

Clinical Trial Protocol

Iranian Registry of Clinical Trials

01 Nov 2026

Compariative evaluation of effect of chemical and Er,Cr:YSGG -assisted laser- bleaching on increasing of dentin sensitivity

Protocol summary

Study aim

Compariative evaluation of effect of chemical and Er,Cr:YSGG -assisted laser- bleaching on increasing of dentin sensitivity

Design

This clinical trial study will do in form of split mouth on 12 teeth (6 anterior teeth in maxilla and 6 anterior teeth in mandible) in 5 volunteer persons who are match in age with each other that will refer to restorative department of Hamedan dental faculty (totally 60 teeth will come to study)

Settings and conduct

In each person first chemical bleaching will do on 6 anterior teeth in one jaw with 40% bleaching gel for 45 minutes as factory direction on canine to canine teeth , then same bleaching gel will apply to 6 anterior teeth in apposite jaw and will use Er,Cr:YSGG laser. In both method dentin tooth sensitivity will measure with VAS chart before treatment , immediately after treatment, 24 hours , one week and one month after treatment after applying 5ml cold air with air pressure in 2 seconds from 1 cm of cervical of buccal part of the teeth

Participants/Inclusion and exclusion criteria

Inclusion : Having 18 years old at least, Having good general and oral health , Having 12 anterior teeth without filling and caries, Having no tooth sensitivity, No use of antisensitivity productions at least 6 weeks before treatment, No use of analgesics 72 hours before treatment
Exclusion factors : Women in pregnancy and nursing , Severe internal discolouration (Tetracycline stain, Felorosis, pulpless teeth) , Having history of tooth whitening and antisensitivity treatment , Having tooth sensitivity , Having poor general and oral health , Smoking , Having periodontal disease or undertreatment , Having parafunctional habits like bruxism , Usage of orthodontics appliance

Intervention groups

Chemical bleaching and Er,Cr:YSGG -assisted laser- bleaching

Main outcome variables

Increase decrease and no change in dentin sensitivity

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20190106042255N1**

Registration date: **2019-03-03, 1397/12/12**

Registration timing: **registered_while_recruiting**

Last update: **2019-03-03, 1397/12/12**

Update count: **0**

Registration date

2019-03-03, 1397/12/12

Registrant information

Name

Maryam Poulaki

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 81 3831 6830

Email address

poulaki.mp7@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2019-02-20, 1397/12/01

Expected recruitment end date

2019-04-19, 1398/01/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparative evaluation of effect of chemical and Er,Cr:YSGG -assisted laser- bleaching on increasing of dentin sensitivity

Public title

Comparative evaluation of effect of chemical and Er,Cr:YSGG -assisted laser- bleaching on increasing of dentin sensitivity

Purpose

Treatment

Inclusion/Exclusion criteria**Inclusion criteria:**

Having 12 anterior teeth without filling and caries in upper and lower jaw Having 18 years old at least Having no tooth sensitivity No use of antisensitivity productions at least 6 weeks before treatment No use of analgesics 72 hours before treatment having good general and oral health

Exclusion criteria:

Women in pregnancy and nursing Severe internal discolouration (Tetracycline stain,Felerosis,pulpless teeth) Having history of tooth whitening and antisensitivity treatment Having tooth sensitivity Having poor general and oral health Smoking Having periodontal disease or undertreatment Having parafunctional habits like bruxism Usage of orthodontics appliance

AgeFrom **18 years** old**Gender**

Both

Phase

N/A

Groups that have been masked*No information***Sample size**Target sample size: **5**

More than 1 sample in each individual

Number of samples in each individual: **12**

6 anterior teeth in maxilla and 6 anterior teeth in mandible

Randomization (investigator's opinion)

N/A

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

Not blinded

Blinding description**Placebo**

Not used

Assignment

Single

Other design features**Secondary Ids**

empty

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

Ethics committee of Hamedan University of Medical Sciences

Street address

Shahid Fahmideh Ave

City

همدان

Province

Hamadan

Postal code

6517838677

Approval date

2018-12-21, 1397/09/30

Ethics committee reference number

IR.UMSHA.REC.1397.671

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

tooth bleaching

ICD-10 code**ICD-10 code description****Primary outcomes****1****Description**

dentin sensitivity

Timepoint

before treatment, immediately after, 24 hours after , 1 week after and 1 month after treatment

Method of measurement

VAS analyse chart

Secondary outcomes

empty

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

Intervention group: chemical bleaching

Category

Treatment - Devices

2**Description**

Intervention group: Er,Cr:YSGG -assisted laser- bleaching

Category

Treatment - Devices

Recruitment centers

1

Recruitment center

Name of recruitment center

Dental faculty of Hamedan university of medical sciences

Full name of responsible person

Zahra Khamverdi

Street address

Shahid Fahmideh Ave

City

Hamedan

Province

Hamadan

Postal code

6517838677

Phone

+98 81 3838 1059

Fax

+98 81 3838 1085

Email

Dentistry@umsha.ac.ir

Web page address

http://dentistry.umsha.ac.ir

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Hamedan University of Medical Sciences

Full name of responsible person

Assistance of research and technology

Street address

Shahid Fahmideh

City

Hamedan

Province

Hamadan

Postal code

6517838677

Phone

+98 81 3838 0717

Fax

+98 81 3838 0130

Email

Dentistry@umsha.ac.ir

Web page address

http://research.umsha.ac.ir

Grant name**Grant code / Reference number****Is the source of funding the same sponsor organization/entity?**

Yes

Title of funding source

Hamedan University of Medical Sciences

Proportion provided by this source

100

Public or private sector

Public

Domestic or foreign origin

Domestic

Category of foreign source of funding

empty

Country of origin**Type of organization providing the funding**

Academic

Person responsible for general inquiries

Contact

Name of organization / entity

Hamedan University of Medical Sciences

Full name of responsible person

Maryam Poulaki

Position

Student

Latest degree

A Level or less

Other areas of specialty/work

Dentistry

Street address

No 8, West Azad Ave

City

Hamedan

Province

Hamadan

Postal code

6516843814

Phone

+98 81 3831 6830

Fax**Email**

poulaki.mp7@gmail.com

Person responsible for scientific inquiries

Contact

Name of organization / entity

Hamedan University of Medical Sciences

Full name of responsible person

Zahra Khamverdi

Position

Professor

Latest degree

Specialist

Other areas of specialty/work

Dentistry

Street address

Shahid Fahmideh Ave

City

Hamedan

Province

Hamadan

Postal code

6517838677

Phone

+98 918 312 2095

Email

khamverdi@umsha.ac.ir

Person responsible for updating data

Contact

Name of organization / entity

Hamedan University of Medical Sciences

Full name of responsible person

Maryam Poulaki

Position

Dental Student

Latest degree

A Level or less

Other areas of specialty/work

Dentistry

Street address

No 128, Azad Ave

City

Hamedan

Province

Hamadan

Postal code

6516843814

Phone

+98 81 3831 6830

Email

poulaki.mp7@gmail.com

Sharing plan

Deidentified Individual Participant Data Set (IPD)

Undecided - It is not yet known if there will be a plan to make this available

Study Protocol

Undecided - It is not yet known if there will be a plan to make this available

Statistical Analysis Plan

Undecided - It is not yet known if there will be a plan to make this available

Informed Consent Form

Undecided - It is not yet known if there will be a plan to make this available

Clinical Study Report

Undecided - It is not yet known if there will be a plan to make this available

Analytic Code

Undecided - It is not yet known if there will be a plan to make this available

Data Dictionary

Undecided - It is not yet known if there will be a plan to make this available