

In Reference to, “A Focused Investigation of Expedited, Stack of Three Shocks Versus Chest Compressions First Followed by Single Shocks for Monitored Ventricular Fibrillation/Ventricular Tachycardia Cardiopulmonary Arrest in an In-Hospital Setting”

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Prometric, Inc., Seattle, Washington.

The study by Davis et al.¹ corroborates another recent study on deferred defibrillation in hospitals, which also showed poorer survival with the current American Heart Association/International Liaison Committee on Resuscitation deferred defibrillation guideline.² The guideline itself resulted not from consideration of the 3-phase model as the authors appear to suggest, but rather from belated recognition that the long hands-off periods required by automated external defibrillators (AEDs) for rhythm analysis significantly decrease shock success and survival. However, the guideline was also applied to manual defibrillation, with no discernable rationale.³

The poor results from deferred defibrillation in hospitals may be largely due to the fact that the great majority of defibrillations in that setting are manual. Deferring defibrillation to mitigate hands-off time is completely inappropriate with manual defibrillation; with a manual device, a shock can be delivered in less than 5 seconds if done correctly.

The present study supports the view that deferred defibrillation is ill advised and harmful with manual devices, particularly in hospitals. Distorting the guide-

line to cover manual devices has served to paper over a major shortcoming of AEDs vis-a-vis manual defibrillators and has likely caused unnecessary deaths. The guideline should be changed.

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The Authors Reply, “A Focused Investigation of Expedited, Stack of Three Shocks Versus Chest Compressions First Followed by Single Shocks for Monitored Ventricular Fibrillation/Ventricular Tachycardia Cardiopulmonary Arrest in an In-Hospital Setting”

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We appreciate the opportunity to continue dialogue regarding the optimal timing of defibrillation, standardized guidelines, and healthy skepticism as to whether they apply to all settings and patient populations. The transition to a single shock followed by resumption of chest compressions over 3 stacked shocks represents the integration of 2 concepts into a single algorithm.¹ The first reflects concern about delays in chest compressions

related to rhythm analysis and charge of an automated external defibrillator. This justified a single shock followed by chest compressions to avoid unnecessary pauses. The same guidelines also recommended 2 minutes of cardiopulmonary resuscitation (CPR) prior to the initial and each subsequent defibrillation attempt, providing substrate to the myocardium and increasing the likelihood of shock success.^{2–4} The underlying

physiological concept is described by Weisfeldt and Becker as part of their 3-phase model of ventricular fibrillation.^{2,5} Large randomized out-of-hospital studies have demonstrated that high-quality CPR may “prime” the heart before defibrillation, as suggested by the 3-phase model.^{6–8}

Regardless of the theoretical construct(s) upon which the original recommendations were based, we agree with Mr. Stewart that these are misapplied to the inpatient setting that allow for expeditious attempts at defibrillation and stacking of subsequent attempts.

Disclosure

Nothing to report.

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