

Clinical Trial Protocol

Iranian Registry of Clinical Trials

17 Jun 2026

Comparison of the effectiveness of cognitive rehabilitation of stroke patients with spatial neglect using the Prism Adaption and combined Prism Adaption and the Trans-cranial Magnetic Stimulation: a randomized control clinical trial

Protocol summary

Study aim

This study aimed to investigate the effect of cognitive rehabilitation using the prism combined the trans cranial magnetic stimulation among stroke patients with spatial neglect

Design

This study will be a single blind, sham controlled randomize clinical trial in phase 2 with parallel group design. There will be 18 patient with stroke related neglect that will enroll between August 2017 and September 2018.

Settings and conduct

The Intervention group: The stroke patients with neglect underwent Continuous theta-burst Trans cranial Magnetic Stimulation combined with Prism Adaptation to mirror therapy for 10 sessions. The control group: The stroke patients with neglect underwent sham Trans cranial Magnetic Stimulation combined with prism adaptation to mirror therapy for 10 sessions. Neglect and stroke-related functional assessment tests will be administered before and after 10 sessions of therapy for assessment of therapy efficacy. The present study will be conducted at Shariati Hospital and the National Center for Mapping of the Brain;

Participants/Inclusion and exclusion criteria

Inclusion criteria: Neglect due to stroke; being right handed. Non inclusion criteria: age less than 18 and more than 80 years; severe head trauma in the last 3 months; severe chronic health conditions such as advanced cancer; dementia; heart pacemaker.

Intervention groups

The intervention group will receive Continuous theta-burst Trans cranial Magnetic Stimulation combined with Prism Adaptation to mirror therapy for 10 sessions. The stroke patients in the sham group will receive sham Trans cranial Magnetic Stimulation combined with prism

adaptation to mirror therapy for 10 sessions.

Main outcome variables

Unilateral neglect

General information

Reason for update

Acronym

cognitive rehabilitation Trans-cranial Magnetic Stimulation (TMS) Prism Adaption (PA)

IRCT registration information

IRCT registration number: **IRCT20170423033606N3**

Registration date: **2018-11-25, 1397/09/04**

Registration timing: **retrospective**

Last update: **2018-11-25, 1397/09/04**

Update count: **0**

Registration date

2018-11-25, 1397/09/04

Registrant information

Name

SHole Vatanparasti

Name of organization / entity

ICSS

Country

Iran (Islamic Republic of)

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+98 433839881

Email address

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Recruitment status

Recruitment complete

Funding source

Investigator

Expected recruitment start date

2017-07-22, 1396/04/31

Expected recruitment end date

2018-11-21, 1397/08/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of the effectiveness of cognitive rehabilitation of stroke patients with spatial neglect using the Prism Adaption and combined Prism Adaption and the Trans-cranial Magnetic Stimulation: a randomized control clinical trial

Public title

The effect of Prism Adaption and the Trans-cranial Magnetic Stimulation in spatial neglect treatment

Purpose

Treatment

Inclusion/Exclusion criteria**Inclusion criteria:**

The right-handed patients stroke in right hemisphere with unilateral neglect

Exclusion criteria:

Minimum age 18 and Maximum age 80 years intense pain cerebral edema brain trauma pacemaker of heart National Institutes of Health Stroke scale

Age

From **18 years** old to **80 years** old

Gender

Both

Phase

2-3

Groups that have been masked

- Participant

Sample size

Target sample size: **18**

Randomization (investigator's opinion)

Randomized

Randomization description

Participants will be assigned to one of two groups with the help of random numbers table.

Blinding (investigator's opinion)

Single blinded

Blinding description

After randomization, intervention group patients will receive trans cranial magnetic stimulation (TMS) with the following protocol: 801 pulses will be delivered in 267 bursts and each burst consisted of 3 pulses at 30 Hz. Each session of stimulation will last 45 seconds as stimulation bursts will be delivered at 6 Hz. Magnetic coil will be tangentially placed at P3, with the handle pointing posterior. Sham group patients will receive the same stimulation protocol and the magnetic coil will be placed at P3. The only difference will be holding the magnetic coil vertical to the scalp that will resulted in no brain stimulation during the stimulation period. However,

patients will hear magnetic pulses' sounds (clicks) without receiving any stimulation.

Placebo

Used

Assignment

Parallel

Other design features**Secondary Ids**

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

Ethics committee of Iran University of Medical Sciences

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Between Sheikh Fazlollah Noori and Shahid Chamran highway, Shahid Hemmat high way

