Clinical Trial Protocol
Iranian Registry of Clinical Trials

07 Nov 2026

Study of Effects of Repetitive Transcranial Magnetic Stimulation (rTMS) on Executive Function in Patients of Refractory Obsessive Compulsive Disorder

Protocol summary

Summary

This study is a randomized single blind Sham control study for evaluation of effects of Repetitive Transcranial Magnetic Stimulation on executive functions of refractory obsessive compulsive disorder patients. Therefore such Patients, hospitalized in Farshchian hospital or out-patients, will be selected. After obtaining informed consent, these patients will be randomly allocated to either first receiving "repeatetive transcranial magnetic stimulation (rTMS)" and then "Sham condition" or vice versa. Sham stimulation will be made at the site of active treatment but with only the side edge resting on the scalp. It will be administered as high frequency left (HFL) and high frequency right (HFR) for total of 50 minutes but with the coil angled 45-90 degrees away from the skull in a single-wing tilt position. After two weeks Bilateral rTMS will be delivered according to the following protocol: high frequency left (HFL) stimulation will initially be applied at 20 Hz, in 25 trains of 1.5 second duration with a 30 second interval between trains and at 100% of the resting motor threshold (RMT) for a total of 12.5 minutes of stimulation; Then following this high frequency right (HFR) stimulation will be applied at the same parameters. Therefore a total of 25 minutes of stimulation will be delivered bilaterally. Two groups will be compared regarding executive function improvement using "wisconsin card sorting test",in 1st, last and two weeks after intervention.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2014112919808N2**
Registration date: **2014-12-08, 1393/09/17**
Registration timing: **prospective**
Last update:
Update count: **0**

Registration date

2014-12-08, 1393/09/17

Registrant information

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Name of organization / entity
Hamadan University of Medical Sciences
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Recruitment status

Recruitment complete

Funding source

Hamedan University of Medical Sciences

Expected recruitment start date

2014-12-11, 1393/09/20

Expected recruitment end date

2015-01-10, 1393/10/20

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Study of Effects of Repetitive Transcranial Magnetic Stimulation (rTMS) on Executive Function in Patients of Refractory Obsessive Compulsive Disorder

Public title

Study of Effects of Repetitive Transcranial Magnetic

Stimulation on Executive Function of Refractory Obsessive Compulsive Disorder Patients

Purpose
Treatment

Inclusion/Exclusion criteria
Intervention (refractory transcranial magnetic stimulation (rTMS)): high frequency left (HFL) stimulation will initially be applied at 20 Hz, in 25 trains of 1.5 second duration with a 30 second interval between trains and at 100% of the resting motor threshold (RMT) for a total of 25 minutes of stimulation; Then following this, high frequency right (HFR) stimulation will be applied at the same parameters. Therefore a total of 25 minutes of stimulation will be delivered Bilaterally.

Age
From **18 years** old to **65 years** old

Gender
Both

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **10**

Randomization (investigator's opinion)
Randomized

Randomization description

Blinding (investigator's opinion)
Single blinded

Blinding description

Placebo
Used

Assignment
Crossover

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Hamadan University of Medical Sciences

Street address
Shahid Fahmideh Street, Hamedan

City
Hamedan

Postal code

Approval date
2014-11-25, 1393/09/04

Ethics committee reference number
16/35/9/4114/پ

Health conditions studied

1

Description of health condition studied
refractory obsessive compulsive disorder

ICD-10 code
F42.2

ICD-10 code description
Mixed obsessional thoughts and acts

Primary outcomes

1

Description
Rate of executive function in refractory OCD

Timepoint
after 10th, 20th sessions of rTMS or sham

Method of measurement
wisconsin card sorting test

Secondary outcomes

empty

Intervention groups

1

Description
Intervention (refractory transcranial magnetic stimulation (rTMS)): Bilateral rTMS will be delivered according to the following protocol: high frequency left (HFL) stimulation will initially be applied at 20 Hz, in 25 trains of 1.5 second duration with a 30 second interval between trains and at 100% of the RMT for a total of 25 minutes of stimulation. Following this HFR stimulation will be applied at the same parameters. Therefore a total of 50 minutes of stimulation will be delivered.

Category
Treatment - Devices

2

Description
Control (Sham condition): Sham stimulation will be made at the site of active treatment but with only the side edge resting on the scalp. It will be administered as HFL and HFR for 50 minutes but with the coil angled 45-90 degrees away from the skull in a single-wing tilt position. This method produces sound and some somatic sensation (e.g., contraction of scalp muscles) similar to those with active stimulation but with minimal direct brain effects. Participants will be unable to see the stimulating coil and therefore will remain blind to the treatment condition.

Category
Treatment - Devices

Recruitment centers

1

Recruitment center
Name of recruitment center
Farshchian hospital
Full name of responsible person
Dr Mehran Shayganfard
Street address
Mirzade eshghi st
City
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Hamadan University of Medical Science
Full name of responsible person
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Farshchian Hospital, Mirzade eshghi st
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Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Hamadan University of Medical Science
Proportion provided by this source
100
Public or private sector
empty
Domestic or foreign origin
empty
Category of foreign source of funding
empty
Country of origin
Type of organization providing the funding
empty

Person responsible for general inquiries

Contact
Name of organization / entity
Research center for behavioral disorders and substance abuse, Hamadan University of Medical Science
Full name of responsible person
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Person responsible for updating data

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
empty
Study Protocol
empty
Statistical Analysis Plan

empty

Informed Consent Form

empty

Clinical Study Report

empty

Analytic Code

empty

Data Dictionary

empty