

Clinical Trial Protocol

Iranian Registry of Clinical Trials

06 Jun 2026

Comparison of diod laser and Er:Cr:YSGG laser on tooth hypersensitivity

Protocol summary

Summary

the aim of this study is the comparison between Diod and Er,Cr:YSGG laser on tooth hypersensitivity .in addition we want to asses the longevity of two lasers in one month period.the practical goal of this study is using the laser efficiently in tooth hypersensitivity treatment. the patients that at least have two nonadjacent hypersensitive teeth with visual analog scale above 4 and have no other deformity or pathological condition on their hypersensitive tooth can enter our study .the patients must not have any periodontal surgery or therapy in past 3 months. the teeth are divided into two groups naming e and d. group d is going to be irradiated with 940nm Diod laser and group e is going to be irradiated with 2780nm Er,Cr:YSGG laser with .25 watt power.both of the lasers are going to be irradiated on teeth in non contact method. the tooth selection for irradiation with each of the lasers is going to be done with block randomized method. we evaluate tooth sensitivity before exposure ,instantly after exposure ,one week and one month after exposure with air spray from the distance of 2mm and 45-60psi pressure for 35 seconds and pulling the dental sound gently on the exposed dentin.the patients are not informed about the type of the laser that is going to be irradiated on each of their tooth in addition the person who give VAS index is not informed about the lasers type too.we will blind our study in this way. this study will be done in Randomized clinical trial method .in order to analyse the pain in the study group after different times.in accordance with allegiance of the data from normal distribution, we will use two way repeated ANOVA method.in according to Yims HG study and the use of SPSS two sample t test equivalence option by considering $\alpha=.05$ and $\beta=.2$ limitation equivalence about +2 and average standard deviation =1.4 the minimum sample required is 17 cases.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2016081529369N1**

Registration date: **2016-11-06, 1395/08/16**

Registration timing: **registered_while_recruiting**

Last update:

Update count: **0**

Registration date

2016-11-06, 1395/08/16

Registrant information

Name

Seyyed Yousof Mousavi Salehi

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 21 6603 2482

Email address

sy-mousavis@student.tums.ac.ir

Recruitment status

Recruitment complete

Funding source

Tehran University of Medical Sciences

Expected recruitment start date

2015-06-22, 1394/04/01

Expected recruitment end date

2016-12-25, 1395/10/05

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of diod laser and Er:Cr:YSGG laser on tooth

hypersensitivity

Public title

tooth sensitivity treatment with laser

Purpose

Treatment

Inclusion/Exclusion criteria

inclusion criteria: patient with these criteria enter our study: patient with at least two hypersensitive teeth with visual analog scale above 4 exclusion criteria: have no destructive cotnanct have no cracked tooth have no active periodontal disease does not use specific drugs have no facet or attrition have no pulpitis caries or bad restoration and does not pregnant and

Age

No age limit

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: 17

Randomization (investigator's opinion)

Randomized

Randomization description**Blinding (investigator's opinion)**

Double blinded

Blinding description**Placebo**

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

Ethics Committe of Tehran University of Medical Sciences

Street address

Central Office ofTehran University of Medecal Sciences, Ghods street, Enghelab square, Tehran

City

Tehran

Postal code**Approval date**

2015-09-23, 1394/07/01

Ethics committee reference number

ir.tums.rec1394.1559

Health conditions studied**1****Description of health condition studied**

tooth hypersensitivity

ICD-10 code

Z40-Z54

ICD-10 code description

Persons encountering health services in other circumstances

2**Description of health condition studied**

Tooth hypersensitivity

ICD-10 code

70-Z76

ICD-10 code description

Persons encountering health services in other circumstances

Primary outcomes**1****Description**

hypersensetivity

Timepoint

before exposure, instance after exposure, one week after and one month after

Method of measurement

with visual analog scale system

Secondary outcomes**1****Description**

durability of laser exposure

Timepoint

one week after and one month after exposure

Method of measurement

visual analog scale

Intervention groups**1****Description**

group 1: laser exposure on hypersensitive tooth in cervical region for 1 minute with 940 nm diod laser .

Category

Treatment - Devices

2**Description**

group 2:laser expose on hypersensitive tooth cervical region for 1 minute with 2780nm Er:Cr:YSGG with .25 w power

Category

Treatment - Devices

Recruitment centers

1

Recruitment center

Name of recruitment center

Tehran University of Medical Sciences

Full name of responsible person

Seyyed Yousof Mousavi

Street address

Dentistry Faculty of Tehran University of Medical Sciences, Amirabad, Tehran

City

Tehran

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Tehran University of Medical Sciences

Full name of responsible person

Dr Amirreza Rokn

Street address

Tehran University of Medical Sciences, Amirabad, Tehran

City

Tehran

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

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

seyyed yousof mousavi salehi

Position

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Other areas of specialty/work

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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