

DELTA-neuroimaging.

No registrations found.

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

Summary

ID

NL-OMON27041

Source

Nationaal Trial Register

Brief title

DELTA-neuroimaging

Health condition

Major Depressive Disorder

Sponsors and support

Primary sponsor: Academic Medical Center, AMsterdam

Source(s) of monetary or material Support: Dutch Brain Foundation (Hersenstichting)

Intervention

Outcome measures

Primary outcome

Prospective Recurrence of MDD during 2.5 years of follow-up.

Secondary outcome

Clinical:

Retrospective Recurrence of MDD during 2.5 years of follow-up.

Neuroimaging:

sMRI, DTI, fMRI (reward-aversive paradigm, emotion regulation task, resting state [before/after mood-induction], Cued Emotional Conflict Task), MRS.

Blood & Saliva:

Poly Unsaturated Fatty Acids, Brain Derived Neurotrophic Factor, DNA and mRNA Genetics, Salivary cortisol and DHEA-s.

Experience Sampling Method:

Daily positive and negative affect measurements during 6 days.

Study description

Background summary

BACKGROUND:

Major depressive disorder (MDD) is a highly prevalent and disabling disease, especially because its symptoms tend to return. In general antidepressants reduce the risk of recurrence 2-fold, but after cessation this risk appears to increase again. For prediction of recurrence, the number of previous episodes is amongst the strongest predictors, together with residual symptoms, daily hassles and coping style. Recurrence of MDD has been considered from neuropsychological, brain network dysfunction, neurochemical and psychoneuroendocrine perspectives which have not yet been integrated.

Therefore, despite these perspectives of neurobiological substrates for recurrent depression, the underlying mechanisms of recurrence remain poorly understood, which will be improved by a multimodal approach in which neuroimaging will be combined with neuropsychological and neurobiological/neuroendocrine measurements in patients with recurrent depression.

AIMS:

With this research-protocol we aim to investigate six important issues regarding recurrences of MDD-episodes:

1. The differences between healthy controls and patients with recurrent MDD-episodes with

respect to structural (sMRI) and functional (fMRI)-scans;

2. The differences in changes in resting state activations and HPA-axis activity after mood-induction between remitted MDD-patients and controls;
3. The differences in the relations between HPA-axis functioning, fatty acid status and neuroimaging findings between remitted MDD-patients and controls;
4. The predictive value of sMRI/fMRI, changes in resting state activations and HPA-axis activity after mood-induction, fatty acid status and their interactions for the occurrence of new relapse/recurrences;
5. The association between sMRI/fMRI, changes in resting state activations and HPA-axis activity after mood-induction and fatty acid status with the number of previous episodes;
6. What changes occur in brain functions, psychoneuroendocrinological measures and their interaction when patients have a recurrence of their depression;
7. What are the associations of the above neuropsychological, neuroendocrine and fMRI measurements with stress and reward in daily life?

DESIGN:

Prospective and retrospective cohort design, with a healthy control comparison group, and an age and sex matched controlled repeated measurements design in case of future (non-) recurrence in the next 2.5 years.

METHODS:

Patients and controls: Fifty remitted unipolar MDD-patients (35-65 yr, both sexes) with ≥ 2 MDD episodes, without psychopharmacologic drugs for at least 4 weeks and fifty controls (age, sex and intelligence matched) will be recruited.

Measurements: Two phases (study entry and after recurrence of depressive symptoms) are studied. In Phase I, two blocks of psychological tests will be obtained, followed structural and functional magnetic resonance imaging (MRI). During the scanning, a mood induction will be performed. In Phase II, when patients experience a recurrence during follow-up, we will invite them for new psychological testing and an MRI-scan. At approximately the same moment during follow-up we will invite a matched patient (matched by age ± 10 years and sex) who has not experienced a recurrence by then, for repeated testing as well.

