

Clinical Trial Protocol

Iranian Registry of Clinical Trials

11 Sep 2026

Comparison of immediate effects following postero-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, Extension, 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 first 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

Inclinometry

3

Description

Backward extension

Timepoint

Before and immediately after intervention

Method of measurement

Inclinometry

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 intervention 30 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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No. 336, Corner of Safi-Alishah street, Enghelab Street

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Recruitment center

Name of recruitment center

Physiotherapy clinic at Baharlou Hospital

Full name of responsible person

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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

Name of organization / entity

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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

Tehran University of Medical Sciences

Full name of responsible person

Mohammad Javaherian

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