

Clinical Trial Protocol

Iranian Registry of Clinical Trials

11 Sep 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 Research 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 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 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

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Email

mousavi@dnt.mui.ac.ir

Web page address	<i>empty</i>
Sharing plan	Informed Consent Form
	<i>empty</i>
Deidentified Individual Participant Data Set (IPD)	Clinical Study Report
<i>empty</i>	<i>empty</i>
Study Protocol	Analytic Code
<i>empty</i>	<i>empty</i>
Statistical Analysis Plan	Data Dictionary
	<i>empty</i>