

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

EFFECT OF CORE STABILIZATION EXERCISES IN IMPROVING TRUNK MOBILITY, FUNCTION, AMBULATION AND QUALITY OF LIFE IN STROKE PATIENTS

Protocol summary

Study aim

To determine effectiveness of core stabilization exercises versus conventional therapy on trunk mobility, function, ambulation and quality of life of stroke patients

Design

Randomized control trial

Settings and conduct

To take readings at pre-treatment and post-treatment levels, outcome assessors were recruited, who were blinded to the treatment group.

Participants/Inclusion and exclusion criteria

45-65 years of age, sitting achieved by patient for at least 10 seconds were included. Exclusion criteria: severe cognitive and communication disorders that can effect interaction with patient.

Intervention groups

In conventional group patients were given range of motion exercises, mobility exercises like transfers and gait training, stretching, tone reduction, task oriented training and compensatory approach. Task oriented training emphasized on hemiplegic side. For upper limb, different objects were placed on table and patient was asked to use them. For ADL training combing, brushing, eating activities were performed. Reaching and grasping activities were taught in sitting position. Mat activities were performed with special emphasis in sitting positing. Group B: In experimental group core stability training was done by increasing frequency of repetition from 10 to 20 repetitions according to patient condition .Core stability consisted of abdominal drawing in maneuver for contraction of transverses abdominis. After training of ADIM movements of pelvis with and without ADIM were performed. Pelvic control exercises comprise of anterior-posterior tilt, lateral shift and transverse rotation. Bed exercises were bridging exercises. Curl up was done with progression from straight reaching, with diagonal reaching and with arms crossed. Multifidus exercises

were performed.

Main outcome variables

Trunk function: trunk impairment scale; functional ambulation categories; stroke specific quality of life scale

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20210614051578N1**

Registration date: **2021-08-22, 1400/05/31**

Registration timing: **retrospective**

Last update: **2021-08-22, 1400/05/31**

Update count: **0**

Registration date

2021-08-22, 1400/05/31

Registrant information

Name

Wajeeha Mahmood

Name of organization / entity

Superior university

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Pakistan

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2018-03-17, 1396/12/26

Expected recruitment end date

2018-09-17, 1397/06/26

Actual recruitment start date

2018-03-17, 1396/12/26

Actual recruitment end date

2018-09-17, 1397/06/26

Trial completion date

2018-09-17, 1397/06/26

Scientific title

EFFECT OF CORE STABILIZATION EXERCISES IN IMPROVING TRUNK MOBILITY, FUNCTION, AMBULATION AND QUALITY OF LIFE IN STROKE PATIENTS

Public title

EFFECT OF CORE STABILIZATION EXERCISES IN IMPROVING TRUNK MOBILITY, FUNCTION, AMBULATION AND QUALITY OF LIFE IN STROKE PATIENTS

Purpose

Treatment

Inclusion/Exclusion criteria**Inclusion criteria:**

Sitting achieved by patient for at least 10 seconds
Chronic ischemic stroke patients (more than 6 months), not more than 1 year History of first time stroke
Definite diagnosis of stroke confirmed through CT or MRI
45-65 years of age Both genders

Exclusion criteria:

Severe cognitive and communication disorders that can affect interaction with patient. Any neurological and sensory disorders other than stroke that can affect postural control Any visual, sensory and hearing impairment that was not corrected through aids. Any metabolic and malignant disorder which can lead to emergency condition

Age

From **45 years** old to **65 years** old

Gender

Both

Phase

N/A

Groups that have been masked

- Participant
- Outcome assessor

Sample size

Target sample size: **40**

Actual sample size reached: **40**

Randomization (investigator's opinion)

Randomized

Randomization description

Participants fulfilling the inclusion criteria were selected consecutively and were then allocated randomly to conventional group and experiment groups. The process of allocation was concealed from the participants and the researcher. It was performed by a research assistant who was not involved in any further step of research. Patients were randomly divided through random number table

