Clinical Trial Protocol
Iranian Registry of Clinical Trials

16 Sep 2026

The effects of Transcranial direct current stimulation (tDCS) on balance function in adults with peripheral vertigo

Protocol summary

Study aim
to investigate the combined effect of vestibular rehabilitation and transcranial direct current stimulation (tDCS) in comparison with vestibular rehabilitation alone on improving the balance symptoms in adults with peripheral vertigo

Design
This is a randomized clinical trial that adults with peripheral vertigo will be randomly assigned to intervention groups 1 and intervention 2.

Settings and conduct
Place: Imam Khomeini Hospital, Ahvaz Transcranial Direct Current Stimulation (tDCS) will be applied via two electrodes using 2mA intensity and 20-minutes duration. The anode and cathode electrodes were placed over the right (T4) and left (T3) auditory cortex sites. All patients undergo vestibular rehabilitation treatment (VRT) using the EPLEY approach. Dizziness Handicap Inventory (DHI) questionnaire: This questionnaire is designed to assess the effect of balance problems on the emotional, functional and physical dimensions of the patient's life with imbalance. The score of the questionnaire is between zero and 100, with higher values indicating more disability. VRT and tDCS Stimulation will be applied on 5 weekdays during a TWO-week period (10 sessions) and DHI results will be compared at pre-intervention, 1-week post-intervention and 2-week post-intervention time-points.

Participants/Inclusion and exclusion criteria
Inclusion criteria: chronic peripheral vertigo; age: 20-40 yr Exclusion criteria: history of cervical problem, psychiatric disorders, and epileptic seizures and brain trauma

Intervention groups
1- Group who only received vestibular rehabilitation in combination with tDCS therapy (VRT+tDCS) 2- Group who only received estibular rehabilitation therapy (VRT)

Main outcome variables
Balance problems (emotional, functional and physical dimensions)

General information

Reason for update

Acronym
tDCS & VRT

IRCT registration information
IRCT registration number: **IRCT20200820048467N2**
Registration date: **2021-08-18, 1400/05/27**
Registration timing: **prospective**

Last update: **2021-08-18, 1400/05/27**
Update count: **0**

Registration date
2021-08-18, 1400/05/27

Registrant information

Name
Arash Bayat

Name of organization / entity

Country
Iran (Islamic Republic of)

Phone
+98 61 3374 3506

Email address
arashbayat2004@yahoo.com

Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2021-08-23, 1400/06/01

Expected recruitment end date
2022-03-03, 1400/12/12

Actual recruitment start date
empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
The effects of Transcranial direct current stimulation (tDCS) on balance function in adults with peripheral vertigo

Public title
effects of electrical stimulation on balance function in adults
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
Chronic peripheral vertigo Adult
Exclusion criteria:
History of brain/head trauma History of neck problem History of psychiatric disorders History of epileptic seizures
Age
From **18 years** old to **40 years** old
Gender
Both

Phase
N/A
Groups that have been masked
No information
Sample size
Target sample size: **40**
Randomization (investigator's opinion)
Randomized
Randomization description
Random assignment of patients to intervention and control groups by lot. For this purpose, we prepare two sheets and write "Intervention " on one and "CONTROL" on the other. Then, with each patient's visit, one of the sheets is randomly removed and the patient is assigned to intervention group or CONTROL group.
Blinding (investigator's opinion)
Not blinded
Blinding description
Placebo
Not used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics committee of Ahvaz University of Medical Sciences
Street address
Golestan Street, Medical university
City
Ahvaz
Province
Khouzestan
Postal code
6193673111
Approval date
2021-05-22, 1400/03/01
Ethics committee reference number
IR.AJUMS.REC.1400.116

Health conditions studied

1

Description of health condition studied
Peripheral vertigo
ICD-10 code
H81.39
ICD-10 code description
Other peripheral vertigo

Primary outcomes

1

Description
Balance problems (emotional, functional and physical dimensions)
Timepoint
5 weekdays sessions during a TWO-week period (10 sessions)
Method of measurement
DHI questionnaire scoring (Total scores + 3 emotional, physical and functional DHI sub-components)

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: Group who received tDCS in combination with vestibular rehabilitation therapy (VRT+tDCS). VRT and tDCS Stimulation therapy will be applied on 5 weekdays during a TWO-week period (10 sessions). The tDCS will be applied via two electrodes using 2mA intensity and 20-minutes duration. The anode and cathode electrodes were placed over the right (T4) and left (T3) auditory cortex sites. Furthermore, all patients undergo VRT using the EPLEY approach.
Category
Rehabilitation

2

Description
Control group: Group who received only vestibular rehabilitation therapy (VRT). VRT therapy will be applied

on 5 weekdays during a TWO-week period (10 sessions) using EPLEY method.

Category
Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center
Imam Khomeini Hospital, Ahvaz

Full name of responsible person
Arash bayat

Street address
Department of ENT, Imam Khomeini Hospital, Ahvaz

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Ahvaz University of Medical Sciences

Full name of responsible person
Dr. Mehdi Ahmadi Moghadam (Vice President for Research, Ahvaz University of Medical Sciences)

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Research Deputy, Ahvaz Jundishapur University of Medical Sciences, Golestan Blv., Ahvaz

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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
Ahvaz University of Medical Sciences

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
Ahvaz University of Medical Sciences

Full name of responsible person
Arash Bayat

Position
Assistant Professor

Latest degree
Ph.D.

Other areas of specialty/work
Audiology

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Person responsible for updating data

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

Yes - There is a plan to make this available

Study Protocol

Yes - There is a plan to make this available

Statistical Analysis Plan

Yes - There is a plan to make this available

Informed Consent Form

Yes - There is 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

Title and more details about the data/document

All statistical files and questionnaires are accessible (names are coded)

When the data will become available and for how long

from ARTICLE publishing

To whom data/document is available

Researchers in the field of vestibular

Under which criteria data/document could be used

Research and treatment purposes

From where data/document is obtainable

Hearing research center, AJUMS

What processes are involved for a request to access data/document

1- Send your request to the University of Medical Sciences, AFTER APPROVAL 2- Hearing research center

Comments