

Infrared pupillometry to help predict neurological outcome for patients achieving return of spontaneous circulation (ROSC) following cardiac arrest: systematic review

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Citation

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Review question

Can infrared pupillometry help predict neurological outcome in patients who achieve return of spontaneous circulation (ROSC) following cardiac arrest.

Searches

We will search the following electronic bibliographic databases: MEDLINE, EMBASE, CINAHL and The Cochrane Library (Cochrane Database of Systematic Reviews, Cochrane Central Register of Controlled Trials (CENTRAL), Cochrane Methodology Register).

Types of study to be included

Retrospective studies, Prospective cohort studies, Randomised controlled trials, Systematic reviews.

Condition or domain being studied

Neurological outcome in patients achieving return of spontaneous circulation following cardiac arrest.

Participants/population

Adults over 18 years of age.

Intervention(s), exposure(s)

Inclusion criteria:

Cardiac arrest in adults over 18 years of age

Use of infrared pupillometry performed within 24 hours of ROSC

Neurological outcome

Exclusion criteria:

Case reports

Paediatric studies

Studies including pregnant women

Non English studies

Cardiac arrest of non cardiac aetiology.

Comparator(s)/control

Patients who had no such intervention or use of the current prognostication guidance will form the control group.

Context

PROSPERO

International prospective register of systematic reviews

Main outcome(s)

Ability to predict neurological outcome using infrared pupillometry as a quantitative tool.

Timing and effect measures

Within 24 hours of presentation to hospital: Emergency department or ITU

The impact of targeted temperature management on ICU stays.

Additional outcome(s)

Prediction of survival.

Prediction of ROSC.

Data extraction (selection and coding)

- A search strategist will run searches on above mentioned databases using key words.

- 2 reviewers will independently review the abstracts, include all the papers agreed on.

- If different views on certain papers, an opinion will be sought from a third reviewer

Data to be extracted:

- Outcome of cardiac arrest
- Neurological outcome
- Survival at discharge
- Number of days on ITU
- Quantitative value of infrared pupillometry.

Risk of bias (quality) assessment

For RCT we will use the Cochrane ROB tool.

For non RCTs - ROBINS-I tool.

Strategy for data synthesis

We will use Grades of Recommendation, Assessment, Development and Evaluation (GRADE) system for analysis of selected studies.

Results will be stored in HDAS (Healthcare Database Advanced Search)

We will use Cochrane template for data extraction.

Analysis of subgroups or subsets

None at this point, will be reviewed if need be.

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Anticipated or actual start date

01 January 2019

Anticipated completion date

30 June 2019

Funding sources/sponsors

None.

Conflicts of interest**Language**

English

Country

England

Stage of review

Review_Ongoing

Subject index terms status

Subject indexing assigned by CRD

Subject index terms

Cardiopulmonary Resuscitation; Heart Arrest; Humans

Date of registration in PROSPERO

13 December 2018

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Details of any existing review of the same topic by the same authors**Stage of review at time of this submission**

Stage	Started	Completed
Preliminary searches	Yes	Yes
Piloting of the study selection process	No	No
Formal screening of search results against eligibility criteria	No	No
Data extraction	No	No
Risk of bias (quality) assessment	No	No
Data analysis	No	No

Versions

13 December 2018

PROSPERO

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