機械的CPRは用手的CPRと比較し利点がない (Abstract 22737)

PARAMEDIC：機械的CPR装置は用手的胸骨圧迫と比較し生存率を改善しない

PARAMEDIC: Mechanical CPR device does not improve survival compared to manual chest compressions

院外で心停止を来した患者に蘇生を行う際に、機械的装置を用いた持続的な胸骨圧迫が用手的胸骨圧迫よりも生存率を改善することはないとのlate-breaking resuscitation researchの結果が2014年American Heart Association年次集会で発表され、同時に*Lancet*に掲載された。このPARAMEDIC（pre-hospital randomized assessment of a mechanical compression device in cardiac arrest）トライアルでは、院外で非外傷性心停止を経験し、用手的胸骨圧迫または軽量携帯型電動式装置LUCAS-2を介した胸骨圧迫を受ける群にランダム割り付けられた患者の30日生存率を比較した。スタディの結果、英国の4つの救急サービスにより治療を受け、組み入れ条件に合致した患者4,471人（1,652人はLUCAS-2、2,819人は用手的胸骨圧迫）において、30日生存率は機械的群（6.3%）および手動的群（6.9%）とで同等であることが示された。もう1つの所見として、LUCAS-2は、脈拍および呼吸が再開したか、またはイベント後の脳機能が自立して生活できる程度に良好である患者が病院に到着するまで生存する割合を上昇させなかった。これらの結果に基づき、研究者らは用手的胸骨圧迫の代替法としてLUCAS-2を日常的に使用することを推奨していない。

Full Text

Using mechanical devices to perform consistent chest compressions during resuscitation efforts does not improve survival compared to manual chest compressions in people who have a cardiac arrest outside of a hospital, according to late-breaking resuscitation research presented at the American Heart Association's Scientific Sessions 2014 and simultaneously published in *Lancet*.

Using mechanical devices could overcome problems such as differing levels of skill among rescuers and deteriorating quality of compressions as fatigue sets in. However, until this study there had been little evidence of whether or not the devices are effective in saving lives.

The pre-hospital randomized assessment of a mechanical compression device in cardiac arrest (PARAMEDIC) trial compared 30-day survival rates in patients who experienced non-trauma-related cardiac arrest outside of a hospital and were randomly assigned to receive manual chest compressions or compressions delivered via the LUCAS-2, a lightweight, portable, electrically-powered device.

The primary outcome was survival at 30 days following cardiac arrest and was analyzed by intention to treat. Ambulance dispatch staff and those collecting the primary outcome were masked to treatment allocation. Masking of the ambulance staff who delivered the interventions and reported initial response to treatment was not possible.

The study found that 30-day survival was similar after mechanical (6.3 percent) and manual (6.9 percent) compressions among 4,471 eligible patients treated by four ambulance services in the United Kingdom (1,652 randomized to LUCAS-2 and 2,819 to manual compressions).

In secondary findings, LUCAS-2 did not improve the percentage of patients who survived to reach the hospital (22.8 percent LUCAS-2 vs. 23.3 percent manual), in whom pulse and breathing was restored (31.6 percent LUCAS-2 vs. 31.4 percent manual), and whose brain function after the event was good enough to allow them to live independently (4.7 percent LUCAS-2 vs. 6.0 percent manual).

"On the basis of ours and other recent randomized trials . . . the evidence available suggests this does not improve survival," lead author Dr. Gavin D. Perkins, Warwick Clinical Trials Unit, University of Warwick, Coventry, UK, concluded. However, Dr. Perkins noted that use of a mechanical CPR device retains practical advantages such as safety and quality of CPR in the back of a moving vehicle and when transferring a patient to the emergency department.

Based on these results, the researchers do not recommend the routine use of LUCAS-2 as a substitute for manual chest compression.

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