Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Evaluation of effect of low level laser on the rate of orthodontic tooth movement in human

Protocol summary

Summary

Objective: in this study the effect of low level laser therapy (LLLT) on the rate of orthodontic tooth movement in human was evaluated. Methods & Materials: In this clinical trial study 12 patients were included which had extracted upper first premolars and required canine retraction into extraction site. While in both sides, canines were retracted by Niti coil spring, one side was exposed with GaAlAs laser (890 nm). LLLT was done on the buccal and palatal mucosa by slow movement of probe. Impression and cast fabrication performed in the beginning of retraction and one and two months later. However laser therapy had done just in the first month of retraction. Amount of retraction on the cast comparing with reference plaque fabricated on the rogae was measured by using digital caliper. Two days after beginning of retraction, the patients were asked about their pain on both sides by use of VAS scale.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT138804022066N1**
Registration date: **2009-07-28, 1388/05/06**
Registration timing: **retrospective**

Last update:
Update count: **0**

Registration date

2009-07-28, 1388/05/06

Registrant information

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Recruitment status

Recruitment complete

Funding source

vice chancellor for research, Tehran University of Medical Sciences

Expected recruitment start date

2008-05-10, 1387/02/21

Expected recruitment end date

2009-05-10, 1388/02/20

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Evaluation of effect of low level laser on the rate of orthodontic tooth movement in human

Public title

Evaluation of effect of laser on tooth movement

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: patients who had been extracted upper first premolars for fixed orthodontic therapy Exclusion criteria: 1)having systematic diseases effecting bone remodeling 2)taking drugs effecting bone remodeling 3)facial asymmetry

Age

From **12 years** old to **25 years** old

Gender

Both

Phase
N/A
Groups that have been masked
No information
Sample size
Target sample size: **12**
Randomization (investigator's opinion)
N/A
Randomization description
Blinding (investigator's opinion)
Single 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 Tehran university of medical sciences
Street address
Tehran university of medical sciences, Gods street
City
Tehran
Postal code
Approval date
1988-01-03, 1366/10/13
Ethics committee reference number
8379

Health conditions studied

1

Description of health condition studied
Laser therapy
ICD-10 code
W90
ICD-10 code description
Exposure to other nonionizing radiation

Primary outcomes

1

Description
acceleration of the rate of canine retraction
Timepoint
4 weeks
Method of measurement
measurement by digital caliper on the patient's cast

Secondary outcomes

1

Description
decreasing of pain
Timepoint
2 days
Method of measurement
VAS test

Intervention groups

1

Description
low level laser therapy on intervention side
Category
Treatment - Other

2

Description
low level laser in shut off mode on control side
Category
Placebo

Recruitment centers

1

Recruitment center
Name of recruitment center
Dental research center-Tehran university of medical science
Full name of responsible person
Street address
City
Tehran

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Vice chancellor for research, Tehran University of Medical Sciences
Full name of responsible person
Dr.Yunesian
Street address
Tehran university of medical sciences, Gods street
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, Tehran 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

Tehran university of medical sciences

Full name of responsible person

Dr. Majid Mahmoudzadeh Darbandi

Position

Resident of orthontics department

Other areas of specialty/work

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Person responsible for scientific inquiries

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Web page address

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