Blinding (investigator's opinion)

Double blinded

Blinding description

To take readings at pre-treatment and post-treatment levels, outcome assessors were recruited, who were blinded to the treatment group

Placebo

Not used

Assignment

Other

Other design features**Secondary Ids**

empty

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

Riphah International University

Street address

13,14 c, civic center, Township, Lahore, Pakistan

City

Lahore

Postal code

40050

Approval date

2018-03-08, 1396/12/17

Ethics committee reference number

Ref. No. RCRS-RE-MS-NMPT/Spring 2018/001

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

Stroke

ICD-10 code

Z82.3

ICD-10 code description

Family history of stroke

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

Trunk function

Timepoint

6 weeks

Method of measurement

trunk impairment scale

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

Functional ambulation

Timepoint

6 weeks

Method of measurement

Functional ambulation categories

2

Description

Quality of life

Timepoint

6 weeks

Method of measurement

Stroke specific quality of life scale

3

Description

Trunk range of motion

Timepoint

6 weeks

Method of measurement

Goniometry

Intervention groups

1

Description

Intervention group: in experimental group core stability training was done with progression in training by increasing frequency of repetition from 10 to 20 repetitions according to patient condition. Core stability consisted of abdominal drawing in maneuver (ADIM) for contraction of transverses abdominis. After training of ADIM movements of pelvis with and without ADIM were performed. Pelvic control exercises comprise of anterior-posterior tilt, lateral shift and transverse rotation. Exercises are performed in upright posture. Bed exercises were bridging exercises. Progression were made from bridging with both legs to one leg and then side bridging. Curl up was done with progression from straight reaching, with diagonal reaching and with arms crossed. After one week multifidus exercises were performed. To activate multifidus patient was placed in quadruped position and was asked to raise his arms alternatively. Then he extended his legs alternatively. Side bridging was performed to activate internal, external obliques and quadratus lumborum. Patients performed curl ups for 15 degrees in crook lying position and maintained this position for 10 seconds. These activities were performed for 6 weeks, 5 times a week once in day

Category

Rehabilitation

2

Description

Control group: in conventional group patients were given conventional physical therapy including basic activity like range of motion exercises, mobility exercises like transfers and gait training, stretching, tone reduction, task oriented training and compensatory approach. Task oriented training emphasized on hemiplegic side. Goals were set to enhance mobility. For upper limb, different objects were placed on table and patient was asked to use them. These activities were performed for ADL training. For example combing, brushing, eating

activities were performed. Reaching and grasping activities were taught in sitting position. Mat activities were performed with special emphasis in sitting position. These activities were performed for 6 weeks, 5 times a week once in day

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Chaudhry Muhammad Akram teaching & research hospital

Full name of responsible person

Dr. Hafiz Sheraz Arshad

Street address

17 km raiwind road, Lahore

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Chaudhry Muhammad Akram Teaching & Research Hospital

Full name of responsible person

Dr Hafiz Sheraz Arshad

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Phone

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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

Chaudhry Muhammad Akram Teaching & Research Hospital

Proportion provided by this source

100

Public or private sector

Private

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
Chaudhry Muhammad Akram Teaching & Research Hospital
Full name of responsible person
Dr Hafiz Sheraz Arshad
Position
Consultant physiotherapist
Latest degree
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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
Yes - There is a plan to make this available
Analytic Code
Yes - There is a plan to make this available
Data Dictionary
Yes - There is a plan to make this available
Title and more details about the data/document
EFFECT OF CORE STABILIZATION EXERCISES IN IMPROVING TRUNK MOBILITY, FUNCTION, AMBULATION AND QUALITY OF LIFE IN STROKE PATIENTS
When the data will become available and for how long
6 months after publication
To whom data/document is available
People in academic and clinical settings
Under which criteria data/document could be used
Physiotherapy related persons can review
From where data/document is obtainable
higheraimz@hotmail.com is the email address where any one can contact They can access through email address
What processes are involved for a request to access data/document
Through email
Comments