Cortical networks and visuomotor abilities in primary brain tumor patients (CANVAS)

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In this project, we focus on the cortical network (connectome) involved in visuomotor control. The projects aims to:- Map out higher order visual and motor functions in primary brain tumour patients. - Explain variability in performance on the basis...

Ethical review	Approved WMO
Status	Recruiting
Health condition type	Nervous system neoplasms malignant and unspecified NEC
Study type	Observational invasive

Summary

ID

NL-OMON52933

Source
ToetsingOnline

Brief title
Cortical networks and visuomotor abilities in brain tumours

Condition

- Nervous system neoplasms malignant and unspecified NEC

Synonym
brain tumour

Research involving
Human

Sponsors and support

Primary sponsor: Universitair Medisch Centrum Utrecht
Source(s) of monetary or material Support: Ministerie van OC&W

Intervention

Keyword: brain tumor, connectivity, visuomotor

Outcome measures

Primary outcome

- Performance on visuomotor tasks

- Connectivity parameters from DTI and MRI

Secondary outcome

• Tumor histology

• Performance on neuropsychological tests that tap into different cognitive

abilities such as memory, attention or emotion.

Study description

Background summary

Neurocognitive functioning has become an important outcome measure in the treatment of brain tumours in order to uphold quality of life as much as possible. However, cognitive outcome is diverse and difficult to explain on the basis of tumour location alone. Complaints can be a consequence of tumour infiltration or displacement of brain structures (mass effect) and depend on the growth rate and character of the tumour tissue. It is increasingly recognized that brain tumours can induce both local and widespread dysfunction of brain networks, and symptoms are the result of both.
From literature and clinical practice there are indications of impairments in higher-order visual and motor functions in a large proportion of patients, but this received little attention so far. This project aims to evaluate functioning in this domain and to explain variability in cognitive outcome pre- and post tumour surgery using structural and functional brain connectivity measures.

Study objective

In this project, we focus on the cortical network (connectome) involved in visuomotor control. The projects aims to:
- Map out higher order visual and motor functions in primary brain tumour

patients.
- Explain variability in performance on the basis of structural and functional brain connectivity pre- and post tumor surgery.

Study design

Study design: monocenter cohort study.
Methods: Participation entails visual and visuomotor test battery (1.5 hours) added to the standard neuropsychological assessment pre- and postoperatively. In addition, we ask permission to use clinical data from the neuropsychological assessment , MRI scan and neurological correspondence regarding diagnosis and medical history.

Study burden and risks

The proposed project has no known health risks. Participants may experience discomfort during the MRI session or neuropsychological examination, which will be carefully monitored. Participation offers no direct benefit for patients.

The information acquired by this research project will improve our understanding of the effects of a brain tumour on (visuomotor) outcome and can be utilized to predict outcome in the future.

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)
Elderly (65 years and older)

Inclusion criteria

1) Age 18 - 80 years;
2) Dutch speaking.
3) Pre-operative radiological working diagnosis of primary brain tumour, with a clinical indication for (awake) resective surgery; and/or demonstrable or subjective visual impairments due to suspected brain damage (e.g. head injury, epilepsy)

Exclusion criteria

1) Contra-indication for 3T MRI scanning;
2) Previous brain tumour treatment (i.e. resective brain surgery/ cranial irradiation /chemotherapy);
3) History of stroke, traumatic brain injury or any other neurological diagnosis that is known to affect cognition;
4) Co-morbid psychiatric disorder strongly interfering with cognitive functioning (e.g. schizophrenia).

Study design

Design

Study type: Observational invasive

Masking:	Open (masking not used)
Control:	Uncontrolled
Primary purpose:	Basic science

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	25-02-2020
Enrollment:	60
Type:	Actual

Ethics review

Approved WMO Date:	01-08-2019
Application type:	First submission
Review commission:	METC NedMec
Approved WMO Date:	02-08-2022
Application type:	Amendment
Review commission:	METC NedMec

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
CCMO	NL66023.041.18