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

Alex Monk, Shashank Patill, Lisa Ramage, Leanne Eveson

Citation

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
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.

Contact details for further information
Dr Shashank Patil
shashank.patil@chelwest.nhs.uk

Organisational affiliation of the review
Chelsea and Westminster NHS Foundation Trust
http://www.chelwest.nhs.uk/

Review team members and their organisational affiliations
Dr Alex Monk. Chelsea and Westminster NHS Foundation Trust
Anticipated or actual start date
01 January 2019

Anticipated completion date
30 June 2019

Funding sources/sponsors
None.

Conflicts of interest

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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

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Versions
13 December 2018

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