Language and EEG characteristics in brain tumour patients

No registrations found.

Ethical review	Positive opinion
Status	Recruiting
Health condition type	-
Study type	Observational non invasive

Summary

ID

NL-OMON28627

Source
Nationaal Trial Register

Brief title
PLOTS (Predicting Language Outcome after brain Tumour Surgery)

Health condition

Brain tumours: low-grade gliomas and meningiomas

Sponsors and support

Primary sponsor: Center for Language and Cognition Groningen, Faculty of Arts, Rijksuniversiteit Groningen
Source(s) of monetary or material Support: Center for Language and Cognition Groningen, Faculty of Arts, Rijksuniversiteit Groningen

Intervention

Outcome measures

Primary outcome

- Language abilities of low-grade glioma and meningioma patients before surgery, shortly after surgery, and at the long-term follow-up.

- The relation between language functioning and resting-state EEG characteristics in brain tumour patients.

- Pre-operative EEG characteristics that predict language outcome after brain tumour surgery.

Secondary outcome

- Functional network characteristics of resting-state brain activity that are associated with specific linguistic deficits.

- Associations between language and performance in other cognitive domains.

- The relation between the severity of the language disorder and the quality of life in brain tumour patients before and after surgery.

Study description

Background summary

Brain tumours can cause language deficits that affect the quality of life. These language deficits do not always recover after brain tumour surgery. Previous studies related slow-wave brain activity and neural network characteristics to cognitive functioning in brain tumour patients, but the relation between brain activity and functional networks on one hand and language functioning on the other has not been investigated yet. The current study aims to find predictors for language outcome after surgery of a low-grade glioma or meningioma, by using resting-state electroencephalography (EEG). This will aid patient counselling and suitable language intervention can start earlier. Furthermore, the outcomes can have implications for and the application of sensitive intra-operative language tests in order to avoid even minor language problems. This is essential for the preservation of the quality of life in brain tumour patients as their survival rate after surgery is relatively long.

Patients will be recruited at two medical centers in the Netherlands: the University Medical Center Groningen (UMCG) and the Erasmus MC University Medical Center Rotterdam (EMC).

Study objective

Objectives:

- Investigating the relation between language functioning and resting-state EEG (slow-wave brain activity and functional network characteristics) in brain tumour patients.

- Predicting language outcome after brain tumour surgery, on the basis of pre-operative EEG characteristics.

We expect that slow-wave brain activity and functional network characteristics are associated with language functioning in brain tumour patients. Furthermore, we hypothesize that these EEG characteristics can predict language outcome after brain tumour surgery. The outcomes can improve the procedure in and around brain tumour surgery to avoid even minor language problems. This is important, because the ability to use language is crucial for participation in society and the quality of life.

Study design

- Patient groups: before surgery, 1.5-3 months after and 1 year after surgery

- Control group: once

Intervention

NA; this is a longitudinal observational study. No intervention is applied by the researchers, only assessments.

- The patient groups will get an EEG recording, language assessment, a few neuropsychological tests, and questionnaires before surgery. The language assessment, neuropsychological tests, and questionnaires will be repeated twice after surgery: 1.5-3 months and 1 year post-operatively.

- The control group will be assessed with an EEG recording, a spontaneous speech interview and a questionnaire.

Contacts

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Eligibility criteria

Inclusion criteria

Low-grade glioma group:

- Diagnosis of a presumed low-grade glioma in the language dominant hemisphere

- Tumour is untreated, planned to undergo awake brain surgery

- In case of epilepsy, seizures under control with anti-epileptic drugs (less than 6 seizures in the previous year and on anti-epileptic monotherapy or polytherapy)

- Between 18 and 75 years old

Low-grade meningioma group:
- Diagnosis of a presumed low-grade supratentorial meningioma in the language dominant hemisphere
- Tumour is untreated, planned to undergo brain surgery
- In case of epilepsy, seizures under control with anti-epileptic drugs (less than 6 seizures in the previous year and on anti-epileptic monotherapy or polytherapy)
- Between 18 and 75 years old

Control group without brain injury:
Comparable to the patient groups with respect to age, gender and education
- Right-handed
- Between 18 and 75 years old

Exclusion criteria

For all 3 groups:

- Non-native speaker of Dutch or insufficient command of the Dutch language

- History of a medical, neurological or psychiatric condition known to affect language or cognitive functioning

- (History of) substance abuse

- Use of medication known to influence EEG, language or cognitive functioning, other than antiepileptic drugs

- Previous brain surgery or radiation therapy

Study design

Design

Study type:	Observational non invasive
Intervention model:	Other

Control: N/A , unknown

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	10-07-2016
Enrollment:	90
Type:	Anticipated

Ethics review

Positive opinion

Date:	25-04-2016
Application type:	First submission

Study registrations

Followed up by the following (possibly more current) registration

ID: 46261
Bron: ToetsingOnline
Titel:

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

No registrations found.

In other registers

Register	ID
NTR-new	NL5489
NTR-old	NTR5811
CCMO	NL56362.042.16
OMON	NL-OMON46261

Study results

Summary results
NA