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REVIEW

Management of Patients Treated with Antithrombotic Drugs in Dentistry: Comparison of SFCO and BAOS Recommendations

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Abstract

Background: Patients on antithrombotic drugs are at risk of thrombosis; when prescribed these medications they develop a risk of haemorrhage. To our knowledge, there is no published global consensus on the management of these patients and only expert panels guidelines exist.

Objectives: The aims of this study were to (1) compare the clinical guidelines issued by the French Society of Oral Surgery (SFCO) and the clinical guidelines issued by the British Association of Oral Surgery (BAOS), and (2) to summarize the guidelines recommendations.

Methods: This article is a descriptive comparative review based on published clinical guidelines issued by the French Society of Oral Surgery (SFCO) in July 2015 and the clinical guidelines issued by the British Association of Oral Surgery (BAOS) in March 2022.

Results: The decisions of the two bodies overlap in that the discontinuation of antithrombotic drugs is considered a last resort decision. However, distinctions arise from the approach to determining bleeding risk, which extends to differences in management strategy and decision making.

Conclusion: Many of the most recent SFCO and BAOS guidelines are based on conditional recommendations with a seven-year gap. For optimal management, practitioners need to consider these parameters while keeping abreast of the latest studies.

Keywords: Antithrombotic drugs, Practice guidelines, Postoperative hemorrhage/prevention & control, Dental care for chronically ill

1. Introduction

Patients on antithrombotic drugs are initially at risk of thrombosis; when prescribed these medications they develop a risk of haemorrhage [1].

For a safe management of the bleeding risk, dentists and antithrombotic medication prescribing physicians must efficiently collaborate. Dental practitioners must accurately assess the extent of the bleeding risk associated with the planned

procedures while the thrombotic risk remains the responsibility of the prescribing physician [2].

Any alteration of the antithrombotic treatment is therefore the prerogative of the prescribing physician.

While it is common for dentists to routinely refer patients on thrombotic therapy due to lack of understanding and/or fear of unmanageable bleeding during and after the procedure [3], the management of patients on antithrombotic medications is a

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shared responsibility and dentists do need to be knowledgeable in identifying when referral is required and when it is not required.

To our knowledge, there is no published world consensus on the management of patients treated with antithrombotic drugs in dentistry. For now, expert panels have developed evidence-based clinical guidelines for the management of patients treated with antithrombotic drugs in dentistry.

These guidelines are provided to simplify decision making for practitioners in their daily practice while allowing them to make final decisions in conjunction with the prescribing physician when required [4].

There are several guidelines available on the management of patients treated with antithrombotic drugs in dentistry issued by advisory instances. This review compares the clinical guidelines issued by the French Society of Oral Surgery (SFCO) in July 2015 and the clinical guidelines issued by the British Association of Oral Surgery (BAOS) in March 2022.

2. Methods

This article is a descriptive comparative review based on published clinical guidelines issued by the SFCO in July 2015 and the clinical guidelines issued by the BAOS in March 2022.

3. Results and discussion

3.1. Antithrombotics classification

The various antithrombotic drugs inhibit the production or activity of factors required for the coagulation cascade and thus impair homeostasis [5].

Antithrombotic drugs fall into three main categories: antiplatelets, fibrinolytics and anticoagulants [6].

Antiplatelets inhibit the formation of blood clots by blocking one of the surface receptors on platelets and are used primarily for the long-term treatment of arterial thrombosis [7].

Fibrinolytics allow reperfusion by converting plasminogen to plasmin and dissolving fibrin. These drugs, used to lyse an already formed thrombus, are most effective when administered within 4–6 hours of a cardiovascular event [6].

Anticoagulants are used as short- and long-term options for both arterial and venous thrombi [8]. Anticoagulants are divided into three categories: injectable anticoagulants, vitamin K antagonists, and direct oral anticoagulants [4].

Each category of antithrombotic requires a specific approach. The protocol is usually

recommended by advisory bodies and may differ depending on the body.

Both bodies SFCO and BAOS discussed two classes of antithrombotics: antiplatelets and anticoagulants.

3.2. Bleeding risk stratification

In most guidelines, the management of patients is dependent on the bleeding risk associated with the clinical procedure.

The SFCO stratifies the bleeding risk into three main levels and specifies the contraindicated procedures for patients under all types of antithrombotics (Table 1): [9].

