

Hersenactiviteit Onderliggend aan Predictief voor Suicide

Gepubliceerd: 28-06-2017 Laatste bijgewerkt: 18-08-2022

- brain activation and connectivity during emotion regulation, thinking about future events, inferring on emotions of others and rest are different in patients with a recent suicide attempt compared to patient controls and healthy controls - brain...

Ethische beoordeling	Positief advies
Status	Werving gestart
Type aandoening	-
Onderzoekstype	Observationeel onderzoek, zonder invasieve metingen

Samenvatting

ID

NL-OMON22740

Bron

NTR

Verkorte titel

HOPES

Aandoening

suicide, zelfdoding, emotion regulation (emotie regulatie)

Ondersteuning

Primaire sponsor: University Medical Center Groningen

Overige ondersteuning: ZonMw (537001005)

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

The main study parameter is brain activation/connectivity measured with functional magnetic resonance imaging (fMRI) during emotion regulation.

For the second objective, the main study outcome will be suicidal ideation (measured with the Beck suicidal ideation scale) at 1, 3, 6, and 12 months after attempt. The third objective is the difference in brain activation/connectivity between the baseline fMRI measurement and the follow up scan after 12 months.

Toelichting onderzoek

Achtergrond van het onderzoek

Rationale: Suicide is an urgent societal problem, with alarming numbers that steadily increase in the Netherlands. However, the exact social, psychological and brain mechanisms underlying the risk of suicidal behavior remain largely unknown. It has been proposed that suicidal ideation may result from altered social-emotional processing, e.g. difficulties in cognitive control of emotion, in the face of adversity. This would lead to a “psychological pain” that can fuel hopelessness. Another important ingredient of hopelessness is a lack of flexibility to envision positive future scenarios. Feeling trapped in this desperate situation, suicide can be seen as the only solution. To come to the suicidal act some facilitating factors come into play, which we hypothesize to include reduced ability to take the perspective of others (which may reduce empathy in weighing the emotional consequences for close others). However, the exact nature of this process has not yet been elucidated. In this study, we will for the first time, examine several key cognitive-emotional processes in relation to suicidal behavior using brain imaging: emotion regulation, envisioning future positive events and inferring on emotions of others. In addition, neural markers may identify those patients at

high risk of future suicidality (suicide attempts and/or ideation) and can contribute to the development of more personalized treatment options by shedding light on the processes involved. Moreover, it is not yet known whether and to which extent such (neural) mechanisms “normalize” with time and treatment (i.e. are more similar to healthy comparison subjects). Most of the time participants receive a treatment with elements of cognitive behavior therapy (CBT) to reduce suicidal thoughts and behavior.

Objective: The objectives of this study are threefold. First, we aim to understand the underlying neural mechanisms of suicidality. Therefore, we will investigate brain activation during resting state and three psychological processes that have been suggested to be of relevance to suicidality, but have not been studied yet using brain imaging: emotion regulation, positive imagery of future change and inferring on emotions of others. Second, to identify who is at risk for relapse of suicidal behavior despite adequate application of standard treatment protocol, we will investigate whether brain activation could serve as a marker for future suicidality, including both suicidal ideations and attempts. Third, to understand and target the underlying mechanisms, it is essential to know which mechanisms can be altered and are influenced by the current state of suicidality.

Study design: The current study has an experimental design. We will employ a longitudinal

fMRI study in which we will follow a group of recent suicide attempters, patients with comparable psychopathology and a group of healthy participants for one year. The tasks during fMRI scanning intend to measure emotion regulation, affective forecasting and inferring emotions of others. Furthermore, several interviews and questionnaires will be administered.

Study population: The study population will consist of 46 patients with a recent suicide attempt (less than two weeks ago), 24 patient controls and 24 healthy controls. The patient controls and healthy controls will be matched on age, sex, handedness and level of education. In addition, the patient controls will be matched on psychiatric diagnosis.

Main study parameters/endpoints: The main study parameter is brain activation/connectivity measured with functional magnetic resonance imaging (fMRI) during different types of emotional processing tasks and resting state. For the second objective, the main study endpoint will be the association between brain activation at first measurement and suicidal ideation/attempts at follow-up. For the third objective, the main endpoint will be change in brain activation at follow-up (second MRI scan) as compared to the first measurement.

Doel van het onderzoek

- brain activation and connectivity during emotion regulation, thinking about future events, inferring on emotions of others and rest are different in patients with a recent suicide attempt compared to patient controls and healthy controls
- brain activation and connectivity during these processes is predictive for suicidal behavior in the year following the attempt.
- brain activation and connectivity during these processes change with a change in suicidality in the following year during which treatment according to current clinical guidelines was administered.

Onderzoeksopzet

baseline, 1 month, 3 months, 6 months and 12 months

Onderzoeksproduct en/of interventie

treatment as usual (according to current guidelines)

Contactpersonen

Publiek

University Medical Center Groningen

Esther Opmeer
A. Deusinglaan 2

Groningen 9713 AW
The Netherlands
050-3616401

Wetenschappelijk

University Medical Center Groningen

Esther Opmeer
A. Deusinglaan 2

Groningen 9713 AW
The Netherlands
050-3616401

Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

All participants (N=94)

- At least 18 years of age and not older than 60, in order to only include adults and avoid aging related pathology in information processing (Salthouse, 2010) and brain volumes (Li, et al., 2012), while still including the largest risk group (males between 40-60 years [CBS, meer zelfdodingen, 30-06-2016])
- Written informed consent

Suicide attempt patients (N=46)

- Had a recent suicide attempt as judged by a psychiatrist (not more than two weeks ago at moment of scanning) according to the above mentioned definition

Patient controls (N=24)

- Matched to suicide attempt patients on age, sex, education, and handedness
- Matched to suicide attempt patients on psychopathology
- No current suicidal ideation defined by a BSS=0
- Never attempted suicide

Healthy controls (N=24)

- Matched to suicide attempt patients on age, sex, education, and handedness
- No current suicidal ideation defined by a BSS=0
- Never attempted suicide

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

All participants:

- Presence of a neurological disorder
- A suicide attempt in light of auto-euthanasia in presence of a terminal somatic illness or as cause of a psychotic delusion
- Visual or hearing problems that cannot be corrected
- Insufficient knowledge of the Dutch language
- Not able to undergo 3 Tesla MRI scanning, these criteria include: (suspected) pregnancy, claustrophobia, MR incompatible implants or objects in the body (such as ear prostheses or other metal implants, operating clips or metal particles in the eye), tattoos containing pigments that form a safety risk, the refusal to be informed (by notifying the participants physician) of structural abnormalities that could be detected during the experiment.
- Medication that could influence the brain metabolism

For Healthy controls

- A past or current psychiatric disorder

Onderzoeksopzet

Opzet

Type:	Observationeel onderzoek, zonder invasieve metingen
Onderzoeksmodel:	Parallel
Toewijzing:	Niet-gerandomiseerd
Blinding:	Open / niet geblindeerd
Controle:	N.v.t. / onbekend

Deelname

Nederland	
Status:	Werving gestart
(Verwachte) startdatum:	01-07-2017
Aantal proefpersonen:	96
Type:	Verwachte startdatum

Ethische beoordeling

Positief advies	
Datum:	28-06-2017
Soort:	Eerste indiening

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

Geen registraties gevonden.

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register	ID
NTR-new	NL6411
NTR-old	NTR6587
Ander register	: UMCG research register 201700152

Resultaten