Clinical Trial Protocol
Iranian Registry of Clinical Trials

07 Nov 2026

Double-Blind Clinical Trial Evaluating the Effectiveness of Amphotericin B Mouthwash versus an Antacid–Nystatin–Diphenhydramine Mouthwash for Chemotherapy-Induced Mucositis in Pediatric Patients

Protocol summary

Study aim
Comparison of Amphotericin B Mouthwash versus Antacid–Nystatin–Diphenhydramine Mouthwash in Chemotherapy-Induced Mucositis in Children

Design
Phase 3, parallel, double-blind randomized controlled trial enrolled 40 participants (20 per group)

Settings and conduct
This double-blind randomized trial was conducted in Bushehr on patients with chemotherapy-induced oral mucositis, allocated by block randomization to intervention or control groups and followed for 21 days, with mucositis severity and lesion size recorded at each visit.

Participants/Inclusion and exclusion criteria
With ethical approval, IRCT registration, and university authorization obtained, the inclusion criteria are: children aged 6 to 18 years with chemotherapy-induced oral mucositis (grade 2 or 3), parental consent and child assent, and absence of other local causes. Exclusion criteria include hypersensitivity to the study drugs and inability to perform mouth rinsing. Use methotrexate, severe leukeupenia(WBC<500Cell/microliter

Intervention groups
Participants were randomized into two groups. Group A received a compounded mouthwash of diphenhydramine (5 mL, Darou Pakhsh, Tehran), antacid (5 mL, Loghman, Tehran), and nystatin (1 mL, 100,000 IU, Jaber Ebne Hayyan, Tehran). Group B received amphotericin B (50 mg, Exir, Boroujerd) in 500 mL of 5% dextrose. Both groups used 7 mL three times daily for 21 days. Children able to gargle rinsed for 2 minutes and repeated after 15 minutes; in younger children, the solution was applied with sterile gauze. Mouthwashes were freshly prepared every three days, participants were instructed not to swallow and to avoid food or drink for 30 minutes, and both formulations were dispensed in identical coded bottles to maintain blinding.

Main outcome variables
Resolution time of oral mucositis

General information

Reason for update
This post-registration update is intended to complete and clarify the public trial record based on the finalized study documentation. The actual recruitment dates, exclusion criteria applied during screening, actual randomized sample, intervention administration wording, lesion-size assessment schedule, and masking description were updated for consistency with the conduct and final reporting of the trial. The original registration date, prospective registration status, primary outcome, randomized design, and registered target sample size were not changed.

Acronym
(MMT) Mucositis Mouthwash Trial

IRCT registration information
IRCT registration number: **IRCT20210715051904N3**
Registration date: **2025-08-30, 1404/06/08**
Registration timing: **prospective**

Last update: **2026-08-25, 1405/06/03**
Update count: **1**

Registration date
2025-08-30, 1404/06/08

Registrant information

Name
Nader Shakibazad

Name of organization / entity

Country
Iran (Islamic Republic of)

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Recruitment status
Recruitment complete
Funding source

Expected recruitment start date
2025-09-25, 1404/07/03
Expected recruitment end date
2026-04-20, 1405/01/31
Actual recruitment start date
2025-09-20, 1404/06/29
Actual recruitment end date
2026-04-30, 1405/02/10
Trial completion date
2026-05-01, 1405/02/11

Scientific title
Double-Blind Clinical Trial Evaluating the Effectiveness of Amphotericin B Mouthwash versus an Antacid–Nystatin–Diphenhydramine Mouthwash for Chemotherapy-Induced Mucositis in Pediatric Patients

Public title
Mouthwash therapies for pediatric chemotherapy mucositis
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
Age between 6 and 18 years Diagnosis of chemotherapy-induced oral mucositis (Grade 2 or 3) based on WHO criteria. No other local etiologies for mucositis (e.g., trauma, vitamin deficiencies) Signed informed consent by legal guardians and patient assent
Exclusion criteria:
Inability to cooperate with the treatment regimen Known hypersensitivity or allergy to Amphotericin B, antacids, nystatin, or diphenhydramine. Use of methotrexate chemotherapy Severe leukopenia (WBC<500 cell/micoliter)
Age
From **6 years** old to **18 years** old
Gender
Both

