Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Comparative effectiveness of Maitland versus Mulligan mobilization technique for post-surgical mobility complications of distal radius fracture

Protocol summary

Study aim
To compare the effects of Maitland and Mulligan mobilization for post-surgical mobility complications of distal radius fracture and change the quality of life of participants after the treatment andreduce pain and increase functional mobility

Design
A single blinded randomized controlled trial having lottery method and simple convenient sampling

Settings and conduct
Patients were taken from Madinah Teaching Hospital (MTH) Faisalabad, District Headquarter Hospital (DHQ) Faisalabad and Allied Hospital Faisalabad. Group A patients received Maitland mobilization technique and Group B patients received Mulligan (MWM) technique while moist heat was given to both of the groups as a baseline treatment.

Participants/Inclusion and exclusion criteria
Subjects having distal radius fracture and who are gone through the process of open reduction and internal fixation. Moreover, participants whose cast has been removed after two months following the surgery of distal radius fracture. Participants having functional limitation and pain and with an average of about 30 to 60 years are included in the study. Exclusion criteria includes:• Osteopinea, Malunion of the fracture, Pre- existing inflammatory condition of the joints, Prolong steroid usage, Bony block, Hypermobility, Joint effusion, Haemarthrosis, Sudeck's dystrophy, Complex regional pain syndrome, Infection, Impaired sensation or circulation, Fracture site other than distal radius

Intervention groups
Group A (Maitland mobilization group)=Hot pack 15 minutes (baseline treatment) Maitland grade 1 and 2 (first two weeks) Grade 3 and 4 (next two weeks) Group B (Mulligan mobilization group)=Hot pack 15 minutes (baseline treatment) Mulligan mobilization (medial, lateral , anterior and posterior directions) (four weeks)

Main outcome variables
Pain, range of motion and functional limitation of wrist

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20220410054476N1**
Registration date: **2022-06-11, 1401/03/21**
Registration timing: **retrospective**

Last update: **2022-06-11, 1401/03/21**
Update count: **0**

Registration date
2022-06-11, 1401/03/21

Registrant information

Name
Neha Asad

Name of organization / entity
The University of Faisalabad

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dpt-fa14-068@tuf.edu.pk

Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2022-04-29, 1401/02/09

Expected recruitment end date
2022-05-30, 1401/03/09

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparative effectiveness of Maitland versus Mulligan mobilization technique for post-surgical mobility complications of distal radius fracture

Public title

Comparative effectiveness of Maitland versus Mulligan mobilization technique for post-surgical mobility complications of distal radius fracture

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Participants having distal radius fracture Participants undergone through the process of open reduction and internal fixation Participants whose cast has been removed after two months following surgery Participants willing to take part in the research Participants whose wrist mobility is restricted Participants having pain from 3 to 7 on VAS Participants having age from 30 to 60 years

Exclusion criteria:

Participants gone through the procedure of close reduction for fixing the fracture Osteopinea Malunion of the fracture Pre- existing inflammatory condition of the joints Prolong steroid usage Bony block Hypermobility Haemarthrosis Sudeck's dystrophy Complex regional pain syndrome Infection Impaired sensation or circulation Joint effusion

Age

From **30 years** old to **60 years** old

Gender

Both

Phase

N/A

Groups that have been masked

- Participant

Sample size

Target sample size: **32**

Randomization (investigator's opinion)

Randomized

Randomization description

The participants are allocated using simple randomization into two separate groups. The tools used in randomization are sealed envelopes, and allocation concealment was carried out. The randomization was done on an individual basis.

