Clinical Trial Protocol
Iranian Registry of Clinical Trials

17 Sep 2026

evaluation of the acute effect of abdominal muscle taping on endurance tests in patients with non specific chronic low back pain

Protocol summary

Summary

Objectives: Non-specific chronic low-back pain (NCLBP) is an important public health challenge worldwide and, despite the volume of literature published on the subject, it is still a difficult-to-treat condition. Kinesio taping is one of the new methods induced in the treatment of low back pain. But it is under the question which is the impact of these procedure on the lumbar and abdominal muscles endurance. This study is aimed to identify the acute effects of kinesio tape on the abdominal muscle using endurance tests in NCLBP. Design: 26 patients with NCLBP and 26 healthy non-athletes were recruited. This was a single-blind crossover trial consisting of two sessions of taping (real and sham) with 2 days apart in 26 patients. The order of receiving the taping technique was conducted by dividing the participants into two groups (real/sham & sham/real) randomly. Setting and conduct: All subjects in three groups (one healthy and two patients groups) were evaluated by muscle endurance using three tolerance tests and were repeated pre/post kinesio taping in patients . Then in the next session, tests were repeated and patients were compared with healthy participants. Participants including major eligibility criteria: 1-Non-specific Chronic Low Back Pain (LBP persisting for more than 3 months in the absence of an underlying pathology); 2- age between 18 and 45 years; 3- pain between 3 and 6 on visual analogue scale (VAS), exclusion criteria: 1- history of abdominal surgery; 2- abdominal hernia; 3- pregnancy. Intervention: interventions were included two approaches: 1- three I-strips Kinesio tape applying to 50% of maximum recoil on the abdominal muscles 2- one I-strip tape applying under no tension in the area above the umbilicus. Main outcome measures variables: 1- Supine double straight-leg raise (SDSLR) test. 2- Supine isometric chest raise (SICR) test. 3- Abdominal drawing in maneuver.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2016110829264N2**
Registration date: **2016-11-29, 1395/09/09**
Registration timing: **retrospective**

Last update:
Update count: **0**

Registration date

2016-11-29, 1395/09/09

Registrant information

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Recruitment status

Recruitment complete

Funding source

investigator

Expected recruitment start date

2016-05-21, 1395/03/01

Expected recruitment end date

2016-11-08, 1395/08/18

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

evaluation of the acute effect of abdominal muscle taping on endurance tests in patients with non specific chronic low back pain

Public title
evaluation of the acute effect of abdominal muscle taping in patients with non specific chronic low back pain
Purpose
Treatment
Inclusion/Exclusion criteria
inclusion criteria: 1-Non specific Chronic Low Back Pain (LBP persisting for more than 3 months in the absence of an underlying pathology); 2- age between 18 and 45 years; 3- pain between 3 and 6 on visual analogue scale (VAS), exclusion criteria: 1- history of abdominal surgery; 2- abdominal hernia; 3- pregnancy.
Age
From **18 years** old to **45 years** old
Gender
Both

Phase
2
Groups that have been masked
No information
Sample size
Target sample size: **52**
Randomization (investigator's opinion)
Randomized
Randomization description
Blinding (investigator's opinion)
Single blinded
Blinding description
Placebo
Used
Assignment
Crossover
Other design features
this study is one part of master thesis with registration number of (PZ 2863 322) developed in 2011. this thesis is fully traceable with ethic registration number of 5299424 from Medical Ethics Committee of the tarbiat modares university.

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics Committee of the Tarbiat Modares university
Street address
Jalal Al Ahmad street ,Tehran.
City
Tehran
Postal code
Approval date
2011-02-26, 1389/12/07
Ethics committee reference number
5299424

Health conditions studied

1

Description of health condition studied
chrionic low back pain
ICD-10 code
M54.5
ICD-10 code description
Loin pain, Low back strain

Primary outcomes

1

Description
Supine isometric chest raise test
Timepoint
before and after taping
Method of measurement
The maximal hold time in seconds

2

Description
Supine double straight-leg raise test
Timepoint
before and after taping
Method of measurement
The maximal hold time in seconds

3

Description
Abdominal drawing in maneuver
Timepoint
before and after taping
Method of measurement
The maximal hold time in seconds

Secondary outcomes

empty

Intervention groups

1

Description
intervention group: 1- Supine isometric chest raise (SICR) test The participant's position was supine on the treatment table with the hands crossed on his/her chest. The hips and knees were flexed at 45° and the feet were placed flat on the table. The participant was requested to lift neck and upper trunk from the table until the inferior angles of scapulae had risen clear of the table and hold this position as long as possible. The maximal hold time was then recorded in seconds, and the test was terminated when the participant was unable to maintain the test position. 2-Supine double straight-leg raise

