Clinical Trial Protocol
Iranian Registry of Clinical Trials

09 Nov 2026

Efficacy of low level laser therapy on postendodontic pain in mandibular molars with symptomatic irreversible pulpitis

Protocol summary

Summary

Title of this study is the efficacy of low level laser therapy on postendodontic pain in mandibular molars with symptomatic irreversible pulpitis . Inclusion criteria :20-50 years old male or female who needed root canal therapy of mandibular molars exclusion criteria:root canal teeth, no history of drug use (antibiotic , NSAID , opioid ,corticosteroid) ,analgesic use during 12 hours before treatment, pregnancy, diabetes, malignancy, complicated anatomy ,close canals in graphy,.internal and external resorption,open apex ,periodontal disease , swelling , abscess , lesion in graphy ,sensitive in percussion .90 patiens (45 females, 45 males, mean age: 20-50years) with the demand for endodontic treatment on their permanent mandibular molars with symptomatic irreversible pulpitis)moderate to sever pain)who refered to Zahedan dentistry university and informed consent was obtained prior to the treatments. after endodontic treatment All patients were randomly selected and divided into two groups. In the laser group, In the control group patients received placebo without laser. The patients were blinded to the difference between these groups. All root canal therapies were performed in a single-visit treatment. After the standard chemomechanical preparation of the canals by recieproc(rotary) files. they were obturated using lateral compaction technique and AH26 sealer . laser was given to mandibular molars at a right angle to the buccul and lingual mucosa at the level of the apices for 60 seconds. Application of the laser probe was straight and close to mucosae overlying the apices.In group 1 after treatment The laser unit was a diode laser with a wavelength of 940 nm and output power 200 mv . Pain was evaluated using the Visual Analog Scale and patients were instructed to fill in the questionnaire at 6, 12, 24, and 48 AND 72 hours after root canal treatment.also a packet contains 6 Ipobrophen 400 mg were given to patient and they were advised to use them just in sever pain. The information collected from the questionnaires was about the prevalence and the intensity of post-treatment pain. The intensity of pain was evaluated on a numeric rating scale (Visual Analogue Scale) of 0 for “no pain” to 10 for “unbearable pain”. This method makes it possible to quantify the pain level.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2017052834193N1**
Registration date: **2017-11-01, 1396/08/10**
Registration timing: **registered_while_recruiting**

Last update:
Update count: **0**

Registration date

2017-11-01, 1396/08/10

Registrant information

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Name of organization / entity
Pardis
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Recruitment status

Recruitment complete

Funding source

Zahedan Dentistry University

Expected recruitment start date

2016-12-31, 1395/10/11

Expected recruitment end date

2017-12-31, 1396/10/10

Actual recruitment start date
empty
Actual recruitment end date
empty
Trial completion date
empty

Scientific title
Efficacy of low level laser therapy on postendodontic pain in mandibular molars with symptomatic irreversible pulpitis

Public title
low level laser therapy on postendodontic pain
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:20-50 years old male or female.needind root canal therapy of mandibular molars with irreversible pulpitis exclusion criteria:Root canal treatment before؛any antibiotics،NSAID used؛ analgesics used during 12 hours before the endodontic treatment ؛pregnancy ؛malignancy؛ diabetes؛complicated anatomy of root؛internal and external resorption؛ open apex؛periodontal disease؛ swelling and abscess؛radiographic lesion؛pain in percussion؛no occlusal contact.
Age
From **20 years** old to **50 years** old
Gender
Both

Phase
N/A
Groups that have been masked
No information
Sample size
Target sample size: **90**
Randomization (investigator's opinion)
Randomized
Randomization description
Blinding (investigator's opinion)
Double blinded
Blinding description
Placebo
Not used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Dental University
Street address
Zahedan
City
Zahedan
Postal code
Approval date
2016-11-21, 1395/09/01
Ethics committee reference number
IR.ZAUMS.REC.1395. 243

Health conditions studied

1

Description of health condition studied
pain after endodontic treatment
ICD-10 code
K04.4
ICD-10 code description
Acute apical periodontitis of pulpal origin

Primary outcomes

1

Description
PAIN
Timepoint
6.12.24.48.72 HOURS AFTER TREATMENT
Method of measurement
VAS

Secondary outcomes

1

Description
nothing
Timepoint
nothing
Method of measurement
nothing

2

Description
nothing
Timepoint
nothing
Method of measurement
nothing

Intervention groups

1

Description
Intervention group: laser was given to endodontically treated molars by virtue of a dental applicator positioned at a right angle to the mucosa at the level of the apices both the buccal and lingual mucosae overlying the apices of the target tooth. Total exposure time for each side was 30 seconds . diode laser with a wavelength of 940

nm ,constant wave with a mean output of 200 mw.

Category

Other

2

Description

in control group،laser used placebo (no laser)

Category

Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Dentistry University

Full name of responsible person

Dr Bita Aramesh

Street address

Azadegan Street

City

Zahedan

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Zahedan University of Medical Sciences

Full name of responsible person

Dr Noormohamad Bakhshani

Street address

Hesabi Square .Pardis

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Zahedan

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Zahedan 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

Dentistry University

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