Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

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

Protocol summary

Study aim
To see the effects of PNF Hold Relax technique on scapular dyskinesis 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 dyskinesis 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

Phone
+92 307 7136100

Email address
2021-ms-pt-031@tuf.edu.pk

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 Dyskinesis in Patients with Subacute Stroke

Public title
Effects of Proprioceptive Neuromuscular Facilitation Technique on Scapular Dyskinesis in Patients with Subacute Stroke
Purpose
Education/Guidance
Inclusion/Exclusion criteria
Inclusion criteria:
Patients developing unilateral scapular dyskinesis 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 repitations 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 repitations 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

City
Multan

Postal code
60650

Phone
+92 300 6309825

Fax
+92 61 6782872

Email
sajid.rashid@mcpm.edu.pk

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

City
Multan

Postal code
60700

Phone
+92 307 7136100

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

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

City
Multan

Province
Punjab

Postal code
60700

Phone
+92 307 7136100

Email
rafiarehman096@gmail.com

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

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

City
Multan

Province
Punjab

Postal code
60700

Phone
+92 300 6309825

Email
sajid.rashid@mcpm.edu.pk

Person responsible for updating data

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

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

City
Multan

Province
Punjab

Postal code
60700

Phone
+92 307 7136100

Email
rafiarehman096@gmail.com

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 Dyskinesis 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