Clinical Trial Protocol
Iranian Registry of Clinical Trials

16 Sep 2026

Evaluation of the effect of two low level diode lasers 660nm and 810nm in the treatment of dentin hypersensitivity

Protocol summary

Summary

The aim of this study was to determine the effect of low dose nz660 and nm810 lasersdiod in treatment of dentinal hypersensitivity in a double-blind randomized clinical trial. Patients with cervical dentin hypersensitivity were included in the study, and smokers or rotten teeth were excluded from the study. In order to record the pain intensity of 96 dentin hypersensitivity teeth in 7 patients, the male and female entered the study based on entry and exit criteria, stimulation was performed using dry ice spray on a swab and VAS index, and the compliance was based on the primary VAS of the teeth And then a randomization took place. The sensitive teeth of each patient were entered into one of the groups: 660 nm diode lasers, 810 nm diode lasers and the control group. Each patient's teeth were grouped in order to apply each of the three groups in each patient, then the 660 nm laser diode with a power of 30 mW and 810 nm with a power of 100 mW and both 120 seconds continuous and return and return in the sensitive areas of radiation Given. Blind laser radiation simulation was used in Blind Control group. Evaluation of pain before and after all four sessions of laser treatment that lasted for one week, one week, 30 days and 60 days after the end of treatment by VAS method.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2017062022699N4**
Registration date: **2017-07-31, 1396/05/09**
Registration timing: **retrospective**

Last update:
Update count: **0**

Registration date

2017-07-31, 1396/05/09

Registrant information

Name

Reza Birang

Name of organization / entity

Country

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Recruitment status

Recruitment complete

Funding source

Deputy Dean for research, Faculty of Dentistry, Isfahan university of Medical Sciences

Expected recruitment start date

2016-10-22, 1395/08/01

Expected recruitment end date

2017-03-10, 1395/12/20

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Evaluation of the effect of two low level diode lasers 660nm and 810nm in the treatment of dentin hypersensitivity

Public title

Evaluation of the effect of two low level diode lasers 660nm and 810nm in the treatment of dentin hypersensitivity

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: Patients referring to dental faculty of Isfahan University of Medical Sciences in 1395-96 who

have cervical dentin hypersensitivity in at least three teeth in three separate half-jaws. Teeth that are sensitive to cold stimulant testing. Exclusion criteria: Caries, restored teeth, crown fracture, dental cracks, smokers, active periodontal disease, pregnancy, patients who have taken analgesics for 72 hours before the laser treatment, patients who have received anti-Sensitivities toothpaste over the past 6 weeks.

Age
No age limit

Gender
Both

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **96**

Randomization (investigator's opinion)
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 Isfahan University of Medical Sciences,Dental School

Street address
Hezar Jarib, Dental School, Isfahan University Of Medical Sciences

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Isfahan

Postal code
8174673461

Approval date
2017-06-18, 1396/03/28

Ethics committee reference number
IR.MUI.REC.1396.3.228

Health conditions studied

1

Description of health condition studied
dental hypersensitivity

ICD-10 code
Z01.2

ICD-10 code description
Dental examination

Primary outcomes

1

Description
Initial improvement of dental hypersensitivity

Timepoint
At intervals of one week for a month before and after laser radiation

Method of measurement
According to the visual analogue scale

Secondary outcomes

1

Description
Long-term improvement in dental hypersensitivity

Timepoint
One week, 30 days and 60 days after the last laser radiation session

Method of measurement
According to the visual analogue scale

Intervention groups

1

Description
Radiation with 660 nm diode lasers with a power of 30 mW in contact and perpendicular to the tooth surface, for 120 seconds, continuous irradiation and returning in four sessions with a one week interval

Category
Treatment - Other

2

Description
Radiation with a low-power 810 nm diode laser with a 100 mW power ,in contact and perpendicular to the tooth surface, for 120 seconds, continuous irradiation and returning in four sessions with a one week interval.al

Category
Treatment - Other

3

Description
In the control group, the teeth were not exposed to laser irradiation, and the direction of blindness of the study group was limited to simulating the conditions under the radiation beam.

Category
Placebo

Recruitment centers

1

Recruitment center

Name of recruitment center
Faculty of Dentistry, Isfahan University of Medical sciences

Full name of responsible person
Mahdi Kachouei

Street address
Hezarjarib St.

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Vice Chancellor for research of Isfahan University of Medical Sciences

Full name of responsible person
Dr Reza Birang

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Hezarjarib St,Isfahan University of Medical Sciences,Research Deputy

City
Isfahan

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 of Isfahan 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
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dental Intern

Other areas of specialty/work

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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