

# INPLASY PROTOCOL

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**Conflicts of interest:**  
None declared.

## Efficacy and safety of corticosteroid therapy for in-hospital cardiac arrest: a meta-analysis of randomized controlled trials

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**Review question / Objective:** To investigate the effect of steroid administration during cardiac arrest and the outcomes of resuscitation.

**Condition being studied:** The clinical benefits of steroid administration during cardiac arrest remain unclear. Several studies reported that patients who received steroids after achieving a return of spontaneous circulation (ROSC) had better outcomes, but few studies have investigated the benefits of steroid administration during resuscitation. We hypothesized that administration of steroid during cardiac arrest would be associated with better clinical outcomes in adults with cardiac arrest.

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 06 December 2022 and was last updated on 06 December 2022 (registration number INPLASY2022120026).

### INTRODUCTION

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## METHODS

**Participant or population:** We included studies of participants older than 18 years of age who experienced cardiac arrest and included at least one arm that received corticosteroids during cardiac arrest.

**Intervention:** Steroid administration.

**Comparator:** Placebo.

**Study designs to be included:** RCTs.

**Eligibility criteria:** The selection criteria were: (1) Inclusion of adults  $\geq 18$  years of age with cardiac arrest, regardless of initial presenting rhythm and location (i.e., inpatient or out-of-hospital); (2) At least one arm having received a corticosteroid during cardiac arrest; (3) Reporting of one of the following, sustained ROSC defined as not requiring CPR for a consecutive 15 min or 20 min or longer, survival at hospital admission, survival at hospital discharge, and neurological outcome at discharge.

**Information sources:** Two researchers (Zhang and Tuo) independently searched the PubMed, EMBASE and China National Knowledge Internet (CNKI) databases from inception to 1 December Dec. 2022 by using medical subject headings (MeSH), Emtree, and text word with no language limitations.

**Main outcome(s):** Overall survival rate at hospital discharge, rate of sustained ROSC, adverse events and favorable neurological outcomes at hospital discharge.

**Quality assessment / Risk of bias analysis:** The quality of all trials was evaluated independently by two authors according to the Cochrane quality criteria. Any disagreement between the authors was settled by discussion with a third author.

**Strategy of data synthesis:** STATA 16.0 (Stata Corp LP, College Station, TX, USA) was used to perform statistical analyses. Labbe plots and meta-regression were

used for intuitive judgement of heterogeneity. For the remaining circumstances, a random effect model was used to pool the effect size to calculate statistical heterogeneity. Heterogeneity was analysed by  $I^2$  and  $\chi^2$  statistics. If there was significant heterogeneity, a L'Abbe plot and Galbraith plot were conducted to evaluate the consistency and quality of the results.

**Subgroup analysis:** Sensitivity analysis, subgroup analysis and meta-regression were performed to determine sources of heterogeneity. Publication bias was evaluated using Begg's and Egger's tests and funnel plots.

**Sensitivity analysis:** Sensitivity analysis, subgroup analysis and meta-regression were performed to determine sources of heterogeneity. Publication bias was evaluated using Begg's and Egger's tests and funnel plots.

**Country(ies) involved:** China (Jianli People's Hospital).

**Keywords:** Drug-coated balloon; Common balloon angioplasty; Arteriovenous fistula; Stenosis; End-stage renal disease; All-cause mortality; Meta-analysis.

### Contributions of each author:

Author 1 - Fa-Wei Zhou.

Author 2 - Chang Liu.

Author 3 - De-Zhong Li.

Author 4 - Yong Zhang.

Author 5 - Fa-Chun Zhou.