(SDSLR) test The participant was asked to lie in a supine position with the hips and knees extended. The hands were also placed in a relaxed position near his/her body. The participant was then instructed to raise both legs from the table to approximately 20° and hold them as long as possible without any tilting in the pelvis. During the test, pelvic tilt was monitored by an experienced physical therapist. The maximal hold time was recorded in seconds, and the test was terminated when the participant was unable to maintain knee clearance. 3-Abdominal drawing in maneuver This was done with the participant lying supine on the treatment table with the hands were placed in a relaxed position near the body. The hips and knees were flexed at 45° and the feet were placed flat on the table. In addition, a pressure biofeedback monitor (sphygmomanometer) was placed below the lumbar lordosis between the L1 and S1 vertebrae. The cuff of the sphygmomanometer was inflated to 20 mmHg using an air pump to fill the space between the lumbar spine and treatment table. The participant was then requested to contract his/her deep abdominal musculature by drawing the navel up in a cephalad direction and in toward the spine. The participant was instructed to push his/her back against the cuff and maintain the pressure at 40 (±10) mmHg as long as possible. The maximal hold time was recorded in seconds, and the test was terminated when the participant was unable to maintain the pressure at 40 (±10) mmHg. 4-Taping techniques The NCLBP participants were asked to lie in a supine position and their hips and knees were flexed at 45°. Depending on the NCLBP participant’s morphology, the length of three pieces of I-shaped strip Kinesio tape was determined by measuring the distance between two anterior superior iliac spines (ASISs) and measuring the distance between the middle one-third of the intermediate line of the iliac crest to the inferior border of the 10th rib. Afterward, the Kinesio tapes were applied to the internal oblique muscles in the direction of the fibers from the origin to insertion with approximately 50% of their maximal length tension. For the transversus abdominus muscle, the Kinesio tape was applied horizontally between the two ASISs with approximately 50% of maximal length tension . Then, all of the measurements were repeated again in the same manner as they had been performed before taping.

Category

Rehabilitation

2

Description

placebo group: 1- Supine isometric chest raise (SICR) test The participant's position was supine on the treatment table with the hands crossed on his/her chest. The hips and knees were flexed at 45° and the feet were placed flat on the table. The participant was requested to lift neck and upper trunk from the table until the inferior angles of scapulae had risen clear of the table and hold this position as long as possible. The maximal hold time was then recorded in seconds, and the test was terminated when the participant was unable to maintain the test position. 2-Supine double straight-leg raise (SDSLR) test The participant was asked to lie in a supine position with the hips and knees extended. The hands were also placed in a relaxed position near his/her body. The participant was then instructed to raise both legs from the table to approximately 20° and hold them as long as possible without any tilting in the pelvis. During the test, pelvic tilt was monitored by an experienced physical therapist. The maximal hold time was recorded in seconds, and the test was terminated when the participant was unable to maintain knee clearance. 3-Abdominal drawing in maneuver This was done with the participant lying supine on the treatment table with the hands were placed in a relaxed position near the body. The hips and knees were flexed at 45° and the feet were placed flat on the table. In addition, a pressure biofeedback monitor (sphygmomanometer) was placed below the lumbar lordosis between the L1 and S1 vertebrae. The cuff of the sphygmomanometer was inflated to 20 mmHg using an air pump to fill the space between the lumbar spine and treatment table. The participant was then requested to contract his/her deep abdominal musculature by drawing the navel up in a cephalad direction and in toward the spine. The participant was instructed to push his/her back against the cuff and maintain the pressure at 40 (±10) mmHg as long as possible. The maximal hold time was recorded in seconds, and the test was terminated when the participant was unable to maintain the pressure at 40 (±10) mmHg. 4-Taping techniques The NCLBP participants were asked to lie in a supine position and their hips and knees were flexed at 45°. Depending on the NCLBP participant’s morphology, the length of one pieces of I-shaped strip Kinesio tape was determined by measuring the distance between inferior border of the 10th rib bilaterally. Afterward, the Kinesio tape were applied to the inferior margin of 10th ribs above the umbilicus under no tension. Then, all of the measurements were repeated again in the same manner as they had been performed before taping.

Category

Treatment - Drugs

3

Description

healthy group 1- Supine isometric chest raise (SICR) test The participant's position was supine on the treatment table with the hands crossed on his/her chest. The hips and knees were flexed at 45° and the feet were placed flat on the table. The participant was requested to lift neck and upper trunk from the table until the inferior angles of scapulae had risen clear of the table and hold this position as long as possible. The maximal hold time was then recorded in seconds, and the test was terminated when the participant was unable to maintain the test position. 2-Supine double straight-leg raise (SDSLR) test The participant was asked to lie in a supine position with the hips and knees extended. The hands were also placed in a relaxed position near his/her body. The participant was then instructed to raise both legs from the table to approximately 20° and hold them as long as possible without any tilting in the pelvis. During the test, pelvic tilt was monitored by an experienced

physical therapist. The maximal hold time was recorded in seconds, and the test was terminated when the participant was unable to maintain knee clearance. 3- Abdominal drawing in maneuver This was done with the participant lying supine on the treatment table with the hands were placed in a relaxed position near the body. The hips and knees were flexed at 45° and the feet were placed flat on the table. In addition, a pressure biofeedback monitor (sphygmomanometer) was placed below the lumbar lordosis between the L1 and S1 vertebrae. The cuff of the sphygmomanometer was inflated to 20 mmHg using an air pump to fill the space between the lumbar spine and treatment table. The participant was then requested to contract his/her deep abdominal musculature by drawing the navel up in a cephalad direction and in toward the spine. The participant was instructed to push his/her back against the cuff and maintain the pressure at 40 (±10) mmHg as long as possible. The maximal hold time was recorded in seconds, and the test was terminated when the participant was unable to maintain the pressure at 40 (±10) mmHg

Category

Treatment - Drugs

Recruitment centers

1

Recruitment center

Name of recruitment center

School of medicine

Full name of responsible person

Mohammad Reza Pourahmadi

Street address

Tarbiat Modares university, Jalal Al Ahmad street.

City

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Vice Chancellor for Research and Technology, Tarbiat Modares University

Full name of responsible person

Mohammad Reza PourAhmadi

Street address

Madakaran alley, Shahnazari street, Madar squar.

City

Tehran

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 and Technology, Tarbiat Modares University

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

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Full name of responsible person

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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