Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Histologic response of human dental pulp to dexamethasone treatment following MTA-direct pulp capping and MTA-partial pulpotomy: A randomized clinical trial

Protocol summary

Summary

The aim of this randomized clinical trial was to histologically investigate the possible effects of dexamethasone application after MTA- DPC and PP in human premolar teeth. Methods and Materials: Forty intact premolar teeth will select from 10 healthy orthodontic patients that will candidates for extraction of four premolars; the teeth will randomize for DPC (n=20) or PP (n=20). After anesthesia and isolation, a class I cavity will prepare and buccal pulp horn will expose using a high speed ½ round high speed bur under copious water coolant. The buccal pulp horn exposure will pinpoint in size for DPC group, while whole head of the bur will enter into the pulpal horn in PP group. Subsequently, exposure site will seal using ProRoot MTA and cavities will restore with glass ionomer. After 60 days, the teeth will extract and 4 micron sections will prepare. Histologic evaluation will performe by an independent oral and maxillofacial pathologist. Kruskal-Wallis and Fisher exact tests will use for statistical analysis of the data (P=0.05).

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2014080618711N1**
Registration date: **2014-08-22, 1393/05/31**
Registration timing: **registered_while_recruiting**

Last update:
Update count: **0**

Registration date

2014-08-22, 1393/05/31

Registrant information

Name

Seyed Amir Mousavi

Name of organization / entity

Isfahan University of Medical Sciences

Country

Iran (Islamic Republic of)

Phone

+98 31 3673 6517

Email address

mousavi@dnt.mui.ac.ir

Recruitment status

Recruitment complete

Funding source

Mashhad University of Medical Sciences

Expected recruitment start date

2014-08-20, 1393/05/29

Expected recruitment end date

2014-09-20, 1393/06/29

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Histologic response of human dental pulp to dexamethasone treatment following MTA-direct pulp capping and MTA-partial pulpotomy: A randomized clinical trial

Public title

effect of dexamethasone on dental pulp

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: The teeth must have no history of trauma; absence of caries; restorations; periodontal problems; Exclusion criteria: Patients with known allergy;

sensitivity; contraindications for use of dexamethasone

Age
No age limit

Gender
Both

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **40**

Randomization (investigator's opinion)
Randomized

Randomization description

Blinding (investigator's opinion)
Double blinded

Blinding description

Placebo
Not used

Assignment
Single

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Mashhad University of Medical Sciences

Street address
Bolvar vakil abad

City
Mashhad

Postal code

Approval date
2012-10-27, 1391/08/06

Ethics committee reference number
910281

Health conditions studied

1

Description of health condition studied
pulpitis

ICD-10 code
K04

ICD-10 code description
Diseases of pulp and periapical tissues

Primary outcomes

1

Description
calcified bridge

Timepoint
2 months

Method of measurement
h and e staining

Secondary outcomes

1

Description
tissue reaction

Timepoint
2 months

Method of measurement
microscope

Intervention groups

1

Description
Forty intact premolar teeth will select from 10 healthy orthodontic patients that will candidates for extraction of four premolars; the teeth will randomiz for DPC (n=20) or PP (n=20). After anesthesia and isolation, a class I cavity was prepared and buccal pulp horn will expose using a high speed ½ round high speed bur under copious water coolant. The buccal pulp horn exposure will pinpoint in size for DPC group, while whole head of the bur will enter into the pulpal horn in PP group. The half of the DPC or PP groups, will receive dexamethasone in "solution" . Subsequently, exposure site was sealed using ProRoot MTA and cavities will restore with glass ionomer. After 60 days, the teeth were extracted and 4 micron sections prepared. Histologic evaluation will performe by an independent oral and maxillofacial pathologist.

Category
Treatment - Drugs

2

Description
for group 1: The buccal pulp horn exposure will pinpoint in size for DPC group

Category
Treatment - Drugs

3

Description
for group 2: whole head of the bur will enter into the pulpal horn in PP group

Category
Treatment - Drugs

4

Description
for goup 3:The half of the DPC group, will receive dexamethasone in "solution"

Category
Treatment - Drugs

5

Description
for group 4:The half PP group , will receive dexamethasone in "solution"
Category
Treatment - Drugs

Recruitment centers

1

Recruitment center
Name of recruitment center
Dental Research Center of Mashhad University of Medical Sciences
Full name of responsible person
Seyed Amir Mousavi
Street address
Number 1 ; Koye Emamsadegh ; Isfahan ; Iran
City
isfahan

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Mashhad University of Medical Sciences
Full name of responsible person
Dr Jamileh Ghoddusi
Street address
Iran , Mashhad , Vakilabad bolvar , Dental Reasearch Center
City
Mashhad
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Mashhad 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
Isfahan University of Medical Sciences
Full name of responsible person
Dr Seyed Amir Mousavi
Position
Assistant perofessor
Other areas of specialty/work
Street address
Number 1 , Koye emamsadegh , Isfahan , Iran
City
Isfahan
Postal code
8174663651
Phone
+98 31 3673 6517
Fax
Email
mousavi@dnt.mui.ac.ir
Web page address

Person responsible for scientific inquiries

Contact
Name of organization / entity
Isfahan University of Medical Sciences
Full name of responsible person
Seyed Amir Mousavi
Position
Endodontist,assistant professor
Other areas of specialty/work
Street address
Number 1 , Koye emamsadegh , Isfahan , Iran
City
Isfahan
Postal code
8174663651
Phone
+98 31 3673 6517
Fax
Email
mousavi@dnt.mui.ac.ir
Web page address

Person responsible for updating data

Contact
Name of organization / entity
Isfahan University of Medical Sciences
Full name of responsible person
Seyed Amir Mousavi
Position
Assistant professor
Other areas of specialty/work
Street address
Number 1 , Koye emamsadegh , Isfahan , Iran
City
Isfahan
Postal code
8174663651
Phone
+98 31 3673 6517
Fax
Email
mousavi@dnt.mui.ac.ir

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