Neuropsychological tests obtained are the Exogenous cueing task, Face recognition task, Emotional categorization task, Emotional Memory and the Internal Shift Task (both Phases) and the Dutch Adult Reading Test (Phase I only).

MRI scanning will consist of a structural scan, resting state scan, Reinforcement learning task, Magnetic resonance spectroscopy, Diffusion Tensor Imaging, Emotional faces and Cued Emotional Conflict Task (both Phases); in Phase I an Emotion regulation task and a repeated resting-state scan after a sad mood induction will be made.

Neurobiological/Neuroendocrine tests consist of blood collection for polyunsaturated fatty acids and brain derived neurotrophic factor, analysis of genetic polymorphisms and salivary cortisol measurements

Repeated momentary daily assessments will be obtained during 6 days at 10 random timepoints by applying the Experience Sampling Method.

Study objective

Relative to controls, remitted depressed patients have:

1. Increased negative attentional biases;
2. Decreased functional and effective connectivity between emotion-regulation networks;
3. Increased activations of the cognitive control system when regulating emotions in response to emotionally valenced pictures;
4. Blunted reward-signals in the ventral striatum, and increased activations of dopaminergic neurons in the VTA;
5. Increased glutamate and decreased glutamine/GABA signals in the pgACC and basal ganglia;
6. Increased cortisol and DHEAS levels after mood-induction.

Furthermore we expect that:

1. sMRI/fMRI or change in activations of resting state brain networks after mood-induction are predictive for recurrence (after prospective follow-up of 2.5 years);
2. Changes in cortisol and DHEAS levels after mood-induction predictive for recurrence (after prospective follow-up of 2.5 years);
3. Measures of stress and reward-sensitivity predict future recurrences (after prospective follow-up of 2.5 years);
4. Measures of stress and reward-sensitivity correlate with emotional biases, with reward/aversive learning and specific abnormalities in resting-state brain networks.

Study design

1. Baseline;
2. Prospective follow-up every 4 months;
3. Retrospective follow-up for app. 10 years in subjects who participated in a previous study (DELTA).

Intervention

Apart from mood-induction during assessment no interventions applied.

Contacts

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Eligibility criteria

Inclusion criteria

PATIENTS:

1. Age 35-65 yr;
2. Both sexes;
3. ≥ 2 MDD episodes according to a structured interview for DSM-IV (SCID);

4. In stable remission defined as a Hamilton depression rating scale (HDRS) ≤ 7 and Inventory for depressive symptomatology (IDS-SR) ≤ 14 for at least 10 weeks.

CONTROLS:

1. Matched for age, sex and years of education;
2. IDS-SR ≤ 14 .

Exclusion criteria

PATIENTS:

1. Current diagnosis of alcohol or drug dependence, psychotic or bipolar disorder, predominant anxiety disorder;
2. Standard fMRI exclusion criteria (claustrophobia, implanted metal objects in the bodies);
3. Electroconvulsive therapy within two months before scanning;
4. A history of head trauma or neurological disease, severe general physical illness.

CONTROLS:

1. Personal (assessed by SCID) or 1st degree relative with psychiatric disorder;
2. Current diagnosis of alcohol or drug dependence;
3. Standard fMRI exclusion criteria (claustrophobia, implanted metal objects in the bodies);
4. A history of head trauma or neurological disease, severe general physical illness.

Study design

Design

Study type: Observational non invasive

Intervention model:	Parallel
Allocation:	Non-randomized controlled trial
Masking:	Open (masking not used)
Control:	N/A , unknown

Recruitment

NL	
Recruitment status:	Recruiting
Start date (anticipated):	01-12-2011
Enrollment:	100
Type:	Anticipated

Ethics review

Positive opinion	
Date:	24-12-2012
Application type:	First submission

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
NTR-new	NL3609
NTR-old	NTR3768
Other	METC AMC : 11/050
ISRCTN	ISRCTN wordt niet meer aangevraagd.

Study results

Summary results

N/A