

How bevacizumab affects gum and mouth healing after tooth extraction in cancer patients in central Algeria

Submission date 28/07/2026	Recruitment status No longer recruiting	☐ Prospectively registered ☒ Protocol
Registration date 31/07/2026	Overall study status Completed	☐ Statistical analysis plan ☐ Results
Last Edited 30/07/2026	Condition category Cancer	☐ Individual participant data ☒ Record updated in last year

Plain English summary of protocol

Background and study aims

Cancer patients receiving bevacizumab may need to have teeth extracted during their treatment. However, there is limited evidence and few clear guidelines on whether tooth extractions can be performed safely without interrupting cancer treatment.

This study aimed to investigate the effect of bevacizumab on healing of the gums and mouth after tooth extraction. The researchers also examined the risk of bleeding, oral side effects and jawbone damage, and aimed to identify the best way to manage these patients during dental treatment.

Who can participate?

Adults aged 18 years and over with cancer who required a tooth extraction and were receiving either bevacizumab alone, bevacizumab combined with chemotherapy, or conventional chemotherapy alone.

What does the study involve?

Participants underwent tooth extraction without interrupting their cancer treatment.

The procedure included:

- Chlorhexidine mouthwash before treatment
- Local anaesthesia
- Surgical techniques designed to minimise tissue damage
- Sutures to help the extraction site heal
- Preventive antibiotic treatment starting before the extraction and continuing afterwards

Participants attended follow-up visits so researchers could assess healing of the gums and mouth, bleeding complications, oral side effects and the risk of jawbone damage following tooth extraction.

What are the possible benefits and risks of participating?

Participants may have benefited from close monitoring and specialised dental care during tooth extraction. The findings may help improve guidance on the dental management of cancer patients receiving bevacizumab.

The study involved the usual risks associated with tooth extraction, including pain, swelling, infection, bleeding and delayed healing. Researchers monitored participants for these complications and for signs of jawbone damage.

Where is the study run from?

University of Blida, Algeria.

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

June 2019 to September 2021.

Who is funding the study?

Investigator initiated and funded.

Who is the main contact?

Professor Hanane Ammar Boudjelal, ammar_hanane@univ-blida.dz.

Contact information

Type(s)

Scientific, Public, Principal investigator

Contact name

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Study information

Scientific Title

The impact of bevacizumab on mucosal healing after dental extraction in patients undergoing cancer treatment in the central region of Algeria

Study objectives

Primary Objective: To evaluate the impact of bevacizumab on mucosal healing after tooth extraction in patients with a malignant pathology.

Secondary Objectives: To evaluate the bleeding risk associated with bevacizumab during tooth extractions; to assess oral mucosal toxicity; to estimate the risk of and prevent medication-related osteonecrosis of the jaw (MRONJ) without interrupting bevacizumab therapy; and to develop an optimal management strategy for these patients.

Ethics approval required

Ethics approval required

Ethics approval(s)

Approved 03/02/2019, Scientific Council of the Faculty of Medicine, University of Blida 1 (University of Blida 1 Route de Soumaa, Blida, 09000, Algeria; +213 25 27 24 36; contact@univ-blida.dz), ref: 01/PGRSRE/FM/2018

Primary study design

Interventional

Allocation

Non-randomized controlled trial

Masking

Open (masking not used)

Control

Active

Assignment

Parallel

Purpose

Treatment

Study type(s)

Health condition(s) or problem(s) studied

Cancer or malignant tumors requiring tooth extraction in patients undergoing antineoplastic treatments (bevacizumab and/or conventional chemotherapy).

Interventions

This study is a comparative, prospective, multicenter interventional study. Baseline data were collected at the time of inclusion (before dental extraction and before any intervention), including demographic characteristics, cancer type and stage, medical history, laboratory parameters, and oral hygiene status.

Patients were divided into two groups:

- Group 1 (With Bevacizumab, n = 78): Patients received Bevacizumab (with or without concomitant chemotherapy) as part of their standard oncological treatment. The mean dose was

547.9 ± 239.32 mg per cycle, administered over a mean duration of 40.08 ± 31.66 weeks. Patients in this group underwent single-tooth dental extractions without interruption of their antineoplastic treatment.

- Group 2 (Without Bevacizumab, n = 42): Patients received conventional chemotherapy alone. They also underwent single-tooth dental extractions without interruption of their chemotherapy.

Dental extraction protocol (both groups):

- Consultation with the treating physician was conducted prior to the procedure.
- Antibiotic prophylaxis: amoxicillin 2 g/day in two divided doses, initiated the day before extraction and continued for 7 days post-intervention. In case of penicillin allergy, macrolides (e. g., pristinamycin 1 g/day) were used.
- Preoperative antiseptic mouthwash: 0.2% chlorhexidine for 30 seconds.
- Anesthesia: vasoconstrictor-free local anesthetic (3% mepivacaine).
- Extraction technique: atraumatic single-tooth extraction.
- Suturing: tight closure using Vicryl® 3-0.
- Hemostatic agents were used if needed.

Follow-up: Patients were followed postoperatively at days 7, 15, and 30. The primary outcome was delayed mucosal healing, defined as the absence of complete epithelialization at 30 days post-extraction.

Intervention Type

Procedure/Surgery

Primary outcome(s)

1. Delayed mucosal healing measured using a clinical assessment of the persistence of pain with a 10-point Visual Analog Scale (VAS), infection, edema, exposed alveolar bone, or lack of epithelialization/mucosal coverage, at 1 month (30 days) post-extraction

Key secondary outcome(s)

Completion date

01/09/2021

Eligibility

Key inclusion criteria

1. Aged over 18 years of age
2. Patients receiving bevacizumab as monotherapy or in combination with conventional chemotherapy
3. Patients treated solely with conventional chemotherapy
4. Patients presenting an indication for tooth extraction
5. Patients with a recent biological assessment (Complete Blood Count) allowing safe tooth extraction, with neutrophils greater than or equal to 1500/mm³ and platelets greater than or equal to 50,000/mm³
6. Patients who have provided informed consent

Healthy volunteers allowed

No

Age group

Mixed

Lower age limit

18 Years

Upper age limit

99 Years

Sex

All

Total final enrolment

120

Key exclusion criteria

1. Patients on antiangiogenic treatments other than bevacizumab
2. Patients treated with or scheduled to receive bisphosphonates within three months following the extraction
3. Patients taking anticoagulants or non-steroidal anti-inflammatory drugs (NSAIDs)
4. Uncontrolled diabetes
5. Renal or hepatic insufficiency
6. Unstable cardiac conditions
7. Autoimmune diseases
8. Hemostasis disorders
9. Previous or planned head and neck radiotherapy within three months following the extraction
10. Psychiatric disorders
11. Difficult tooth extractions requiring alveolectomy
12. Acute oral infection
13. Refusal to participate in the study

Date of first enrolment

07/06/2019

Date of final enrolment

29/03/2021

Locations**Countries of recruitment**

Algeria

Sponsor information**Organisation**

University of Blida

ROR

Funder(s)

Funder type

Funder Name

Investigator initiated and funded

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary

Not expected to be made available

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Other files			30/07/2026	No	No
Protocol file			30/07/2026	No	No