

開發多功能可電擊性心律不整急救訓練App(Mf_SA_App)，以提高實施心肺復甦術過程中，對美國心臟協會指南的依從性

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摘要

根據AHA life-support guidelines，包括心室顫動(VF)和室性心動過速(VT)在內的可電擊心律不整可以透過急救過程中正確的處置及用藥，來恢復足夠的心臟輸出量，以恢復到正常的竇性心律。急救過程中偏離指南推薦的藥物和程序與的可能性降低急救有關心臟驟停存活率。因此本教學團隊，預計開發多功能可電擊性心律不整急救訓練App (Mf_SA_App)，以提高年輕醫師實施心肺復甦術過程中，對美國心臟協會指南的依從性。與使用袖珍參考卡相比，基於Google Glass的PALS急救流程訓練，可顯著減少53%的除顫電擊劑量施予誤差率。然而，戴Google眼鏡時交互的複雜性，以及系統在整個急救過程中定位當前施救動作的局限性，以及它們體積小、不合時宜且耗時的在屏幕上的急救流程中來回導航，是使用Google Glass指導培訓的主要限制。因此本教學團隊，預計研發基於平板電腦的多功能培訓App將在更大的屏幕尺寸上顯示AHA指南的整個並以患者為中心的急救流程。在現實臨床生活中，急救訓練和實際急救運用之間的問題可能是幾個月。在遇到真實臨床情況之前，定期透過APP進行自主ACLS培訓，預期達到準備和保證復甦質量的目的。

我們預計具有指導、培訓AHA指南、記錄、反饋和評估多步驟復甦技能評估的功能的ACLS mobile app，將透過縮短第一次和後續除顫電擊嘗試的時間、減少急救藥物和除顫電擊劑量給予的錯誤，以提高實施心肺復甦術過程中，對美國心臟協會AHA life-support guidelines指南的遵守度。

關鍵詞:可電擊心律不整、AHA 生命支持指南、急救藥物和除顫劑量誤差、多步驟復甦技能評估

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Abstract

The shockable arrhythmia including ventricular fibrillation (VF) and ventricular tachycardia (VT) can potentially revert to normal sinus rhythm with the restoration of adequate cardiac pump function according to the AHA life-support guidelines.

Deviation from guidelines recommended medication and procedures are associated with a reduced likelihood of survival from cardiac arrest. So, lots of guiding App had been developed to train junior physicians.

It had been reported that in Google Glass-based training of PALS algorithms significantly reduce errors and deviations in defibrillation doses by 53% when compared to the use of pocket reference cards. However, the complexity of interacting while wearing glasses, as well as the limits of the system to situate the current action in the whole resuscitation process and their small size, inopportune and time-consuming back-and-forth navigations throughout the algorithms on screen of google glasses were major limitations to use glasses-guide trainings. Our newly tablet-based multifunction training App will display the entire algorithm of AHA guidelines and speed up skills on the larger screen size and paralleling stepwise patient-centered care guidance of shockable arrhythmia CPR. In real life, the interval between training and actual use would probably be months. Self-directed ACLS training with the app regularly before the encountering real clinical condition will achieve the purpose of preparation and ensuring resuscitation quality.

We expected that the ACLS-based mobile app will support trainees by achieving a shorter time to first and subsequent defibrillation attempts, fewer medication and defibrillation dose errors, as well as a better adherence to AHA recommendations. The App will have the function of guiding, training AHA guidelines, recording, feedback, and assess the multiple-step resuscitative skills assessment.

Keywords: shockable arrhythmia 、AHA life-support guidelines 、 medication and defibrillation dose errors 、 multiple-step resuscitative skills assessment