Clinical Trial Protocol
Iranian Registry of Clinical Trials

10 Jun 2026

Short term effect of low-level laser therapy on tooth stability after orthodontic treatment

Protocol summary

Summary

Research is randomized, not blinded, without using placebo. Inclusion criteria are patients without extraction and with moderate crowding (5-9 mm), rotated teeth less than 30 degrees. Group 1: who are treating with a diode laser to alleviate relaps. The laser emit a wavelength of 810 nm and operate in continuous wave mode with maximum power of 200 mW from the mesial maxillary canine of one side to the opposite side. The laser probe will be position in contact with gingival tissue in the coronal third of the root, and the irradiation will perform on 4 points around the tooth, including mesiobuccal, distobuccal, mesiolingual, and distolingual areas. The laser irradiates for 50 seconds per point, and thus each tooth receive 200 seconds of laser irradiation. Laser will irradiate 2 times before removing arch wire (7days and immediately before removing arch wire). Immediately after bracket debonding, Dental impression will be taken. After 4 months of using fulltime retainer, impression will be taken. The patients are asked to use retainer about 8 hour per day for one month. The fourth impression will be taken after 6 months after removing arch wire. The second group will not be undergoing any laser radiation. Crowding will measure.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2017053034061N1**
Registration date: **2017-06-07, 1396/03/17**
Registration timing: **registered_while_recruiting**

Last update:
Update count: **0**

Registration date

2017-06-07, 1396/03/17

Registrant information

Name
Batoolalsadat Mousavi fard
Name of organization / entity
Kerman University of Medical Science
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Iran (Islamic Republic of)
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Recruitment status

Recruitment complete

Funding source

investigator

Expected recruitment start date

2017-04-03, 1396/01/14

Expected recruitment end date

2017-09-21, 1396/06/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Short term effect of low-level laser therapy on tooth stability after orthodontic treatment

Public title

Laser effect on short term stability after orthodontic treatment

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: 1) cl 1 malocclusion 2) without extraction and moderate crowding (5-9mm) 3) rotated teeth less than 30 4) no systemic disease 5) good oral hygiene 6) not consuming medicine that interrupted

bone metabolism Exclusion criteria: 1) diseases that laser irradiation is contraindicated 2) Gingival and periodontal inflammation

Age
From **15 years** old to **30 years** old

Gender
Both

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **14**

Randomization (investigator's opinion)
Randomized

Randomization description

Blinding (investigator's opinion)
Not blinded

Blinding description

Placebo
Not used

Assignment
Parallel

Other design features
Simple random sampling

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Kerman university of medical sciences

Street address
Kerman University of Medical Sciences, Medical University Campus, Haft-Bagh Highway, Kerman

City
kerman

Postal code

Approval date
2017-04-22, 1396/02/02

Ethics committee reference number
IR.kmu.REc.1395.932

Health conditions studied

1

Description of health condition studied
Crowding

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description
Crowding

Timepoint
Immediate,4,5,6 months after treatment

Method of measurement
Milimeter by software

Secondary outcomes

1

Description
Crowding

Timepoint
Immediately,4,5,6 months after treatment

Method of measurement
Milimeter by software

Intervention groups

1

Description
Intervention group: The laser emitted a wavelength of 810 nm and operated in continuous wave mode with maximum power of 200 mw. The laser irradiate for 50 seconds per point, and thus each tooth receive 200 seconds of laser irradiation. Control group: no intrvention

Category
Treatment - Other

2

Description
Control group: without using placebo

Category
N/A

Recruitment centers

1

Recruitment center

Name of recruitment center
Orthodontic Department of Dental Faculty

Full name of responsible person

Street address

City
kerman

Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Vice chancellor research, Kerman university of medical sciences

Full name of responsible person
Abbas Pardakhti

Street address
Kerman University of Medical Sciences, Medical University Campus, Haft-Bagh Highway, kerman, Ira
City
kerman
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Vice chancellor research, Kerman 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