Blinding (investigator's opinion)

Single blinded

Blinding description

The participants will be unaware in which group they will be allocated after meeting the inclusion criteria an informed consent will be taken from them by the physiotherapist.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of The University of Faisalabad

Street address

4-km, Sargodha Road, University Town,Faisalabad,Pakistan

City

Faisalabad

Postal code

38000

Approval date

2022-04-07, 1401/01/18

Ethics committee reference number

TUF/DR/MSPP/321

Health conditions studied

1

Description of health condition studied

In the forearm region of upper extremity radius is the bone which is located on the lateral side of the forearm alongside ulna. The distal part of the radius is that part which is connected to the wrist. If any break or discontinuity comes in this part of the radius then it is usually referred to as fracture of the distal radius, and this fracture usually takes place when a person falls on an outstretched hand leading to impact of the wrist to the floor and resulting in fracture. This fracture can also take place if a person falls while the wrist is in a flexed position. It is also very common among people of older age and athletes. Complications such as impaired circulation, malunion, infection and complex regional pain syndrome can also occur after this fracture.

ICD-10 code

M84.333

ICD-10 code description

Stress fracture, right radius

Primary outcomes

1

Description

Pain in the distal part of radius as a result of fracture is the primary outcome

Timepoint

Pain will be measured at the start of the treatment sessions and then after four weeks when the treatment

sessions are finished

Method of measurement

Visual analogue scale will be used to measure pain

Secondary outcomes

1

Description

Range of motion and functional limitation of wrist

Timepoint

Range of motion and functional limitation of wrist will be measured before the treatment sessions and after four weeks when all the treatment sessions are given

Method of measurement

Goniometer and PRWE questionnaire will be used to measure the range of motion and functional limitation

Intervention groups

1

Description

Intervention group 1: Maitland mobilization (The participants present in this group first of all received heat using hot pack for a duration of about fifteen minutes as baseline treatment. After this making sure that the muscles were completely relaxed grade 1 and grade 2 of Maitland mobilization was applied to the wrist. These two grades were applied for first two weeks. After these two weeks the level of grade was increased to grade 3 and grade 4 and these two grades of Maitland mobilization were applied for the next two weeks).

Category

Rehabilitation

2

Description

Intervention group 2: Mulligan mobilization (The participants present in this group also first of all received heat using hot pack for a duration of about fifteen minutes as baseline treatment. After this making sure that the muscles were relaxed mobilization with movement technique of Mulligan mobilization was applied to the participants in the antero-posterior direction, medial direction and lateral direction at the level of the distal radio-ulnar joint. These mobilization techniques were applied for a time duration of about four weeks).

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Madinah Teaching Hopsital

Full name of responsible person

Medical superintendent MTH

Street address

Sargodha Road, University Town, Faisalabad, Pakistan

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Faisalabad

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2

Recruitment center

Name of recruitment center

Allied Hospital Faisalabad

Full name of responsible person

Medical Superintendent Allied Hospital

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Jail road adjacent Faisalabad Medical University, near Sargodha Road Faisalabad, Pakistan

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3

Recruitment center

Name of recruitment center

DHQ Hospital Faisalabad

Full name of responsible person

Medical Superintendent DHQ Hospital

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Near Railway station, Mall road, Faisalabad,Pakistan

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Email

info@dhq.org.pk

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

The University of Faisalabad

Full name of responsible person

Dr. Sidra Majeed;PT

Street address

4 km, Sargodha Road, University Town, Faisalabad, Pakistan

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Email
sidra.majeed@tuf.edu.pk
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
No
Title of funding source
The University of Faisalabad
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
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Full name of responsible person
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Person responsible for updating data

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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
Undecided - It is not yet known if there will be a plan to make this available
Analytic Code
Undecided - It is not yet known if there will be a plan to make this available
Data Dictionary
Undecided - It is not yet known if there will be a plan to make this available
Title and more details about the data/document
All collected deidentified participant data set for the

outcome measures

When the data will become available and for how long

4 months after publication

To whom data/document is available

People working in the academic institutions

Under which criteria data/document could be used

IPD and any additional supporting documents will be provided for research on similar topic and can be obtained by asking through the contact person mentioned below.

From where data/document is obtainable

Contact person: Syeda Neha Asad Rizvi Mobile number:+92 3247797647 E-mail address: nehaasad78@gmail.com

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

Data files will be provided after talking to the contact person mentioned above.

Comments