating whether cardiac activity assessment helped to stratify those patients who were keener to survive. The manuscript is well written in an engaging style. The author makes a significant contribution to the knowledge of management of patients in such hassle condition. The accessibility of the technique allowed a pre-hospitalization evaluation with a clear impact on the outcome assessment, in some of the studies analysed.

The report is complete but some minor questions need to be addressed:

1- The is no uniform definition of "cardiac movement" and even though it is a binary and simple assessment it could be of use to define this condition (e.g. as reported in some of the studies showed as: any detected motion within the heart including the atria, ventricles or valves).

2- The only case-control randomized trial where the effective impact on outcome of cardiac movement during resuscitation (Chardoli M, Heidari F, Rabiee H, Sharif-Alhoseini M, Shokoohi H, Rahimi-Movaghar V. Echocardiography integrated ACLS protocol versus conventional cardiopulmonary resuscitation in patients with pulseless electrical activity cardiac arrest. Chin J Traumatol. 2012;15(5):284-7) showed no significant differences in resuscitation results between the observed groups (whether the point-of-care echo was used or not). Thus, despite the evident negative predictive values of the technique there might be several inclusion biases that need to be considered in the discussion/limitations, that could impact in the effective practical use of the technique in daily practice. Please comment.

3- To increase awareness on the practical use of this approach the need of multicentric randomized case-control studies should be stressed in the conclusions.

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