Clinical Trial Protocol
Iranian Registry of Clinical Trials

10 Nov 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 pulpit 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 hypersensivity
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
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Person responsible for scientific inquiries

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Person responsible for updating data

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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