Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Comparision of Eccentric & Concentric Exercises on balance in Patients with Hemiparesis

Protocol summary

Summary

The purpose of this study is to evaluate and compare the effects of eccentric exercise and concentric exercise on postural sway in hemiparetic patients. 36 hemiparetic patients that over 20 years of age, with a history of at least 6 months of suffering from hemiparesis are randomly and not blind divided into two groups. The treatment program included an eight-week (3 time per week) eccentric exercises on a treadmill for one group and an eight-week concentric exercises for the other group in the study. The eccentric exercises are carry out by running on a treadmill at 4° negative slope (downhill). The concentric exercises, however, are conduct by running at 4 degree slope (uphill) on the treadmill. The treatment exercises do with a comfortable treadmill speed for 15 minutes (plus 5 minutes warm-up and 5 minutes cool-down period) for each participant. Displacement and velocity of displacement, Before and after of intervention, in Anteroposterior and Mediolateral directions in both groups of hemiparetic patients are measure and compare.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201504154485N4**
Registration date: **2015-11-04, 1394/08/13**
Registration timing: **registered_while_recruiting**

Last update:
Update count: **0**

Registration date

2015-11-04, 1394/08/13

Registrant information

Name

Abdolhamid Hajihasani

Name of organization / entity

Semnan University of Medical Sciences

Country

Iran (Islamic Republic of)

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Recruitment status

Recruitment complete

Funding source

Semnan University of Medical Sciences vice chancello for research

Expected recruitment start date

2015-08-11, 1394/05/20

Expected recruitment end date

2016-01-10, 1394/10/20

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparision of Eccentric & Concentric Exercises on balance in Patients with Hemiparesis

Public title

Effects of Eccentric & Concentric Exercises On Postural Sway in Patients with Hemiparesis

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion Criteria: Subjects with over 20 years of age, with a history of at least 6 months of suffering from hemiparesis, They are all able to run on the treadmill. Exclusion Criteria: Subjects with cognitive impairment, a history of involvement of both hemispheres, cerebellum injuries or other neurological or orthopedic complications

affecting the feet

Age
From **20 years** old to **60 years** old

Gender
Both

Phase
2

Groups that have been masked
No information

Sample size
Target sample size: **36**

Randomization (investigator's opinion)
Randomized

Randomization description

Blinding (investigator's opinion)
Not blinded

Blinding description

Placebo
Not used

Assignment
Parallel

Other design features
Sealed envelope

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Ethics Committee of Semnan University of Medical Sciences

Street address
5 Kilometers of Damghan road

City
Semnan

Postal code

Approval date
2015-06-15, 1394/03/25

Ethics committee reference number
ir.semums.rec.1394.34

Health conditions studied

1

Description of health condition studied
Hemiparasis

ICD-10 code
G-81

ICD-10 code description
Hemiplegia, unspecified

Primary outcomes

1

Description
Postural Sway

Timepoint
Before and after of intervention

Method of measurement
Force plate

2

Description
Displacement of center of pressure

Timepoint
Before and after of intervention

Method of measurement
Force plate

3

Description
Velocity of center of pressure

Timepoint
Before and after of intervention

Method of measurement
Force plate

Secondary outcomes

empty

Intervention groups

1

Description
Eccentric exercises 8 weeks (3 time per week and 20 minutes per session) downhill or uphill running protocol on the treadmill

Category
Rehabilitation

2

Description
Concentric exercises 8 weeks (3 time per week and 20 minutes per session) downhill or uphill running protocol on the treadmill

Category
Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center
Neuromuscular Rehabilitation Center Research of Semnan University of Medical Sciences

Full name of responsible person

Street address
5 Kilometers of Damghan road, Semnan

City

Semnan

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Semnan University of Medical Sciences Vice chancello for research
Full name of responsible person
Dr Mohamad reza Askari
Street address
5 Kilometers of Damghan road, Semnan
City
Semnan
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Semnan University of Medical Sciences Vice chancello for research
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

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Name of organization / entity
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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