



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



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### 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 neurologic outcome for 70 patients.

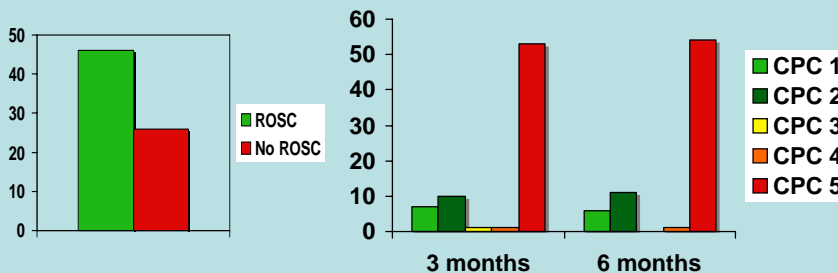
### Methods:

From February 2006 on, we intended to use LUCAS-CPR for all cases of adult in-hospital arrest, after arrival of the in-hospital emergency team. The Glasgow Coma Scale (GCS) was used to determine neurological outcome 24 hours after discontinuing sedative drugs. Outcome at 3 and 6 months was determined by the Cerebral Performance Categories (CPC) (1).



### Results:

Seventy-two patients received in-hospital LUCAS-CPR. The mean age was 71.46 (SD +/- 11.9). The location of arrest was a monitored ward in 28 cases (ED, CCU, ICU) and a general ward in 44. All but three arrests were witnessed. Because of obesity, LUCAS-CPR could not be initiated in 3 patients. First rhythm was asystole in 15 patients (20,8%), PEA in 40 (55,5 %) and VT/VF in 17 cases (23,6%). ROSC was obtained in 46 of 72 patients (63,8%). The GCS was favourable (14 or 15/15) in 25 cases (34,7%). The CPC at 3 months revealed a CPC of 1 in 7 (9,7%) and of 2 in 10 patients (13,9%). One patient had a CPC of 3 and 1 a CPC of 4. The CPC at 6 months was slightly different. One patient with a CPC of 1 died, one patient with a CPC of 3 changed to a CPC of 2 after revalidation and finally one with a CPC of 3 died.



### Cerebral Performance Categories (CPC) (1)

- 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 46 of 72 patients

When ROSC, the CPC at 3 and 6 months was favourable (1 or 2) in 17 patients (23,6%)

### Conclusion:

LUCAS-CPR is a good alternative for manual closed-chest compression in patients with in-hospital cardiac arrest. ROSC ratio (63,8%) and early neurologic outcome determined by the GCS (34,7%) are high. Long-term follow up by CPC revealed a good outcome (CPC 1 or 2) in 23,6%.

### References

- 1.The Brain Resuscitation Clinical Trial II Study Group. A randomized clinical trial of calcium entry blocker administration to comatous survivors of cardiac arrest: design, methods, and patient characteristics. Control Clin. Trials 1991; 12: 525-9