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57168-47146

Approval date

2017-05-13, 1396/02/23

Ethics committee reference number

IR.IUMS.REC.1396.93012334

Health conditions studied**1****Description of health condition studied**

Stroke with unilateral spatial neglect

ICD-10 code

I64

ICD-10 code description

Stroke, not specified as hemorrhage or infarction

Primary outcomes**1****Description**

Unilateral neglect

Timepoint

Before and after 10 session treatment

Method of measurement

Line Bisection Test; Star Cancellation Test; The Catherine Bergego Scale

Secondary outcomes

1

Description

Neurological function

Timepoint

Before and after 10 session treatment

Method of measurement

The Modified Rankin Scale and The Barthel Index Scale

2

Description

Writing errors of unilateral neglect

Timepoint

Before and after 10 session treatment

Method of measurement

The Writing Test

3

Description

Painting of unilateral neglect

Timepoint

Before and after 10 session treatment

Method of measurement

The Painting Coloring Test

4

Description

Reading of unilateral neglect

Timepoint

Before and after 10 session treatment

Method of measurement

The Reading Test

5

Description

Copying shape of unilateral neglect

Timepoint

Before and after 10 session treatment

Method of measurement

The O'clock Test and The Copying Shape

6

Description

Aphasia of unilateral neglect;;

Timepoint

Before and after 10 session treatment;;

Method of measurement

Persian Diagnostic Aphasia Battery-Aphasia Quotient Test,Persian Picture Naming Battery Test, Picture Naming

7

Description

Memory of unilateral neglect

Timepoint

Before and after 10 session treatment

Method of measurement

Wechsler Memory Scale: Sub Test, River Mill Scale: Sub Test, Rey Auditory Verbal Learning Test

8

Description

Spatial ability unilateral neglect

Timepoint

Before and after 10 session treatment

Method of measurement

Mental Rotation Test,Visualizing Test and Water Level Test

Intervention groups

1

Description

Intervention group: In each session, patients will receive trans cranial magnetic stimulation (TMS). Inhibitory TMS will be as following protocol: 801 pulses will be delivered in 267 bursts and each burst will consist of 3 pulses at 30 Hz. Each session of stimulation will last 45 seconds as stimulation bursts will deliver at 6 Hz. Magnetic coil will place tangentially at P3 and the coil handle will be placed in posterior. After stimulation, patients will receive mirror therapy for 20 minutes while will wear prism glasses. Prism adaption glasses will deviate the visual fields 10 degrees to the right. In each 20 minutes of mirror therapy, patients will sit at a table containing a vertical mirror with the size of 35*35*30 cm. Patients will be asked to put their pare tic hands inside the mirror box and their intact hand in front, so mirror image of the intact hand will seem as the pare tic hand in the patients' eyes. Then, patients will open and close their hands and fingers while will look at their hands' images in the mirror. Also, they will try to do the same movements with their pare tic hands meanwhile. This therapy will continue for 10 daily sessions in 2 weeks.

Category

Rehabilitation

2

Description

Sham stimulation control group: In each session, patients will receive trans cranial magnetic stimulation (TMS). Inhibitory TMS will be as following protocol: 801 pulses will deliver in 267 bursts and each burst will consist of 3 pulses at 30 Hz. Each session of stimulation will last 45 seconds as stimulation bursts will deliver at 6 Hz. Magnetic coil will couple vertically place at P3, with the handle will be placed at posterior. After stimulation, patients will receive mirror therapy for 20 minutes while will wear prism glasses. Prism adaption glasses will deviate the visual fields 10 degrees to the right. In each 20 minutes of mirror therapy, patients will sit at a table contain a vertical mirror in size of 35*35*30 cm. Patients will ask to put their pare tic hands inside the mirror box and their intact hand in front, so mirror image of the intact hand will seem as the pare tic hand to the patients' eyes. Then, patients will open and close their hands and fingers while will look at their hands' images in the mirror. Also, they will try to do the same movements with their pare tic hands meanwhile. This therapy will be done during 10 daily sessions for 2

weeks.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Shariati hospitalal

Full name of responsible person

Shahram Ovis Garan

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Cognitive Sciences & Technologies Council

Full name of responsible person

Najib Nili

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No. 35 ,Barmak alley, Arjantin Square

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Web page address

http://cogc.ir/index.php?ctrl=static_page&lang=1&id=1021

Grant name

Encouragement Support by the Department of Cognitive Science Development Support for Ph.D.;

Grant code / Reference number

4975

Is the source of funding the same sponsor organization/entity?

Yes

Title of funding source

Cognitive Sciences & Technologies Council

Proportion provided by this source

100

Public or private sector

Public

Domestic or foreign origin

Domestic

Category of foreign source of funding

empty

Country of origin

Type of organization providing the funding

Academic

Person responsible for general inquiries

Contact

Name of organization / entity

Shahid Beheshti University of Medical Sciences

Full name of responsible person

SHole Vatanparasti

Position

PHD student in cognitive psychology

Latest degree

Master

Other areas of specialty/work

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

Undecided - It is not yet known if there will be a plan to make this available

Study Protocol

Undecided - It is not yet known if there will be a plan to make this available

Statistical Analysis Plan

Undecided - It is not yet known if there will be a plan to make this available

Informed Consent Form

Undecided - It is not yet known if there will be a plan to make this available

Clinical Study Report

Undecided - It is not yet known if there will be a plan to make this available

Analytic Code

Undecided - It is not yet known if there will be a plan to make this available

Data Dictionary

Undecided - It is not yet known if there will be a plan to make this available