

# Clinical efficacy of acacia nilotica (Arabic gum) extract on prevention of dry socket after impacted lower third molar surgery: a randomized controlled trial

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<b>Registration date</b> 22/04/2025	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 22/04/2025	<b>Condition category</b> Oral Health	<input type="checkbox"/> Individual participant data <input type="checkbox"/> Record updated in last year

## Plain English summary of protocol

### Background and study aims

Surgical extraction of impacted teeth can be associated with multiple postoperative complications like pain, swelling, trismus (lockjaw), and alveolar osteitis (dry socket). Clinicians therefore have adopted various interventions over the years to minimize these postoperative complications with varying degrees of success. The aim of this study was to assess the effectiveness and safety of *A. nilotica* in controlling post-interventional complications (pain, inflammation, trismus, amount of analgesics required and overall wound healing) in patients undergoing surgical extraction of mandibular (jaw) third molars.

### Who can participate?

Patients aged 18 years and over who attended dental clinics to extract mandibular third molars

### What does the study involve?

Patients were randomly allocated to one of the two study groups. Group 1 subjects (test group) were given a 50% solution of *Acacia nilotica* mouthrinse while group 2 (control) were given a saline water mouthrinse (placebo). After surgical extraction, both groups were instructed to rinse with 10 ml of their designated mouthrinse twice a day for 7 days, with instructions to start using it after 24 hours for 60 seconds after toothbrushing. Wound healing, edema (swelling), trismus, and pain were evaluated after days 3 and 7.

### What are the possible benefits and risks of participating?

The expected benefits of this study are to improve postoperative wound healing and by extension it may aid in the prevention of alveolar osteitis.

No harmful side effects are expected as gum acacia is used as a food additive and is considered Generally Recognized As Safe or GRAS under the Food and Drug Administration's code of federal regulations. Gum acacia is permitted for use under the Good Manufacturing Practices in the United States, in the Middle East, Europe, and West Africa. The FDA agreed that acacia gum has physiological effects beneficial to human health, such as the reduction of blood glucose and

insulin levels after it is eaten with a meal containing a carbohydrate that raises blood glucose levels.

Where is the study run from?

Dental Clinics of the College of Dentistry, King Khalid University (Saudi Arabia)

When is the study starting and how long is it expected to run for?

September 2023 to December 2023

Who is funding the study?

Investigator initiated and funded

Who is the main contact?

Dr Mashail Hamid, mhamid@kku.edu.sa

## Contact information

### Type(s)

Public, Scientific, Principal investigator

### Contact name

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## Additional identifiers

## Study information

### Scientific Title

The efficacy of acacia nilotica extract on the prevention of alveolar osteitis after impacted lower third molar surgery: a randomized controlled trial

### Study objectives

Acacia nilotica extract is effective in reducing post-operative complications in third molar surgery

### Ethics approval required

Ethics approval required

### Ethics approval(s)

approved 30/09/2023, The Research Ethics Committee, College of Dentistry, King Khalid University (King Khalid University, Abha, Abha, 61421, Saudi Arabia; +966 (0)172418005; src-cod@kku.edu.sa), ref: IRB/KKUCOD/ETH/2023-24/004

## **Study design**

Single-center randomized controlled clinical trial

## **Primary study design**

Interventional

## **Study type(s)**

Efficacy

## **Health condition(s) or problem(s) studied**

Prevention of postoperative complications after extraction of impacted lower third molars

## **Interventions**

Method of randomization:

Systematic allocation was used (alternate allocation based on the patient's presence at the dental clinic).

Patients with impacted lower third molars with a moderate difficulty index were randomly allocated into one of the two study groups. Group 1 subjects (test group) were given a 50% solution of Acacia nilotica mouth rinse while group 2 (control) were given a saline water mouthrinse (placebo). After surgical extraction, both groups were instructed to rinse with 10 ml of their designated mouth rinse twice a day for 7 days, with instructions to start using it after 24 hours for 60 seconds after toothbrushing. Wound healing, edema, trismus, and pain were evaluated after days 3 and 7.

## **Intervention Type**

Other

## **Primary outcome(s)**

1. Pain measured using a visual analog scale, ranging from 0 ("no pain") to 10 ("unbearable pain") at 9 pm for 7 consecutive days
2. Trismus evaluated using a Vernier gauge to measure the interincisal distance between the right upper and lower central incisors at day 1, 3 and 7 post-extraction
3. Extraoral swelling measured with a 3-0 silk suture put between tragus and corner of mouth, following the maximal convexity of the cheek, and measured against a ruler at day 1, 3 and 7 post-extraction
4. Wound healing evaluated by checking wound edges, color of mucosa and wound closure at day 7 post-intervention after suture removal

## **Key secondary outcome(s)**

Signs of other postoperative complications, such as postoperative infection and pus discharge

## **Completion date**

31/12/2023

# Eligibility

## Key inclusion criteria

1. Adult patients (aged 18 years and above)
2. Referred to extract their impacted lower third molars with a moderate difficulty index (scores between 5 and 6) according to the Pederson scale

## Participant type(s)

Patient

## Healthy volunteers allowed

No

## Age group

Adult

## Lower age limit

18 years

## Upper age limit

100 years

## Sex

All

## Total final enrolment

19

## Key exclusion criteria

1. History of sensitivity to Acacia Nilotica
2. Uncontrolled systemic diseases
3. History of malignancy or irradiation to the site of extraction
4. History of antibiotics, corticosteroids, anticoagulants, and contraceptive drugs use over the past month
5. Smokers
6. Pregnant or breastfeeding mothers
7. Uncontrolled infection at the site of extraction

## Date of first enrolment

01/10/2023

## Date of final enrolment

24/12/2023

# Locations

## Countries of recruitment

Saudi Arabia

**Study participating centre**  
**King Khalid University**  
Abha  
Saudi Arabia  
61421

## **Sponsor information**

**Organisation**  
King Khalid University

**ROR**  
<https://ror.org/052kwzs30>

## **Funder(s)**

**Funder type**  
Other

**Funder Name**  
Investigator initiated and funded

## **Results and Publications**

### **Individual participant data (IPD) sharing plan**

The dataset generated and/or analysed during the current study will be available upon request from Dr Mashail Hamid ([mhamid@kku.edu.sa](mailto:mhamid@kku.edu.sa)).

### **IPD sharing plan summary**

Available on request