Category :**Cardiovascular: cardiac arrest\CPR**

A110 - ***Long-term survival and neurological outcome of adult patients with cardiac arrest treated with extracorporeal versus conventional cpr: a systematic review and meta-analysis.***

L Bambini [1] ; L Mascia [2] ; E Maietti [2] ; M Bordini [1] ; I Cavalli [1] ; G Pizzilli [3] ; P Rucci [2] ; VM Ranieri [1] ; T Tonetti [1]

[1]Alma Mater Studiorum University of Bologna, Department of Medical and Surgical Sciences, Bologna, Italy, [2]Alma Mater Studiorum University of Bologna, Department of Biomedical and Neuromotor Sciences , Bologna, Italy, [3]Sant'Orsola-Malpighi Hospital, Department of Anesthesia and General Intensive Care Unit, Bologna, Italy

Introduction:

Long-term survival and good neurological outcome after cardiac arrest remain low [1]. International resuscitation guidelines suggest that extracorporeal cardiopulmonary resuscitation (ECPR) may play a role in improving survival and rate of favorable neurological outcome (identified as Cerebral Performance Categories or CPC score = 1-2) [2], but there are still uncertainties about the precise benefit size. We designed a systematic review and meta-analysis aiming to evaluate whether long-term survival and long-term neurological outcome are better in adult patients with cardiac arrest treated with ECPR compared to those treated with conventional CPR (CCPR).

Methods:

We performed a literature search on Pubmed of all ECPR trials published between 2005 and 2019. Only trials with a control group treated with CCPR were considered eligible. Eighteen out of 1238 examined studies were included. All data about survival and neurological outcome at 1 months, 6 months, 1 year and 2 years from cardiac arrest were extracted from each study. We performed separate meta-analyses for studies with matched and unmatched data for each outcome and time point.

Results:

ECPR was shown to improve survival at 1 month (RR=0.83, CI 95%: 0.73 – 0.94), at 6 months (RR=0.81, CI 95%: 0.70 – 0.93) and at 1 year from cardiac arrest (RR=0.87, CI 95%: 0.78 – 0.97). We also found an association between ECPR implementation and favorable neurological outcome (CPC score= 1-2) at 1 month (RR=0.89, CI 95%: 0.85 – 0.93) and 6 months (RR=0.89, CI 95%: 0.81 – 0.97) from cardiac arrest (Figure).

Conclusion:

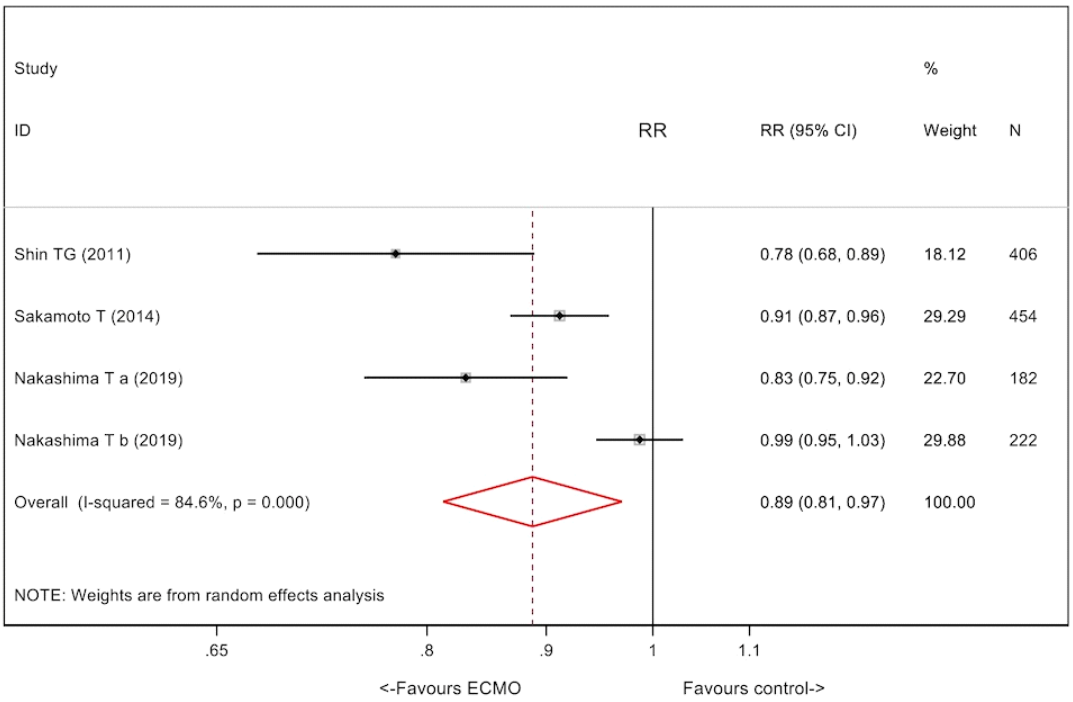
ECPR is an advanced treatment that appears to be associated with increased long-term survival and long-term favorable neurological outcome (identified as CPC score = 1-2). To our knowledge, this systematic review and meta-analysis is the first to analyze long-term survival and neurological outcome after ECPR.

References:

[1] E. J. Benjamin *et al. Circulation* 137/12: E67–E492, 2018

[2] W. B. Kratzert *et al. J. Cardiothorac. Vasc. Anesth.* 34/5:1195–1197, 2020

Image :



CPC score at 6 months