The influence of cognitive behavioural therapy for insomnia (CBT-I) on the pathophysiology of major depressive disorder: A pilot study

Published: 22-12-2023
Last updated: 07-04-2024

The objective of the present study is to investigate the influence of CBT-I on the serum levels of MDD biomarkers pertaining to the neuroendocrine, immunologic, neurotrophic, and metabolic hypotheses of MDD (primary objective) and explore whether...

Ethical review	Approved WMO
Status	Pending
Health condition type	Mood disorders and disturbances NEC
Study type	Observational invasive

Summary

ID

NL-OMON56549

Source
ToetsingOnline

Brief title
The influence of CBT-I on MDD pathophysiology

Condition

- Mood disorders and disturbances NEC

Synonym
Depression, insomnia, sleep disturbance.

Research involving
Human

Sponsors and support

Primary sponsor: Universitair Medisch Centrum Groningen

Source(s) of monetary or material Support: Ministerie van OC&W

Intervention

Keyword: CBT-I, Insomnia, Major Depressive Disorder, Pathophysiology

Outcome measures

Primary outcome

The primary study parameter comprises the mean change in serum levels of neuroendocrine (i.e., cortisol), immunologic (i.e., c-reactive protein, CRP; interleukin-6, IL-6; tumour necrosis factor alpha, TNF-alpha), neurotrophic (i.e., brain derived neurotrophic factor, BDNF), and metabolic (i.e., leptin) biomarkers before and after five weeks of CBT-I treatment.

Secondary outcome

Secondary study parameters comprise the mean change in the severity of insomnia (Insomnia Severity index, ISI) and depression (Inventory Depressive Symptoms Self-Report, IDS-SR) before and after five weeks of CBT-I treatment as well as the respective correlation of the difference in insomnia and depression severity with the change in the serum levels of the included biomarkers (see: 8.1.1 Main study parameter/endpoint).

Study description

Background summary

Insomnia represents a common sleep disorder in patients with Major Depressive Disorder (MDD). It has been well-established that insomnia contributes to the aetiology of MDD and negatively impacts the clinical course. In line with these findings, increasing evidence suggests that insomnia is associated with neurobiological alterations that resemble the pathophysiology of MDD. However, studies in clinical populations are limited and it is unknown whether the

treatment of insomnia may reverse such neurobiological alterations. The present study therefore aims to investigate the influence of the first-line treatment for insomnia, Cognitive Behavioural Therapy for Insomnia (CBT-I), on the main pathophysiological mechanisms of MDD in a clinical sample of MDD patients.

Study objective

The objective of the present study is to investigate the influence of CBT-I on the serum levels of MDD biomarkers pertaining to the neuroendocrine, immunologic, neurotrophic, and metabolic hypotheses of MDD (primary objective) and explore whether changes in insomnia severity following CBT-I are associated with alterations in the serum levels of the included biomarkers (secondary objective). It is hypothesized that CBT-I results in a normalisation of MDD pathophysiology.

Study design

The proposed study comprises a prospective observational cohort study. MDD patients who receive CBT-I as part of usual care will be assessed for insomnia (Insomnia Severity Index, ISI) and depression severity (Inventory Depressive Symptoms Self-Report, IDS-SR) before treatment initiation (baseline) and after five weeks of treatment (follow-up) using self-reported questionnaires. Serum levels of well-established MDD biomarkers will be evaluated in blood samples collected at both time points.

Study burden and risks

Given the observational nature of the study there are no anticipated risks or benefits related to study participation. Patients receive the recommended first-line treatment for insomnia (CBT-I) as part of usual care which has been associated with more favourable treatment outcomes in MDD. The burden for participants concerns one visit (15-30 min) prior (baseline) and one visit (15-30 min) following (follow-up) five weeks of CBT-I treatment for the completion of questionnaires (demographic characteristics, clinical characteristics, current treatment, ISI, IDS-SR) and blood sample collection (10 ml).

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 18 years or older.
- Primary diagnosis for MDD (without psychotic features) based on Diagnostic and Statistical Manual 5th edition (DSM-5) criteria ascertained by the Mini International Neuropsychiatric Interview (MINI).
- Co-morbid clinical insomnia (ISI >= 15)
- Stable pharmacological treatment for MDD. This pertains to all medication described in the clinical guideline for the treatment of MDD including antidepressant monotherapy, combination therapy (i.e., multiple antidepressants provided simultaneously), and augmentation therapy (i.e., antidepressants combined with lithium or atypical antipsychotics). No changes in pharmacological MDD treatment (type and dosage) should be anticipated during the study period or present within the four weeks prior to participation.

Exclusion criteria

- Comorbid diagnoses for a psychiatric disorder within one of the following diagnostic groups:
o Bipolar disorders
o Schizophrenia or other psychotic disorders

o Delirium, dementia, and amnestic and other cognitive disorders
o Substance use disorder
- Current or recent (four weeks prior to inclusion) use of non-prescribed psychoactive compounds (i.e., recreational drugs, herbal medicine etc.) not including caffeine and alcohol.
- Pregnancy or breastfeeding.

Study design

Design

Study type: Observational invasive

Masking:	Open (masking not used)
Control:	Uncontrolled
Primary purpose:	Treatment

Recruitment

NL

Recruitment status:	Pending
Start date (anticipated):	05-04-2024
Enrollment:	34
Type:	Anticipated

Ethics review

Approved WMO Date:	22-12-2023
Application type:	First submission
Review commission:	METC Universitair Medisch Centrum Groningen (Groningen)
Approved WMO Date:	23-02-2024
Application type:	Amendment
Review commission:	METC Universitair Medisch Centrum Groningen (Groningen)

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	NL84859.042.23