

Clinical Trial Protocol

Iranian Registry of Clinical Trials

04 Jul 2026

The effect of Functional Stretching Exercises on Functional Outcomes in Spastic Stroke Patients: A Randomized, Controlled Trial

Protocol summary

Summary

The main aim of this study was to investigate the effect of functional stretching exercises on functional outcomes in stroke patients. Materials and Methods: This study was a single-blinded (examiner) randomized control trial. Fifteen stroke patients as experimental group and fifteen stroke patients as control group with spasticity (Modified Modified Ashworth Scale >1) and without deformity in ankle joint with simple randomization participated in this study. Subjects in experimental group participated in a functional stretching training program at the rehabilitation center three times a week for 4 weeks. Subjects in both groups were evaluated before the training, at the end of training, and 2 month follow-up. Clinical assessments such as measurement of spasticity measured with use of Modified Modified Ashworth Scale (MMAS). Functional outcomes evaluated with use of timed up-and-go test (TUG) and 10-meter walking timed test.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201610194738N6**
Registration date: **2016-12-21, 1395/10/01**
Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2016-12-21, 1395/10/01

Registrant information

Name

Khosro Khademi Kalantari

Name of organization / entity

Shahid Beheshti university of medical sciences,

Faculty of Rehabilitation

Country

Iran (Islamic Republic of)

Phone

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Recruitment status

Recruitment complete

Funding source

Vice chancellor for research, Shahid Beheshti University of Medical Sciences

Expected recruitment start date

2015-05-31, 1394/03/10

Expected recruitment end date

2016-05-30, 1395/03/10

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effect of Functional Stretching Exercises on Functional Outcomes in Spastic Stroke Patients: A Randomized, Controlled Trial

Public title

The Effect of Muscular Stretching on Functional Outcomes After Stroke

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: Unilateral brain stroke; Spasticity in ankle based on the persian version of modified modified Ashworth scale (MMAS.>1); Ability to walk with or without assistive devices ; Adequate mental status with score above 24 according to persian version of Minimental Status Scale ; Adequate general health ;

enough range of motion in ankle joint. Exclusion criteria: Contracture and deformity in ankle joint; Pain in lower limb; participation in sport activities or physical therapy ; Using anti-spastic medication; Other neurological diseases such as parkinson.

Age

No age limit

Gender

Both

Phase

2-3

Groups that have been masked

No information

Sample size

Target sample size: **30**

Randomization (investigator's opinion)

Randomized

Randomization description**Blinding (investigator's opinion)**

Single blinded

Blinding description**Placebo**

Not used

Assignment

Parallel

Other design features

In this study we used simple randomization with use of random-number table.

Secondary Ids

empty

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

Ethics committee of Shahid Beheshti University of Medical Sciences

Street address

Building number 2, Shahid Beheshti University of Medical Sciences, next to Taleghani Hospital , Velenjack

City

Tehran

Postal code**Approval date**

2015-12-27, 1394/10/06

Ethics committee reference number

IR.SBMU.REC.1394.133

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

Brain stroke

ICD-10 code

I64

ICD-10 code description

Stroke, not specified as haemorrhage or infarction

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

timed up-and-go test (TUG)

Timepoint

baseline, after and two month after intervention

Method of measurement

With use of cornomometer

2**Description**

10-meter walking timed test

Timepoint

baseline, after and two month after intervention

Method of measurement

With use of cornomometer

Secondary outcomes**1****Description**

spasticity score

Timepoint

baseline, after and two month after intervention

Method of measurement

MMAS

2**Description**

subjective experience

Timepoint

baseline, after and two month after intervention

Method of measurement

VAS

Intervention groups**1****Description**

Functional stretching of gastrocnemius muscle will be applied to intervention group.

Category

Rehabilitation

2**Description**

No stretch will be applied to control group.

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center

Physiotherapy clinic, School of Rehabilitation, Shahid Beheshti University of Medical Sciences

Full name of responsible person

Khosro Khademi Kalantari

Street address

School of Rehabilitation, Opposite to Bou Ali Hospital, Damavand Road, Tehran, Iran

City

Tehran

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Vice Chacellor for research of Shahid Beheshti University of Medical Sciences

Full name of responsible person

Dr Afshin Zarghi

Street address

Building number 2, Shahid Beheshti University of Medical Sciences, next to Taleghani Hospital , Velenjak

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Tehran

Grant name**Grant code / Reference number****Is the source of funding the same sponsor organization/entity?**

Yes

Title of funding source

Vice Chacellor for research of Shahid Beheshti University of Medical Sciences

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

School of Rehabilitation, Shahid Beheshti School of Rehabilitation, Shahid Beheshti University of Me

Full name of responsible person

Khosro Khademi Kalantari

Position

Professor

Other areas of specialty/work

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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