Clinical Trial Protocol
Iranian Registry of Clinical Trials

07 Nov 2026

Comparison of immediate effects following postro-anterior mobilization technique and Mulligan sustained natural apophyseal glide on chronic nonspecific low back pain

Protocol summary

Study aim

Comparison of immediate effect of sustained natural apophyseal glide and posterior-anterior techniques in non-specific chronic low back pain

Design

A concealed, randomized, double-blinded,multi-center, sham controlled clinical trial with a parallel group design of 45 patients

Settings and conduct

Three physiotherapy centers selected for sampling and 45 patients included to study after receiving informed consent. Each patient were entered to one of three groups (SNAG, PA Mobilization & sham) by block balanced randomization and received intervention by an expert manual therapist. All patients were assessed before and immediately after the intervention by another researcher who was blinded to patients allocation. Also all patients were blinded to groups because sham intervention was similar to SNAG technique.

Participants/Inclusion and exclusion criteria

Patients were included with localized chronic non-specific low back pain, age between 20 to 50 years, that their pain were worsened during flexion and L4 as most painful lumbar segment. Patients with any type of sensory or motor disorders, malignancy, osteoporosis or any type of contraindication of mobilization excluded.

Intervention groups

Sustained natural apophyseal glide (SNAG) on L4 during 4 sets of 6 repetitions with 30 seconds rest between sets with cranial direction. Posterior-anterior mobilization on L4 with grade 3 during 4 sets of 30 seconds duration with 30 seconds rest between them. Sham intervention likes SNAG technique, but only skin touch without mobilization and caudal direction during 2 sets of 4 repetitions.

Main outcome variables

Pin Pressure threshold (PPT) at 3 cm right to L3 spinous process, L3 dermatome, L4 dermatome and S1 dermatome; Flexion, Extention, Right and Left Lateral bendings and rotations range of motions; Pain at rest and during forward flexion.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20170117032020N2**
Registration date: **2018-07-04, 1397/04/13**
Registration timing: **retrospective**

Last update: **2018-07-04, 1397/04/13**
Update count: **0**

Registration date

2018-07-04, 1397/04/13

Registrant information

Name

Mohammad Javaherian

Name of organization / entity

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Recruitment status

Recruitment complete

Funding source

budget thesis of Rehabilitation of Tehran University of medical sciences.

Expected recruitment start date

2017-04-21, 1396/02/01

Expected recruitment end date

2017-07-06, 1396/04/15

Actual recruitment start date

2017-04-21, 1396/02/01

Actual recruitment end date

2017-09-11, 1396/06/20

Trial completion date

empty

Scientific title

Comparison of immediate effects following postro-anterior mobilization technique and Mulligan sustained natural apophyseal glide on chronic nonspecific low back pain

Public title

Comparison the efficacy of two manual therapy methods (postro-anterior & Mulligan sustained natural apophyseal glide) on low back pain

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

age between 20 to 50 Low back pain for more than 12 weeks Pain at center of lumbar region (with or without radiating to distal of buttock(s) region which intensify with forward flexion, but firs half flexion in painless Pain is equal to or greater than three by VAS Can understand the commands willingness to participate in the study

Exclusion criteria:

Disorders like malignancy, hemorrhagic, wound, infection, sensory-motor deficits or any other pathology Surgery or injection at lumbar region Osteoporosis or history of fracture at lumbar or lower extremity Any factor which prevents patient to lie prone (such as asthma or pacemaker) or limited range of motion in knee or ankle Diabetes melitus Any contraindication of mobilization Sever mental disorder Pregnancy Spondylolisthesis and sacralization Patient withdrawal of cooperation Patient discomfort and intolerance

Age

From **20 years** old to **50 years** old

Gender

Both

Phase

N/A

Groups that have been masked

- Participant
- Outcome assessor

Sample size

Target sample size: **45**

Actual sample size reached: **45**

Randomization (investigator's opinion)

Randomized

Randomization description

Block balanced randomization

Blinding (investigator's opinion)

Double blinded

Blinding description

Block balances randomization set before trial starting and was wrote in closed envelopes and sort them by number. Every participant that entered in study, therapist opened one envelope to find participant's grouping, but assessor was not aware about patient's group, because assessment was done in another room. Our sham treatment was very similar to Mulligan technique. therefore, No patient found that this was not real treatment, therefore patients and assessor were not aware about groups and only therapist was aware.

Placebo

Used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Tehran University of Medical Sciences

Street address

Conrner of Quds street- Keshavarz Street- Tehran

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Tehran

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1417653761

Approval date

2017-04-20, 1396/01/31

Ethics committee reference number

IR.TUMS.FNM.REC.1396.2102

Health conditions studied

1

Description of health condition studied

Low Back Pain

ICD-10 code

M54.5

ICD-10 code description

Low back pain

Primary outcomes

1

Description

Pain Pressure threshold

Timepoint

Before and immediately after intervention

Method of measurement

By pressure algometer at 3 cm right to L4 vertebrae, L3-L4-S1 dermatome of right lower extremity and left mid-deltoid

Secondary outcomes

1

Description
Pain
Timepoint
Before and immediately after intervention
Method of measurement
Visual analog scale

2

Description
Forward flexion
Timepoint
Before and immediately after intervention
Method of measurement
Inclinometery

3

Description
Backward extension
Timepoint
Before and immediately after intervention
Method of measurement
Inclinometery

4

Description
Right and Left side bending
Timepoint
Before and immediately after intervention
Method of measurement
Goniometry

5

Description
Right and left trunk rotation
Timepoint
Before and immediately after intervention
Method of measurement
Goniometry

Intervention groups

1

Description
Intervention 1: Mulligan Sustained natural apophyseal glide technique as intervention with 6 repetition during 4 sets and using mulligan belt
Category
Treatment - Other

2

Description
Intervention 2: Posterior-anterior mobilization technique as intervention30 seconds at 4 sets and 30 seconds rest between them.
Category
Treatment - Other

3

Description
Control group: Sham technique of SNAG4 repetition of 3 sets forward flexion with caudal direction touch
Category
Treatment - Other

Recruitment centers

1

Recruitment center
Name of recruitment center
Physiotherapy clinic, Rehabilitation faculty of Tehran university of medical sciences
Full name of responsible person
Seyyed Mohsen Mir
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2

Recruitment center
Name of recruitment center
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3

Recruitment center
Name of recruitment center
physiotherapy unit of Imam Sadegh clinic
Full name of responsible person
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Sponsors / Funding sources

1

Sponsor

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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
Tehran University of Medical Sciences

Proportion provided by this source
100

Public or private sector
Public

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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Position
PhD. Cand.

Latest degree
Master

Other areas of specialty/work
Physiotherapy

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

Undecided - It is not yet known if there will be a plan to make this available

Study Protocol

Undecided - It is not yet known if there will be a plan to make this available

Statistical Analysis Plan

Undecided - It is not yet known if there will be a plan to make this available

Informed Consent Form

Undecided - It is not yet known if there will be 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