

Non-invasive measurement of cerebral energy status: an opportunity to target neuroprotection in brain injury

Submission date

12/05/2010

Recruitment status

No longer recruiting

☐ Prospectively registered

☐ Protocol

Registration date

12/05/2010

Overall study status

Completed

☐ Statistical analysis plan

☒ Results

Last Edited

12/05/2010

Condition category

Injury, Occupational Diseases, Poisoning

☐ Individual participant data

Plain English summary of protocol

Not provided at time of registration

Contact information

Type(s)

Scientific

Contact name

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Additional identifiers

Protocol serial number

5789

Study information

Scientific Title**Acronym**

Non-invasive measurement of cerebral energy status

Study objectives

We will use a combination of near infrared spectroscopy systems to assess non-invasively cerebral oxygenation, perfusion and cellular metabolic status in healthy volunteers and critically brain injured adults in order to monitor and quantify cerebral ischaemia in the latter. Specifically we will non-invasively measure changes in cell energy status by monitoring concentration changes in cytochrome oxidase (ox-CCO) using a novel hybrid optical spectroscopy system optimised for the measurement of ox-CCO in adults.

Ethics approval required

Old ethics approval format

Ethics approval(s)

MREC approved (ref: 04/Q0512/67)

Primary study design

Observational

Study design

Single centre non-randomised process of care trial

Study type(s)

Quality of life

Health condition(s) or problem(s) studied

Topic: Neurological; Subtopic: Neurological (all Subtopics); Disease: Nervous system disorders

Interventions

Volunteer studies: Hyperoxia, hypoxia, hypercapnea and hypocapnea

Patient studies: NIRS-derived changes in cerebral oxygenation, haemodynamics and oxidised cytochrome c oxidase concentrations, and cerebral microdialysis-derived markers of ischaemia (lactate:pyruvate ratio and glucose).

Study entry: registration only

Intervention Type

Other

Phase

Not Applicable

Primary outcome(s)

Infrared specotrscopy

Key secondary outcome(s)

Estimated cerebal oxygen delivery

Completion date

31/12/2011

Eligibility

Key inclusion criteria

1. Healthy volunteers and patients with severe traumatic brain injury
2. Male and female, lower age limit of 18 years

Participant type(s)

Healthy volunteer

Healthy volunteers allowed

No

Age group

Adult

Lower age limit

18 Years

Sex

Key exclusion criteria

Not provided at time of registration

Date of first enrolment

01/01/2006

Date of final enrolment

31/12/2011

Locations

Countries of recruitment

United Kingdom

England

Study participating centre

National Hospital for Neurology & Neurosurgery

London

United Kingdom

WC1N 3BG

Sponsor information

Organisation

University College London Hospitals NHS Foundation Trust (UK)

ROR

<https://ror.org/042fqyp44>

Funder(s)

Funder type

Research council

Funder Name

Engineering and Physical Sciences Research Council (EPSRC) (UK)

Alternative Name(s)

UKRI Engineering and Physical Sciences Research Council, Engineering and Physical Sciences Research Council - UKRI, Engineering & Physical Sciences Research Council, Science Research Council, Science and Engineering Research Council, EPSRC, SRC, SERC

Funding Body Type

Government organisation

Funding Body Subtype

National government

Location

United Kingdom

Funder Name

Medical Research Council (MRC) (UK)

Alternative Name(s)

Medical Research Council (United Kingdom), UK Medical Research Council, Medical Research Committee and Advisory Council, MRC

Funding Body Type

Government organisation

Funding Body Subtype

National government

Location

United Kingdom

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	01/03/2008		Yes	No