



## ROSC and neurological outcome after LUCAS-CPR for in-hospital cardiac arrest

Pieterjan Durnez, M.D. and Willem Stockman, M.D.  
Department of Anesthesia, Critical Care and Emergency Medicine  
Heilig Hartziekenhuis Roeselare-Menen, Belgium



### Introduction :

LUCAS, a new device for mechanical CPR, was recently introduced in our hospital for in-hospital CPR. We report the incidence of ROSC and the neurological outcome for our first 35 patients.

### Methods :

From February until June 2006, LUCAS-CPR was used for all cases of adult in-hospital arrest, after arrival of the in-hospital emergency team. The Glasgow Coma Scale (GCS) was used for neurological outcome 24 hours after discontinuing sedative drugs. Outcome at 3 months was determined by the Cerebral Performance Categories<sup>1</sup> (CPC). Results are presented as means +/- standard deviation.



### Results :

Thirty-five patients received in-hospital LUCAS-CPR. Thirteen were female. The mean age was 72.6 (+/-10,6). The location of arrest was a monitored department in 16 (45,7%) cases (ED, CCU, ICU) and a general ward in 19 (54,3%).

All but one arrest were witnessed.

The mean duration of manual closed-chest compression before LUCAS-CPR was 6.63 min (+/- 4.91).

First rhythm was asystoly in 8 patients (22,8%), PEA in 19 (54,3%) and VT/VF in 8 cases (22,8%).

### Cerebral Performance Categories (CPC)<sup>1</sup>

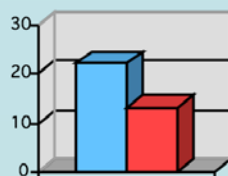
CPC 1 : Good cerebral performance

CPC 2 : Moderate cerebral disability

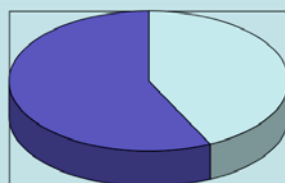
CPC 3 : Severe cerebral disability

CPC 4 : Coma/vegetative status

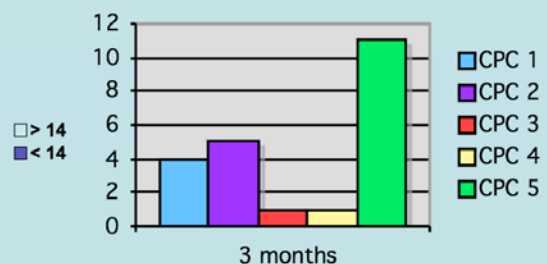
CPC 5 : Brain death or death



ROSC was obtained in 22 of 35 patients. (62,9%)



The GCS 24 hours after discontinuing sedative drugs was favourable (14 or 15/15) in 15 cases (42,8%).



The CPC at 3 months revealed a CPC of 1 in 4 (11,4%) and of 2 in 5 patients (14,3%). One patient had a CPC of 3 and one a CPC of 4.

### Conclusion :

LUCAS-CPR is a good alternative for manual closed-chest compression in patients with in-hospital cardiac arrest. ROSC ratio (62.9%) and early neurological outcome determined by the GCS (42.8%) are high. Long-term follow up by CPC revealed a good outcome (CPC 1 or 2) in 25.7%.

### References :

1. The Brain Resuscitation Clinical Trial II Study Group. A randomized clinical trial of calcium entry blocker administration to comatose survivors of cardiac arrest: design, methods, and patient characteristics. Control Clinical Trials 1991; 12: 525-45