

Clinical Trial Protocol

Iranian Registry of Clinical Trials

04 Jul 2026

Effect of low level laser on pain reduce of infiltration injection

Protocol summary

Study aim

Effect of low level laser on pain reduce of infiltration injection

Design

The research was carried out using a randomized, double-blind, and randomized clinical trial. A total of 60 maxillary canine teeth were selected in selected patients, and teeth with caries, periapical lesions, extensive restorations, anatomical and left-anesthetic problems were excluded. The number of high carious teeth belonged to 30 individuals aged between 18 and 30 years old who were randomly selected. Due to the administration of lidocaine anesthetics, the subjects were systemically (cardiovascular, thyroid, and ... healthy and had no problems

Settings and conduct

The subjects studied were half the cardiopril of lidocaine / epinephrine Using the infiltration method on one side of the two randomly selected side, received first and received the same amount of anesthetic on the other side after the first injection. In both steps and before injection, the head tube of the handpiece of the low-power laser device was placed in the apex of the upper canine tooth that was to be injected. Of course, only one laser radiation was activated in such a way that the subjects were not aware of radiation irradiation. VAS visual measurements were performed using visual analogue VAS method. The data was collected by a person who, like the subjects, did not know about radiation from the lack of laser radiation at that injection time.

Participants/Inclusion and exclusion criteria

People with Healthy upper canine on both side Without systemic diseases Can participate in the study but People with systemic diseases or People with missed canine or People with unhealthy canine cant participate in the study

Intervention groups

30 teeth are exposed to laser irradiation and placed in the intervention group and 30 teeth are not exposed to

radiation and placed in the control group

Main outcome variables

Pain

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20190429043418N1**

Registration date: **2019-06-19, 1398/03/29**

Registration timing: **prospective**

Last update: **2019-06-19, 1398/03/29**

Update count: **0**

Registration date

2019-06-19, 1398/03/29

Registrant information

Name

Arman Aghazadeh dokandari

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 21 5585 1131

Email address

aghazadeh.arman@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2019-06-22, 1398/04/01

Expected recruitment end date

2019-07-01, 1398/04/10

Actual recruitment start date

2019-06-23, 1398/04/02

Actual recruitment end date

2019-07-01, 1398/04/10

Trial completion date

2019-07-01, 1398/04/10

Scientific title

Effect of low level laser on pain reduce of infiltration injection

Public title

Effect of low level laser on pain reduce of injection

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

People with Healty upper canine on both side
People Without systemic diseases
People aged 18 to 30 years old

Exclusion criteria:

People with systemic diseases
People with missed canine
People with unhealthy canine

Age

From **18 years** old to **30 years** old

Gender

Both

Phase

N/A

Groups that have been masked

- Participant
- Care provider
- Investigator
- Outcome assessor
- Data analyser

Sample size

Target sample size: **30**

More than 1 sample in each individual

Number of samples in each individual: **2**

2 Healty canine on both sides of maxilla

Actual sample size reached: **30**

Randomization (investigator's opinion)

Randomized

Randomization description

Sampling in this study was done randomly from among eligible individuals and the choice of the desired position for laser irradiation and first injection of lidocaine was done randomly.

Blinding (investigator's opinion)

Double blinded

Blinding description

In both steps and before injection, the head tube of the handpiece of the low-power laser device was placed in the apex of the upper canine tooth that was to be injected. Of course, only one laser radiation was activated in such a way that the subjects were not aware of radiation irradiation or laser irradiation. In both cases, visual measurement of pain using the visual analogue sampling method was performed by a person who, like the subjects, Radiation or non-radiation of the low-power laser was not known at the time of injection

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

Tehran University of Medical Sciences, Qods st, Keshavarz Blvd

City

Tehran

Province

Tehran

Postal code

1417653761

Approval date

2018-08-04, 1397/05/13

Ethics committee reference number

IR.TUMS.DENTISTRY.REC.1397.067

Health conditions studied

1

Description of health condition studied

Pain of infiltration injection

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Pain

Timepoint

Measurement of pain immediately after anesthetic injection

Method of measurement

Visual Analogue Scale

Secondary outcomes

1

Description

Time

Timepoint

Anesthetic duration

Method of measurement

Minutes

Intervention groups

1

Description

Intervention group : 30 teeth are exposed to laser irradiation and placed in the intervention group

Category

Treatment - Other

2

Description

Control group : 30 teeth are not exposed to radiation and placed in the control group

Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center

laser department of denistry school of Tehran
University of Medical Sciences International Campus

Full name of responsible person

Arman Aghazadeh Dokandari

Street address

Dentistry school of Tehran University of Medical
Sciences International Campus,Mahan St,Khani abad
Town,Tehran

City

Tehran

Province

Tehran

Postal code

1416753955

Phone

+98 21 5585 1131

Email

ic@tums.ac.ir

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Tehran University of Medical Sciences

Full name of responsible person

Arman Aghazadeh Dokandari

Street address

Dentistry school of Tehran University of Medical
Sciences International Campus,Mahan St,Khani abad
Town,Tehran

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1417653761

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+98 21 5585 1131

Email

ic@tums.ac.ir

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

Private

Domestic or foreign origin

Domestic

Category of foreign source of funding

empty

Country of origin

Type of organization providing the funding

Persons

Person responsible for general inquiries

Contact

Name of organization / entity

Tehran University of Medical Sciences

Full name of responsible person

Arman Aghazadeh Dokandari

Position

Student

Latest degree

A Level or less

Other areas of specialty/work

Dentistry

Street address

Dentistry school of Tehran University of Medical
Sciences International Campus,Mahan St,Khani abad
Town,Tehran

City

Tehran

Province

Tehran

Postal code

1417653761

Phone

+98 21 5585 1131

Email

aghazadeh.arman@gmail.com

Person responsible for scientific inquiries

Contact

Name of organization / entity

Tehran University of Medical Sciences

Full name of responsible person

Arman Aghazadeh Dokandari

Position

Student

Latest degree

A Level or less

Other areas of specialty/work

Dentistry

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Dentistry school of Tehran University of Medical Sciences International Campus, Mahan St, Khani abad Town, Tehran

City

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Province

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1417653761

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+98 21 5585 1131

Email

aghazadeh.arman@gmail.com

Person responsible for updating data

Contact

Name of organization / entity

Tehran University of Medical Sciences

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Arman Aghazadeh Dokandari

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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