Phase
3
Groups that have been masked

- Participant
- Outcome assessor
- Data analyser

Sample size
Target sample size: **40**
Actual sample size reached: **44**
Randomization (investigator's opinion)
Randomized
Randomization description
Participants will be randomly assigned to two intervention groups using block randomization with a block size of four to ensure balanced allocation. An independent statistician will generate the block randomization scheme using the free website, http://randomization.com. Allocation concealment will be maintained through the use of sequentially numbered, opaque, sealed envelopes (SNOSE) to prevent selection bias. After enrollment, a nurse not involved in the intervention or outcome assessment will sequentially open the next envelope to assign the participant to either Group A or Group B. The treating physician, responsible for preparing and administering the mouthwashes, will be aware of the group assignments for operational purposes but will not participate in outcome evaluations.
Blinding (investigator's opinion)
Double blinded
Blinding description
The pediatric dental specialist conducting mucositis assessments will be blinded to group allocations to ensure unbiased outcome evaluations. Study participants, their legal guardians, and data analysts will remain blinded to the treatment assignments. Both mouthwashes will be dispensed in identical containers with neutral labeling to prevent detection of group assignment by participants or caregivers. Blinding effectiveness will be assessed midway through the study by querying assessors and participants regarding their perception of group allocation.
Placebo
Not used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics Committee of Bushehr University of Medical Sciences
Street address
Campus of Medical Sciences, Salman Farsi Street, Bahmani, Bushehr
City
Boushehr
Province
Boushehr
Postal code
7518759577
Approval date
2023-10-29, 1402/08/07
Ethics committee reference number
IR.BPUMS.REC.1402.190

Health conditions studied

1

Description of health condition studied
Pediatric cancer, Chemotherapy, mucositis

ICD-10 code
K12.31

ICD-10 code description
Oral mucositis (ulcerative) due to antineoplastic therapy

Primary outcomes

1

Description
Time to complete resolution of oral mucositis

Timepoint
Evaluation will be performed every 3 days from the beginning of the intervention until complete recovery (grade 0 mucositis) or up to 21 days after the start of treatment.

Method of measurement
Clinical examination by a blinded pediatric dental specialist using the WHO Oral Mucositis Grading Scale: Grade 0: No mucositis. Grade 1: Soreness and/or erythema. Grade 2: Erythema and ulcers, patient able to swallow solid foods. Grade 3: Ulcers, patient limited to a liquid diet. Grade 4: Severe ulceration, alimentation impossible, requiring enteral or parenteral support. Lesion size will be measured using calibrated millimeter paper (±1 mm accuracy).

Secondary outcomes

1

Description
Incidence of adverse events related to mouthwash use

Timepoint
Monitored continuously throughout the 21-day intervention

Method of measurement
Patient/caregiver-reported symptoms recorded at each clinical visit and spontaneous reporting

Intervention groups

1

Description
Control Group: Participants in Group A will receive a compounded mouthwash containing 5 mL of diphenhydramine hydrochloride syrup (Darou Pakhsh Pharmaceutical Co., Tehran, Iran), 5 mL of magnesium–aluminum hydroxide antacid suspension (Loghman Pharmaceutical Co., Tehran, Iran), and 1 mL of nystatin oral suspension (100,000 units/mL, Jaber Ebne Hayyan Pharmaceutical Co., Tehran, Iran). The solution will be administered three times daily for 21 days, with each dose consisting of 7 mL. Participants able to gargle will rinse with the solution for 2 minutes and repeat the rinse after 15 minutes. For patients unable to gargle, caregivers will apply the solution to affected mucosal areas using sterile gauze. Mouthwashes will be freshly prepared every three days. Patients will be instructed not to swallow the solution and to avoid eating or drinking for at least 30 minutes after each use. To ensure blinding, all formulations will be dispensed in opaque, coded bottles.

Category
Treatment - Drugs

2

Description
Intervention Group: Participants in Group B will receive a mouthwash prepared by dissolving 50 mg of amphotericin B (Exir Pharmaceutical Co., Boroujerd, Iran) in 500 mL of 5% dextrose in water (Shahid Ghazi Pharmaceutical Co., Tabriz, Iran), resulting in a concentration of 0.1 mg/mL. The solution will be administered three times daily for 21 days, with each dose consisting of 7 mL. Participants who can gargle will rinse for 2 minutes, followed by a second rinse after 15 minutes. For participants unable to gargle, caregivers will apply the solution by gently swabbing the affected mucosal areas with sterile gauze soaked in the mouthwash. Mouthwash solutions will be freshly prepared every three days. Participants will be instructed not to swallow the solution and to avoid eating or drinking for at least 30 minutes after application. To ensure blinding, the mouthwash will be dispensed in opaque, coded bottles.

Category
Treatment - Drugs

Recruitment centers

1

Recruitment center

Name of recruitment center
Shohadaye Khalij-e-Fars Hospital

Full name of responsible person
Nader Shakibazad

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Shohada Khalij Fars Educational and Medical Center, Taleghani Boulevard, Bushehr, Bushehr Province, Iran

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Boushehr University of Medical Sciences

Full name of responsible person
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Grant name
Vice Chancellor for Research, Bushehr University of Medical Sciences

Grant code / Reference number
2365

Is the source of funding the same sponsor organization/entity?
No

Title of funding source
Boushehr 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
Boushehr University of Medical Sciences

Full name of responsible person
Nader Shakibazad

Position
Associate professor

Latest degree
Subspecialist

Other areas of specialty/work
Pediatric hematology and oncology

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Person responsible for updating data

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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
Not applicable

Data Dictionary
Not applicable