Brain activation during sentence processing in Parkinson's disease: an event related functional magnetic resonance imaging study

	Prospectively registered
No longer recruiting	Protocol
Overall study status	Statistical analysis plan
Completed	Results
Condition category	Individual participant data
Nervous System Diseases	Record updated in last year
	Completed Condition category

Plain English summary of protocol

Not provided at time of registration

Contact information

Type(s)

Scientific

Contact name

Dr K Colman

Contact details

Oude Kijk int Jatstraat 26 Groningen Netherlands 9712 EK +31 (0)50 363 8135 k.s.f.colman@rug.nl

Additional identifiers

Protocol serial number NTR782

Study information

Scientific Title

Study objectives

We hypothesise that basal ganglia (BG) are involved in sentence processing whenever a sentence structure deviates from the predicted structure and this in order to inhibit the irrelevant structure and to switch to a revision process.

Ethics approval required

Old ethics approval format

Ethics approval(s)

Not provided at time of registration

Study design

Observational case-control study

Primary study design

Observational

Study type(s)

Screening

Health condition(s) or problem(s) studied

Parkinson's disease

Interventions

No interventions. It is observational research with the use of functional magnetic resonance imaging (fMRI) (no use of invasive techniques).

Intervention Type

Other

Phase

Not Specified

Primary outcome(s)

For the fMRI analysis data, a main effect of group is expected. The level of activation in the BG will be reduced in the PD patient group compared to the healthy control group. For the within subject factors we expect to find a main effect of grammaticality. In the healthy elderly subject group, we expect that the processing of the grammatically incorrect sentences will activate the BG more compared to the processing of the grammatically correct sentences. For the behavioural data, we expect to find slower reaction times (RTs) for the processing of non-canonical ungrammatical sentences (i.e. passive sentences with a violation) in both subject groups. However the RTs will be significantly more affected in the PD group compared to the healthy elderly subject group.

Key secondary outcome(s))

No secondary outcome measures

Completion date

01/12/2007

Eligibility

Key inclusion criteria

- 1. Idiopathic Parkinson's disease (PD)
- 2. Hoehn and Yahr stage 1 to stage 3
- 3. Normal vision and hearing
- 4. Able to give informed consent
- 5. Older than 40 years
- 6. Dutch as first language
- 7. Right-handed
- 8. Normal structural magnetic resonance imaging (MRI) scan

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Adult

Sex

All

Key exclusion criteria

- 1. Not optimally medicated
- 2. Neurostimulator
- 3. Implanted pump (e.g. apomorphine)
- 4. Dementia (Mini Mental State Examination [MMSE] score less than 25)
- 5. Depression (Montgomery-Asberg Depression Rating Scale [MADRS] more than 18)
- 6. Another neurological disease
- 7. Another akinetic-rigid disorder
- 8. Another movement disorder
- 9. No normal structural MRI scan

Date of first enrolment

01/12/2006

Date of final enrolment

01/12/2007

Locations

Countries of recruitment

Netherlands

Study participating centre

Oude Kijk int Jatstraat 26 Groningen

Netherlands 9712 EK

Sponsor information

Organisation

University of Groningen (The Netherlands)

ROR

https://ror.org/012p63287

Funder(s)

Funder type

Industry

Funder Name

Stichting Internationaal Parkinson Fonds (The Netherlands)

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary

Not provided at time of registration