



Epinephrine for in-hospital LUCAS-CPR: a predictor of outcome?

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Introduction

The role of epinephrine in cardiac arrest remains debated. We compare the doses of epinephrine administered in patients with good versus bad neurological outcome after in-hospital LUCAS-CPR.

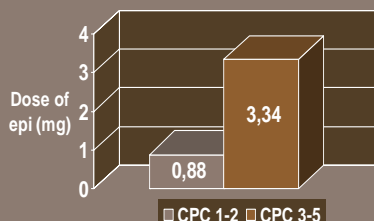
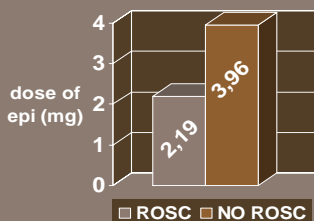
Methods

From February 2006 until June 2007, LUCAS-CPR was used for all cases of adult in-hospital arrest, after arrival of the in-hospital emergency team. Outcome parameters such as ROSC, Cerebral Performance Categories (CPC)¹ at 6 months and administered doses of epinephrine were recorded. CPC 1 or 2 at 6 months are considered good outcome. Epinephrine was administered per milligram to all patients during CPR every 3 to 5 minutes according to the guidelines 2005² and at the discretion of the attending physician. Results are presented as mean and inter quartile ranges (IQR). The Mann-Whitney test was used for statistical analysis.



Results

72 patients received in hospital LUCAS-CPR. The mean age was 71.46 (SD +/- 11.9). In 2 patients (one with and one without ROSC), the dose of epinephrine remains unknown. The 45 patients with ROSC received 2.19mg of epinephrine (IQR 0-3). In the 25 patients with no ROSC, the dose was 3.96 mg (IQR 2-5) (P=0.01). In the patients with CPC 1 (6 patients) and 2 (11 patients) at 6 months, the dose of epi was 0.33 mg (IQR 0-0.75) and 1.18 mg (IQR 0.5-1.5). Only one of these patients, who was resuscitated for an extended period as a bridge to cardiopulmonary bypass, received more than 2 mg of epinephrine (4 mg). In the 55 patients with CPC 3,4 or 5 at 6 months, the dose of epi was 3.44mg (IQR 1-5). The difference in epinephrine in patients with CPC ≤ 2 versus ≥3 is highly significant at p<0.01.



Cerebral Performance Categories (CPC)

- 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

Conclusion

The total dose of epinephrine during LUCAS-CPR is inversely related to long term neurological outcome. Except for one patient, no good outcome was achieved in patients who needed more than 2 mg of epinephrine during in hospital LUCAS-CPR.

- References** : 1. A randomized clinical trial of calcium entry blocker administration to comatose survivors of cardiac arrest: Design, methods and patient characteristics. The Brain Resuscitation Clinical Trial II Study Group. Control Clin Trials 1991 Aug;12(4):525-45.
2. European Resuscitation Council Guidelines for Resuscitation 2005; Resuscitation (2005) 67S: S47