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REGULAR FEATURE

Ujuzi (Practical Pearl/*Perle Pratique*)



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Ujuzi means skills in Swahili and is intended to be a regular feature for colleagues to share practical interventions, innovations and novelties that have proved useful in the management of patients in the prehospital environment or Emergency Centre. You can let Ujuzi know about your practical ideas by emailing practicalpearl@afjem.com.

Precharging the defibrillator during cardiopulmonary resuscitation

In cardiac arrest, it has been demonstrated that pauses in chest compressions are correlated with poorer outcomes,^{1–3} with one study demonstrating a decreased odds of survival with each additional 5-s pause.² Interruptions in chest compressions lead to cessation of blood flow to the coronary and cerebral circulation and require significant time to re-attain the flow rates approximating those immediately preceding the cessation.³ This has been hypothesized as one of the primary etiologies for the decreased survival rates seen in patients with prolonged pauses in chest compressions.³

One method to reduce the peri-shock pause is to precharge the defibrillator. Rather than pausing after each rhythm check to assess the rhythm and then charge the defibrillator, consider precharging the defibrillator 20-to-30 s prior to the pulse and rhythm check. As a result, the defibrillator will be immediately ready to provide the shock delivery if a “shockable rhythm” is identified. While the author is unaware of any studies directly assessing patient-relevant outcomes, one retrospective study demonstrated a 10-s decrease in the pre-shock pause with this technique.⁴

In the event that a non-shockable rhythm (e.g. asystole or pulseless electrical activity) is encountered, the defibrillator may be manually disarmed and then recharged preceding the next pulse and rhythm check. It is important to note that most defibrillators will only hold the charge for a limited time (less than 60 s). Therefore, the provider should precharge the

defibrillator close to the time of anticipated defibrillation. Additionally, this would not be applicable when using an automated external defibrillator. Furthermore, when charging during chest compressions, it is important to be cautious not to prematurely deliver the shock. Finally, as with all resuscitations, preparation is essential, so it is recommended to discuss this technique with the team prior to the actual resuscitation to reduce any confusion or apprehension among other team members.

In conclusion, precharging the defibrillator is a simple technique that shortens the time to defibrillation and decreases pre-shock pauses during cardiopulmonary resuscitation.

References

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