

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

Effects of Proprioceptive Neuromuscular Facilitation Technique on Scapular Dyskinesia in Patients with Subacute Stroke

Protocol summary

Study aim

To see the effects of PNF Hold Relax technique on scapular dyskinesia in patients with subacute stroke and to compare the effects of D1 and D2 flexion patterns of proprioceptive neuromuscular facilitation on pain, range of motion, disability and scapular asymmetry in patients with subacute stroke

Design

Randomized Clinical Design was used. Both group taking same conservative treatment, with patterns of movement was changed in both groups. As "D1 flexion pattern" to one group and "D2 flexion pattern" to other group. Using "chit and draw" method as patient came according to chit treatment given to patient. Total 43 patient taking treatment, in which group A had 22 patient and group B had 21 patient.

Settings and conduct

Ibn-e-Siena Hospital & Research Institute, Multan.

Participants/Inclusion and exclusion criteria

Both male and female genders; age range between 40-60 years; stage of stroke attack with onset at least 5 months; patients developing unilateral scapular dyskinesia due to stroke assessed by lateral scapular slide test with type 1 scapular dyskinesia prominent infero-medial border of scapula. Exclusion criteria: patients with neurological deficit of the upper extremity; patients with any surgery of the upper extremity, active infections, hypermobility, calcification of the soft tissues, fragile skin patients with musculoskeletal injuries as upper limb fractures, dislocation, joint instability or any soft tissue injuries on affected side; other illnesses such supraspinatus, bicep tendinitis, fibromyalgia, frozen shoulder and arthritis that produced discomfort in the upper extremities; severe depression or other post-stroke symptoms.

Intervention groups

There were two groups, Intervention group 1 was named D1 flexion group and Intervention group 2 named D2 flexion group.

Main outcome variables

Shoulder ROM, Visual analogue scale; disability index

General information

Reason for update

Trail completed

Acronym

IRCT registration information

IRCT registration number: **IRCT20230706058687N1**

Registration date: **2023-10-10, 1402/07/18**

Registration timing: **prospective**

Last update: **2023-12-05, 1402/09/14**

Update count: **6**

Registration date

2023-10-10, 1402/07/18

Registrant information

Name

Rafia Abdul Rehman

Name of organization / entity

The university of Faisalabad

Country

Pakistan

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+92 307 7136100

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-09-19, 1402/06/28

Expected recruitment end date

2023-10-19, 1402/07/27

Actual recruitment start date

2023-10-11, 1402/07/19

Actual recruitment end date

2023-11-30, 1402/09/09

Trial completion date

2023-11-30, 1402/09/09

Scientific title

Effects of Proprioceptive Neuromuscular Facilitation Technique on Scapular Dyskinesia in Patients with Subacute Stroke

Public title

Effects of Proprioceptive Neuromuscular Facilitation Technique on Scapular Dyskinesia in Patients with Subacute Stroke

Purpose

Education/Guidance

Inclusion/Exclusion criteria**Inclusion criteria:**

Patients developing unilateral scapular dyskinesia due to stroke assessed by lateral scapular slide test Type 1 scapular dyskinesia prominent infero-medial border of scapula The 40-60 years of age, included both Male and Female Stroke with onset at least 05 months

Exclusion criteria:

Neurological deficit of the upper extremity Any surgery of upper extremity Active Infections, Hyper mobility, Calcification of the soft tissues, fragile skin Other illnesses such supraspinatus, bicep tendinitis, fibromyalgia, frozen shoulder and arthritis that produced discomfort in the upper extremities, etc Severe depression or other post-stroke symptoms, etc

Age

From **40 years** old to **60 years** old

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **46**

Actual sample size reached: **43**

Randomization (investigator's opinion)

Randomized

Randomization description

Consecutive allocation through lottery method a number of chits was first placed in a container. In this course chits were drawn randomly out of the container and according to chit subject was allocated to that group and treated.

