Cerebral control of emotional actions in conversion paralysis

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To test whether negative emotions modulate functional frontolimbic - motor connectivity in patients with psychogenic motor disturbances: conversion paralysis (CP)

Ethical review	Approved WMO
Status	Recruiting
Health condition type	Changes in physical activity
Study type	Observational invasive

Summary

ID

NL-OMON32821

Source
ToetsingOnline

Brief title
Imaging emotional actions in conversion paralysis

Condition

- Changes in physical activity

Synonym
conversion disorder, conversion paralysis

Research involving
Human

Sponsors and support

Primary sponsor: Donders Institute for Brain, Cognition and Behaviour: Centre for Cognitive Neuroimaging
Source(s) of monetary or material Support: VIDI-subsidie van Dr. K. Roelofs

Intervention

Keyword: approach-avoidance, Conversion paralysis, emotional actions, functional Magnetic Resonance Imaging

Outcome measures

Primary outcome

1) Behavioural measures, such as reaction times on the approach-avoidance task

(AA-task).

2) Structural MRI and fMRI data obtained during the AA-task in the MRI scanner.

Secondary outcome

The influence of cortisol and testosterone levels present in saliva, on the

behavioral and MRI results.

Study description

Background summary

Conversion paralysis (CP) is characterized by a stress-induced tonic immobility. Although recent brain imaging studies have indicated that CP is associated with increased frontal and decreased motor activity, no studies have systematically explored the interaction between emotions and neural motor control mechanisms in CP.
The aim of the present study is to test this interaction by applying an fMRI adapted emotional approach-avoidance task (AA-task). During this task, participants approach or avoid emotional faces (angry, neutral and happy), respectively, by pulling a joystick towards or pushing it away from themselves. Previous fMRI studies using this task have shown that the AA-task reliably maps the frontal control of emotional actions and that the ventrolateral PFC is particularly recruited when participants have to make affect-incongruent (or counter-intuitive) responses, such as approaching an angry face (1). Here we will apply this task in CP and matched healthy controls to investigate whether negative emotions moderate local activity and interregional connectivity of frontolimbic and motor regions in CP. In specific we test the hypotheses that in CP patients, motor responses (in particular affect-incongruent ones) to negative stimuli are associated with:
1) increased reaction times and increased activity in limbic and frontal

regions
2) a negative functional connectivity between limbic and motor regions

Study objective

To test whether negative emotions modulate functional frontolimbic - motor connectivity in patients with psychogenic motor disturbances: conversion paralysis (CP)

Study design

A static group comparison design (patients versus matched healthy volunteers).

Study burden and risks

All participants will be tested inside a MRI scanner. The Donders Institute for brain, cognition and behaviour: centre for cognitive neuroimaging has a lot of experience with the type of research we are proposing in this protocol and there are no special risks associated with this kind of research. Although there is no direct benefit to the participants from this proposed research, this study can increase insight in the neurobiological background of the failing motor control in patients with conversion paralysis (CP). A greater understanding of the psychological and neurobiological control mechanisms of CP is of crucial importance for the development of both psychological and pharmacological interventions in CP. The study is not only relevant for CP, but also increased insight in emotion-motor interactions in general.

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

Age: 19-55 year. Normal or corrected to normal vision.
Additional for the patients: negative motor symptoms (paralysis, paresis or coordination problems) to the limbs but not to the dominant upper limb (needed for operating the joystick). Additional for the controls: matched for age, gender and education level with the patients.

Exclusion criteria

metal objects in the body, claustrophobia. Additional for the patients: Somatic illnesses (other than psychosomatic complaints of CP), repetitive psychotic episodes, use of anti-psychotic medication, substance abuse.

Study design

Design

Study type:	Observational invasive
Intervention model:	Other
Allocation:	Non-randomized controlled trial
Masking:	Open (masking not used)
Control:	Active
Primary purpose:	Basic science

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	26-03-2010
Enrollment:	40
Type:	Actual

Ethics review

Approved WMO

Date:	18-01-2010
Application type:	First submission
Review commission:	CMO regio Arnhem-Nijmegen (Nijmegen)

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	NL29597.091.09