Clinical Trial Protocol
Iranian Registry of Clinical Trials

10 Nov 2026

The evaluation of location of low level laser irradiation on reducing the pain after endodontic treatment in patients with symptomatic irreversible pulpitis

Protocol summary

Summary

The purpose of this study is the evaluation of effects of location of low level laser irradiation on reducing the pain after endodontic treatment in patients with symptomatic irreversible pulpitis. This study will be done on first and second mandibular molar of 150 patients between 18 - 60 years old with tooth decay and diagnosis of symptomatic irreversible pulpitis. patients will be asked to record their initial pain on VAS. then will be divided into to groups : experimental(50 person) and placebo(25 person) treatment group will be divided into 2 subgroups of "buccal irradiation" and "buccal and lingual irradiation" Distribution of gender and average age and the presence of spontaneous pain in the subgroups will be even. group 1 : laser placebo : sham irradiation group 2 : laser group : *once laser irradiation (diode 808nm) *twice laser irradiation (diode 808nm) endodontic treatment of all patients will be done by endodontic specialist, in one meeting, with one technique and in the interval between 75 to 90 minutes. after completion of endodontic treatment, in first subgroup, low level laser irradiates on buccal mucosa covering the mesial and distal roots for 80 seconds and in second subgroup the same procedure will be done on both buccal and lingual. patients will be asked to fill the VAS questionnaire at 4,8,24 and 48 hours after treatment. data will be compared and the final report will be prepared.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2017021432576N1**
Registration date: **2017-07-01, 1396/04/10**
Registration timing: **registered_while_recruiting**

Last update:
Update count: **0**

Registration date

2017-07-01, 1396/04/10

Registrant information

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Recruitment status

Recruitment complete

Funding source

Personal and School of Dentistry, Shahid Beheshti University of Medical Sciences

Expected recruitment start date

2017-06-22, 1396/04/01

Expected recruitment end date

2017-08-23, 1396/06/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The evaluation of location of low level laser irradiation on reducing the pain after endodontic treatment in patients with symptomatic irreversible pulpitis

Public title

The evaluation of effects of location of low level laser

irradiation on reducing the pain after endodontic treatment

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: Systemic healthy patients; Between 18 - 60 yrs; Have first or second mandibular molar with irreversible pulpitis; No periapical lesion in the radiography; Mobility less than 0.5mm at every direction; Probe less than 3mm in mesial and distal; Get a written consent from the patient Exclusion criteria: Existence of systemic disease; Lactation and pregnancy; Sensitivity to lidocaine; Absence of pulp exposure after decay removal; Errors during endodontic treatment

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)

Not randomized

Randomization description

Blinding (investigator's opinion)

Double blinded

Blinding description

Placebo

Used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Shahid Beheshti University of Medical Sciences

Street address

Shahid Beheshti University of Medical Sciences, Daneshju Blvd, Evin, Shahid Chamran Highway, Tehran

City

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Approval date

2017-02-18, 1395/11/30

Ethics committee reference number

IR.SBMU.RIDS.1395.357

Health conditions studied

1

Description of health condition studied

symptomatic irreversible pulpitis

ICD-10 code

K04.0

ICD-10 code description

Pulpitis

Primary outcomes

1

Description

pain

Timepoint

4,8,24 and 48 hours after treatment

Method of measurement

with visual analogue scale questionnaire

Secondary outcomes

empty

Intervention groups

1

Description

low level laser irradiation after treatment in first subgroup of experimental group: in this subgroup low level irradiation (Diode 808nm) will be done once for 80 seconds on buccal mucosa covering mesial and distal roots of the tooth.

Category

Treatment - Other

2

Description

low level laser irradiation after treatment in second subgroup of experimental group: in this subgroup low level irradiation (Diode 808nm) will be done twice on both buccal and lingual mucosa covering mesial and distal roots of the tooth for 80 seconds for per side.

Category

Treatment - Other

3

Description

sham irradiation after treatment in placebo group

Category

Placebo

Recruitment centers

1

Recruitment center

Name of recruitment center
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Sponsors / Funding sources

1

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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
School of Dentistry, Shahid Beheshti 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

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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