Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Comparison of pain after endodontic treatment using AH Plus sealer and CC sealer

Protocol summary

Study aim
Comparison of pain after endodontic treatment using AH Plus sealer and CC sealer

Design
Randomized controlled clinical trial using a simple random allocation method on 80 patients

Settings and conduct
80 patients with molars or premolars with irreversible pulpitis who refer to Shahid Sadoughi Dental School and meet the inclusion criteria will participate. All patients will be treated in a single session by the residents of the specialized department. First, the pain level before treatment is recorded based on the Verbal Rating Scale (VRS) as well as the periapical condition of the tooth in question, and patients are assigned to one of two groups, A or B, using a simple random assignment method. The patient is advised to take painkillers if they experience unbearable pain. Patients will be followed up by telephone at intervals of 6, 24, 48, and 72 hours after treatment to record the level of pain based on a verbal rating scale.

Participants/Inclusion and exclusion criteria
Inclusion criteria: Patients with mandibular molars or premolars with irreversible pulpitis. The tooth must be restorable. The root apex must be closed. Exclusion criteria: Patients' refusal to provide informed consent. Having another painful tooth in the same side of the mouth. The patient not being in a normal state of intelligence.

Intervention groups
Intervention group: After cleaning and shaping the root canal using rotary files and normal saline irrigation, gutta-percha and CC sealer(Samin, Iran)are used to obturation the root canal space in the same session. Control group: After cleaning and shaping the root canal using rotary files and normal saline irrigation, gutta-percha and AH Plus (Dentsply Sirona, USA) sealer are used to obturation the root canal space in the same session.

Main outcome variables
Pain after root canal treatment

General information

Reason for update
Acronym
IRCT registration information
IRCT registration number: **IRCT20190315043057N2**
Registration date: **2026-01-31, 1404/11/11**
Registration timing: **prospective**

Last update: **2026-01-31, 1404/11/11**
Update count: **0**

Registration date
2026-01-31, 1404/11/11

Registrant information
Name
Jalil Modaresi
Name of organization / entity
Country
Iran (Islamic Republic of)
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+98 35 3625 5881
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Recruitment status
Recruitment complete
Funding source

Expected recruitment start date
2026-02-09, 1404/11/20
Expected recruitment end date
2026-03-06, 1404/12/15
Actual recruitment start date
empty
Actual recruitment end date
empty

Trial completion date
empty

Scientific title
Comparison of pain after endodontic treatment using AH Plus sealer and CC sealer

Public title
Comparison of post-treatment pain using two sealers: AH Plus and CC

Purpose
Treatment

Inclusion/Exclusion criteria

Inclusion criteria:
Patients with mandibular molars or premolars with irreversible pulpitis The tooth can be restored The root apex is closed.

Exclusion criteria:
patient dissatisfaction Having another painful tooth on the same side of the mouth The patient is not in a normal state in terms of intelligence.

Age
From **18 years** old

Gender
Both

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **80**

Randomization (investigator's opinion)
Randomized

Randomization description
For randomization, the simple allocation method will be used, and in this study, the unit of randomization is the individual. To perform randomization, an allocation list will be generated in advance. For this purpose, using PASS software (version 2021) and selecting the "Simple Randomization" option, a random sequence for 80 participants will be generated. The software output will specify which of the two groups—'A' (recipient of AH Plus sealer) or 'B' (recipient of CC sealer)—each of the sequence numbers 1 to 80 belongs to. This list will be stored in an Excel file and will be accessible only to a research assistant who has no involvement in the enrollment and intervention processes. After determining the eligibility of each patient for entering the study and obtaining informed consent, the aforementioned assistant, based on the order of patient enrollment (first patient = number 1, second patient = number 2, etc.), will only announce the sequence number assigned to that patient. Then, based on the pre-generated list, the type of sealer (AH Plus or CC) will be determined, and the treatment will be performed by the endodontist. This method eliminates the possibility of predicting future group allocation.

Blinding (investigator's opinion)
Not blinded

Blinding description

Placebo
Not used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Ethics committee of dental school of Shahid Sadoughi University of Medical Sciences

Street address
Imam Reza Blvd., Imam Reza Square

City
Yazd

Province
Yazd

Postal code
8914815667

Approval date
2025-08-02, 1404/05/11

Ethics committee reference number
IR.SSU.DENTISTRY.REC.1404.036

Health conditions studied

1

Description of health condition studied
irreversible pulpitis

ICD-10 code
K04.0

ICD-10 code description
Pulpitis

Primary outcomes

1

Description
post endodontic treatment pain

Timepoint
6 hours, 1,2 and 3 days after treatment

Method of measurement
pain verbal rating scale

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: For the teeth of patients in this group, after cleaning and shaping the root canal using a

rotary endodontic file and rinsing with normal saline, gutta-percha and CC sealer (Samin, Iran) are used when filling the root canal.

Category

Treatment - Drugs

2

Description

Control group: For the teeth of patients in this group, after cleaning and shaping the root canal using a rotary endodontic file and rinsing with normal saline, gutta-percha and AH Plus sealer (Dentsply Sirona, USA) are used when filling the root canal.

Category

Treatment - Drugs

Recruitment centers

1

Recruitment center

Name of recruitment center
Shahid Sadoughi Dental School, Yazd

Full name of responsible person
Jalil Modaresi

Street address
Imam Reza Blvd., Imam Reza Square

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Yazd University of Medical Sciences

Full name of responsible person
Amir Houshang Mehrparvar

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Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?
Yes

Title of funding source
Yazd 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
Yazd University of Medical Sciences

Full name of responsible person
Jalil Modaresi

Position
Professor

Latest degree
Specialist

Other areas of specialty/work
Dentistry

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Position
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Latest degree
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Person responsible for updating data

Contact
Name of organization / entity
Yazd University of Medical Sciences
Full name of responsible person
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Position
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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