Clinical Trial Protocol
Iranian Registry of Clinical Trials

16 Sep 2026

Efficacy of 940 nm diode laser on the treatment of dentin hypersensitivity in periodontal maintenance patients

Protocol summary

Summary

This study will include 45 teeth with dentin hypersensitivity, using clinical and split mouth technique, in patients with periodontal diseases who have undergone periodontal care for at least a year. Dentin hypersensitivity will be evaluated using air and tactile stimulation tests. The study will be double-blind. Clinical applicability of the treatments will be evaluated by following process; the assessments will be recorded immediately following the treatment at minute 15 and in day 2, 7, and 30. 1-Air stimulus application test: the tooth being studied will be isolated and dried. Cold air is administered on the tooth surface at the distance of 1cm. Patient response will be recorded using visual analog scale (VAS). 2-Tactile stimulus application test: stimulation is made by periodontal probe scraping the radicular surface of exposed tooth. Patient response is recorded with VAS.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2015102624715N1**
Registration date: **2016-05-18, 1395/02/29**
Registration timing: **retrospective**

Last update:
Update count: **0**

Registration date

2016-05-18, 1395/02/29

Registrant information

Name

Jamshid Poursamimi

Name of organization / entity

Qazvin University of Medical Sciences

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Iran (Islamic Republic of)

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Recruitment status

Recruitment complete

Funding source

Qazvin University of Medical Sciences

Expected recruitment start date

2016-01-11, 1394/10/21

Expected recruitment end date

2016-05-05, 1395/02/16

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Efficacy of 940 nm diode laser on the treatment of dentin hypersensitivity in periodontal maintenance patients

Public title

Efficacy of 940 nm diode laser on the treatment of dentin hypersensitivity in periodontal maintenance patients

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: individuals who have passed first phase of periodontal treatments and have dentin hypersensitivity in teeth with no caries, fracture; any clear tooth crack, fillings and periapical lesion, which will respond to both air and tactile stimuli application tests. Exclusion criteria: individuals with systemic diseases; allergy to materials used in the study; smokers; individuals with active periodontal diseases; pregnant and lactating women; patients who have received treatments related to increased tooth sensitivity; teeth

with occlusal overload and recent occlusal re-adjustment therapy.

Age
From **22 years** old to **57 years** old

Gender
Both

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **45**

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
Qazvin University of Medical Sciences

Street address
Qazvin Dental Faculty

City
Qazvin

Postal code
3328554356

Approval date
2015-09-30, 1394/07/08

Ethics committee reference number
IR.QUMS.REC.1394.141

Health conditions studied

1

Description of health condition studied
Dentin hypersensitivity

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description
Dentin hypersensitivity

Timepoint
The assessments will be recorded immediately following the treatment at minute 15 and in day 2, 7, and 30.

Method of measurement
VAS(visual analogus scale)

Secondary outcomes

empty

Intervention groups

1

Description
In the first group, laser diodide of 940 nm wavelengths with uninitiated 400mm fibers and power 1.5 Watt with continuous radiation mode of two 30 seconds intervals will be used.

Category
Treatment - Other

2

Description
In secound group(positive control), potassium fluoride gel 2% will be used.

Category
Treatment - Drugs

3

Description
In placebo group, both laser and potassium fluoride gel 2% will be placebo

Category
Placebo

Recruitment centers

1

Recruitment center

Name of recruitment center
Qazvin Dental Faculty

Full name of responsible person
Tahere Pourseyedian

Street address
Qazvin

City
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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Qazvin University of Medical Sciences

Full name of responsible person
Dr. Taghi Naserpoor

Street address

Qazvin
City
Qazvin
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Qazvin 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