Blinding (investigator's opinion)

Not blinded

Blinding description**Placebo**

Not used

Assignment

Parallel

Other design features

Purposive Sampling Technique

Secondary Ids

empty

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

Ethics Committee of the University of Faisalabad

Street address

No.P-11,Zeenat Block;Muslim Town1; Faisalabad, Pakistan

City

Faisalabad

Postal code

14496-14535

Approval date

2023-03-24, 1402/01/04

Ethics committee reference number

TUF/DR/SA/MSPP/2023/250

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

Sub-acute stage of stroke (3weeks to 6months)

ICD-10 code

I60-I69

ICD-10 code description

Cerebrovascular diseases

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

Visual Analogous Scale (VAS) was used instrument for assessing the characteristics of pain that a patient is experiencing

Timepoint

1, 2, 4 week

Method of measurement

This is gold standerd test having 0-10 measurement for mild, moderate, severe pain

2**Description**

The patients shoulder's range of motion were measured

Timepoint

1, 2, 4 week

Method of measurement

Flexion, Extension, Abduction, Internal Rotation, and External Rotation measured by using goniometer

Secondary outcomes

1

Description

Shoulder Pain and Disability evaluates pain as well as the other upper extremity functional activities shoulder pain and disability index had high reliability and validity values

Timepoint

1, 2, 4 week

Method of measurement

Shoulder Pain and Disability Index was measured it

Intervention groups

1

Description

Patients of group 1 after the baseline treatment were receiving scapular hold-relax technique applied in upper limb D1 flexion pattern. The antagonistic pattern in Diagonal 1 is flexion-adduction-external rotation that included 2 sets of 20 repetitions were performed with a 20 second rest period between the sets. Patient was lie on unaffected side while therapist was stand in line of desired motion. First therapist was give preparatory instructions to patients. In this exercise, the therapist's proximal hand grasps the patient's upper arm on the anteromedial surface, exerting resistance in the opposite direction of the movement. Simultaneously, the distal hand holds the patient's hand with the fingers positioned on the ulnar side and the thumb on the radial side, allowing the patient's wrist to flex towards the radial side. This particular hand positioning technique was referred to as the lumbrical grip. The total time for baseline treatment and D1 flexion exercise was at least 50 minutes.

Category

Rehabilitation

2

Description

Patients of group 2 after the baseline treatment were receiving scapular hold-relax technique applied in upper limb D2 flexion pattern. The antagonistic pattern in Diagonal 2 is flexion abduction-external rotation that included 2 sets of 20 repetitions was performed with 20 second rest period between sets. Patient was lie on unaffected side as therapist makes desired motion while standing in line. First therapist was give preparatory instructions to patients. The patient's hand's dorsal-radial surface held in the therapist's distal hand. In order to provide pressure in the opposite direction of movement, the proximal hand grasps the anterior-lateral surface of the upper arm from below. The total time for baseline treatment and D2 flexion exercise was at least 50 minutes.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Ibn-e-Siena Hospital & Research Institute, Multan

Full name of responsible person

Prof.Dr.Sajid Rashid, PT

Street address

6HC8+P2H, Northern Bypass, Block A Model Town, Multan, Punjab

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

The University of Faisalabad

Full name of responsible person

Rafia Abdul Rehman

Street address

Chungi No #6 Itfaq Colony Rajpoot Street House No16 Boasan Road Multan

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Multan

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60700

Phone

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Email

rafiarehman096@gmail.com

Grant name

No

Grant code / Reference number

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

No

Title of funding source

Self funding

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

Other

Person responsible for general inquiries

Contact

Name of organization / entity

The University of Faisalabad

Full name of responsible person

Rafia Abdul Rehman

Position

Student

Latest degree

Master

Other areas of specialty/work

Physiotherapy

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Person responsible for scientific inquiries

Contact

Name of organization / entity

Multan College of Physiotherapy, Multan

Full name of responsible person

Prof. Dr. Sajid Rashid, PT

Position

Physiotherapist

Latest degree

Ph.D.

Other areas of specialty/work

Physiotherapy

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Person responsible for updating data

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Position

Student

Latest degree

Master

Other areas of specialty/work

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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

Effects of Proprioceptive Neuromuscular Facilitation
Technique on Scapular Dyskinesia in Patients with
Subacute Stroke

When the data will become available and for how long

Data will be available for other people almost 6 months
after the completion of study

To whom data/document is available

Data will be available for other people almost 6 months
after the completion of study

Under which criteria data/document could be used

The data/document could be used by communicating
with the principle investigator Rafia Abdul Rehman; email
rafiarehman096@gmail.com

From where data/document is obtainable

Rafia Abdul Rehman; Gmail rafiarehman096@gmail.com

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

The data/document could be used by communicating
with the principle investigator Rafia Abdul Rehman;
Gmail rafiarehman096@gmail.com

Comments

NO