Clinical Trial Protocol
Iranian Registry of Clinical Trials

17 Sep 2026

Comparison of the Antimicrobial Efficacy of Calcium Hydroxide and Photodynamic Therapy against Enterococcus faecalis and candida albicans in Teeth with Periapical Lesions; an in vivo study

Protocol summary

Summary

Background and Objectives: This study aimed to compare the antimicrobial efficacy of calcium hydroxide (CH) as a intracanal medication and photodynamic therapy (PDT) against E.faecalis and Candida albicans in teeth with periapical (PA) lesions. Methods: this in-vivo study was conducted on twenty patients with single-rooted mandibular premolar with previously failed endodontic treatment. After the conventional chemo-mechanical root canal preparation (hand and rotary instruments and 2.5% NaOCL), microbiological samples were obtained using sterile paper points, stored in thioglycolate solution and transferred to a microbiology laboratory. Group 1 (n=10) specimens underwent PDT(diode laser 810 nm+50 mg/ml methylene blue) and Creamy CH paste was used in group 2 for one week. A second sample was taken with sterile paper points. The samples were dispersed in transport medium, serially diluted, and cultured on selective mediums (Bile esculinazide agar for E.faecals and Sabouraud dextrose agar for candida albicans) to determine the number of colony forming units (CFU).

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2016090429686N1**
Registration date: **2016-11-29, 1395/09/09**
Registration timing: **retrospective**

Last update:
Update count: **0**

Registration date

2016-11-29, 1395/09/09

Registrant information

Name

Mohammad Asnaashari

Name of organization / entity

Shahid beheshti university of medical sciences

Country

Iran (Islamic Republic of)

Phone

+98 21 2217 5350

Email address

m-asnaashari@sbmu.ac.ir

Recruitment status

Recruitment complete

Funding source

The laser application in medical sciences research center, Shahid Beheshti University of Medical Sciences

Expected recruitment start date

2014-03-01, 1392/12/10

Expected recruitment end date

2014-05-01, 1393/02/11

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of the Antimicrobial Efficacy of Calcium Hydroxide and Photodynamic Therapy against Enterococcus faecalis and candida albicans in Teeth with Periapical Lesions; an in vivo study

Public title

Antimicrobial efficacy of calcium hydroxide and photodynamic therapy

Purpose

Supportive

Inclusion/Exclusion criteria

Iinclusion criteria were optimal general health and having a mandibular premolar with a PA lesion on the primary radiograph two years after its primary endodontic treatment. Patients with broken tooth, ledge, over-filling, transportation, root resorption or perforation were excluded.

Age
From **20 years** old to **60 years** old

Gender
Both

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **20**

Randomization (investigator's opinion)
Randomized

Randomization description

Blinding (investigator's opinion)
Not blinded

Blinding description

Placebo
Not used

Assignment
Parallel

Other design features

Secondary Ids

1

Registry name
universal trial number

Secondary trial Id
U1111-1188-0043

Registration date
2016-09-26, 1395/07/05

Ethics committees

1

Ethics committee

Name of ethics committee
Laser Application in Medical Sciences Research Center, Shahid Beheshti University of Medical Science

Street address
Shohada Tajrish hospital, Tajrish Sq., Tehran, Iran

City
Tehran

Postal code

Approval date
2010-08-20, 1389/05/29

Ethics committee reference number
IR.SBMU.REC.1392.320

Health conditions studied

1

Description of health condition studied
Teeth with Periapical Lesions

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description
Intera canal microbial load

Timepoint
One week

Method of measurement
CFU/ml

Secondary outcomes

empty

Intervention groups

1

Description
The effect of calcium hydroxide therapy on the experimental group

Category
Treatment - Drugs

2

Description
The effect of low level laser treatment on groups

Category
Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center
Endodontic Department, Shahid Beheshti University of Medical Sciences

Full name of responsible person

Street address

City
Tehran

Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Laser Application in Medical Sciences Research Center, Shahid Beheshti University of Medical Science

Full name of responsible person
Ms Razzaghi

Street address
Shohada Tajrish hospital, Tajrish Sq.
City
Tehran
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Laser Application in Medical Sciences Research Center, Shahid Beheshti University of Medical Science
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
Endodontic Department, Shahid Beheshti University of Medical Sciences
Full name of responsible person
Maryam Mojtahedbidabadi
Position
Assistant professor
Other areas of specialty/work
Street address
Endodontic Department, Shahid Beheshti University of Medical Sciences, Daneshjoo Blvd., Velenjak St., Chamran Highway
City
Tehran
Postal code
Phone
+98 21 2217 5350
Fax
Email
maryam.mojtahed@yahoo.com
Web page address

Person responsible for scientific inquiries

Contact
Name of organization / entity
Endodontic Department, Shahid Beheshti University of Medical Sciences
Full name of responsible person
Mohammad Asnaashari
Position
Professor
Other areas of specialty/work
Street address
Endodontic Department, Shahid Beheshti University of Medical Sciences, Daneshjoo Blvd., Velenjak St., Chamran Highway
City
Tehran
Postal code
Phone
+98 21 2217 5350
Fax
Email
m-asnaashari@sbmu.ac.ir
Web page address

Person responsible for updating data

Contact
Name of organization / entity
Endodontic Department, Shahid Beheshti University of Medical Sciences
Full name of responsible person
Maryam Mojtahedbidabadi
Position
Assistant professor
Other areas of specialty/work
Street address
Endodontic Department, Shahid Beheshti University of Medical Sciences, Daneshjoo Blvd., Velenjak St., Chamran Highway
City
Tehran
Postal code
Phone
+98 21 2217 5350
Fax
Email
maryam.mojtahed@yahoo.com
Web page address

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