Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Comparing electromyographic changes, pelvic tilt and back strength in chronic low back pain sufferers with tight hamstring muscle in stretching exercise group and strength exercise in lengthened position group. A randomized controlled clinical Trial

Protocol summary

Summary

Objectives: The aim of this study is to investigate hamstring muscle EMG signals, pelvic tilt and back muscle strength changes in chronic LBP patients with hamstring tightness following stretching exerciseusual or strengthening exercise in lengthened position of this muscle. Design: The study is double blind for participants and therapists. Seventy-five 18-60 years chronic non-specific LBP patients with hamstring tightness will be assigned randomly into three groups (25 participants in each) receiving: 1- usual physiotherapy treatment (including: heat, TNS and therapeutic exercise) plus stretching exercise, 2- usual physiotherapy treatment plus strengthening exercise in lengthened position of muscle, and 3- a control group of subjects receiving only usual physiotherapy treatment. Interventions would be with the frequency of three sessions per week for 4 weeks and a total of 12 sessions. Hamstring stretching exercise will be done in lying position for 10 minutes each session. EMG signals from: 1- Hamstring 2- Longisimus 3- Iliocostalis muscles during trunk bending and in full trunk flexion (Flexion Relaxation) will be measured. For each muscle, by dividing root mean square (RMS) value at the end of flexion to RMS of one second of mid flexion, a ratio will be calculated which is the index being assessed. This variable, the RMS of muscles in standing, pelvic tilt and back muscle strength will be measured before and after the intervention too.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201507258035N2**
Registration date: **2015-09-16, 1394/06/25**
Registration timing: **prospective**
Last update:
Update count: **0**

Registration date

2015-09-16, 1394/06/25

Registrant information

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MohammadBagher Shamsi
Name of organization / entity
Kermanshah University of Medical Sciences
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Recruitment status

Recruitment complete

Funding source

Deputy of research, Kermanshah University of medical sciences

Expected recruitment start date

2015-10-23, 1394/08/01

Expected recruitment end date

2016-10-21, 1395/07/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparing electromyographic changes, pelvic tilt and back strength in chronic low back pain sufferers with tight hamstring muscle in stretching exercise group and strength exercise in lengthened position group. A

randomized controlled clinical Trial

Public title
Comparing usual physiotherapy treatment and stretching exercise for tight hamstring muscle in chronic low back pain sufferers
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria: having LBP for more than 3 months, pain intensity from 3 to 6 in visual analogue scale (VAS) and age of 18 to 60 years. Exclusion criteria: history of having pathology or anomaly in lower limbs such as malignancy, inflammatory diseases, severe osteoporosis, arthritis or bone diseases.
Age
From **18 years** old to **60 years** old
Gender
Both

Phase
N/A
Groups that have been masked
No information
Sample size
Target sample size: **75**
Randomization (investigator's opinion)
Randomized
Randomization description
Blinding (investigator's opinion)
Double blinded
Blinding description
Placebo
Not used
Assignment
Parallel
Other design features
The study is double blind as the participants and the tester would not be aware of the research groups.

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics committee of Kermanshah University of Medical Sciences
Street address
Kermanshah University of Medical Sciences, Shahid Beheshti Boulevard
City
Kermanshah
Postal code
Approval date
2015-06-23, 1394/04/02
Ethics committee reference number
kums.rec.1394.26

Health conditions studied

1

Description of health condition studied
Low Back Pain
ICD-10 code
M54.9
ICD-10 code description
Dorsalgia, unspecified

Primary outcomes

1

Description
Electromyografic amplitude of hamstring
Timepoint
Before and after the intervention
Method of measurement
with surface EMG equipment

2

Description
Pelvic tilt angle
Timepoint
Before and after the intervention
Method of measurement
With inclinometer

3

Description
Back muscles strength
Timepoint
Before and after the intervention
Method of measurement
With dynamometer

Secondary outcomes

empty

Intervention groups

1

Description
Stretching Exercise (Ten minutes of exercises for stretching the hamstring muscle each session)
Category
Rehabilitation

2

Description
Usual Physiotherapy Treatment (Including: heat, TNS and therapeutic exercise).
Category
Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center
Outpatient Clinic, Kermanshah University of Medical Sciences

Full name of responsible person
MohammadBagher Shamsi

Street address
Dolat Abad St.

City
Kermanshah

Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Vice Chancellor for Research, Kermanshah University of Medical Sciences

Full name of responsible person
Dr Farid Najafi

Street address
Shahid Beheshti Boulevard, Deputy of Research, Kermanshah University of Medical Sciences

City
Kermanshah

Grant name

Grant code / Reference number

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

Title of funding source
Vice Chancellor for Research, Kermanshah University of Medical Sciences

Proportion provided by this source
100

Public or private sector
empty

Domestic or foreign origin
empty

Category of foreign source of funding
empty

Country of origin

Type of organization providing the funding
empty

Person responsible for general inquiries

Contact

Name of organization / entity
Kermanshah University of Medical Sciences

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Position
PhD

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
empty

Study Protocol
empty
Statistical Analysis Plan
empty
Informed Consent Form
empty
Clinical Study Report
empty
Analytic Code
empty
Data Dictionary
empty