- Procedures with no risk of bleeding,
- Surgeries and procedures with low bleeding risk: surgeries where externalized bleeding is easily controlled by conventional surgical homeostasis corresponding to low blood loss (volume <50 mL, no reported cases of platelet transfusion) [10–12].
- Surgeries and invasive procedures with high bleeding risk: Surgeries for which significant blood loss and/or platelet transfusions have been reported in the literature, operations lasting more than 1 h, critical procedures (maxillary sinus, floor of the mouth) and/or those that are difficult to control with conventional surgical homeostasis.

The BAOS on the other hand divides the bleeding risk into two main categories (Table 2): [2].

- Dental procedures that are unlikely to cause bleeding,
- Dental procedures that are likely to cause bleeding which subdivide into Low risk of post-operative bleeding complications and higher risk of post-operative bleeding complications.

While the SFCO broadly emphasizes the importance of the medical anamnesis in the bleeding risk assessment, the BAOS concretely guides practitioners further by suggesting an algorithm to follow (Fig. 1) through a series of questions in a defined order:

1. Is dental treatment likely to cause bleeding?
2. Is medication time-limited?
3. Does the patient have other relevant medical complications?
4. Which drug type is the patient taking?

Depending on the answer to each of these questions, dentists can make the decision to either “treat

Table 1. SFCO Bleeding risk stratification by type of surgery and preventive measures.

Type of surgeries and invasive procedures	Preventive measures for bleeding complications
Procedures with no risk of bleeding <ul style="list-style-type: none"> • Local anaesthesia • Scaling 	Simple mechanical hemostasis by local pressure
Surgeries and procedures with low bleeding risk <ul style="list-style-type: none"> • Single avulsion • Multiple avulsions in one quadrant • Endodontic surgery, periapical surgery, enucleation of cysts and benign tumors (lesion < 3 cm) • Muco-gingival surgery (except gingival graft with palatal removal) • Pre-orthodontic surgery of an impacted tooth • Single implant • Implant clearance (healing abutment) • Oral mucosal biopsy-exeresis (≤ 1 cm) 	<ul style="list-style-type: none"> - Oral hygiene measures and scaling - Conventional surgical hemostasis - Tranexamic acid
Surgeries and invasive procedures with high bleeding risk <ul style="list-style-type: none"> • Multiple avulsions in multiple quadrants • Avulsion of impacted tooth(s) • Multiple implants in multiple quadrants • Sinus elevation (crestal approach, lateral approach) • Appositional bone grafts (in onlay) • Particle bone grafting and guided bone regeneration • Soft tissue surgery (salivary lithiasis) • Endodontic surgery, periapical surgery, enucleation of cysts and benign tumors (lesion > 3 cm) • Closing of an oral-sinusal communication • Removal of pseudotumors and benign tumors of the oral mucosa (>1 cm) 	<ul style="list-style-type: none"> - Same precautionary measures as for low-to-moderate risk bleeding surgery - Blood-derived medications, based on human fibrinogen and thrombin - Mono and bipolar electrocoagulation - Minimally invasive surgery (flapless and guided implant surgery, crestal sinus approach, etc.) - Preoperative 3D imaging (sinus, symphyseal region) in case of implant placement

Table 2. BAOS Bleeding risk stratification by type of surgery and preventive measures.

Dental procedures that are unlikely to cause bleeding	Dental procedures that are likely to cause bleeding	
<ul style="list-style-type: none"> • Local anesthesia by infiltration, intraligamentary or mental nerve block • Local anesthesia by lower dental block or other regional nerve blocks • Basic periodontal examination (BPE) • Supragingival removal of plaque, calculus and stains • Direct or indirect restorations with supragingival margins • Endodontics - orthograde • Impressions and other prosthetic procedures • Fitting and adjustment of orthodontic appliances 	Low risk of post- operative bleeding complications <ul style="list-style-type: none"> • Simple avulsions (1–3 teeth, with limited wound size) • Incision and drainage of intraoral swellings • Comprehensive six-point periodontal examination • Root surface debridement (RSD) • Direct or indirect restorations with subgingival margins 	Higher risk of post- operative bleeding complications <ul style="list-style-type: none"> • Complex extractions, adjacent extractions that will cause a large wound or more than three extractions at the same time. • Flap-lift procedures, including: <ul style="list-style-type: none"> - Elective surgical extractions - Periodontal surgery - Pre-prosthetic surgery - Periradicular surgery - Crown lengthening - Dental implants • Gingival recontouring • Biopsies

with caution using standard procedures, taking care to avoid causing bleeding”, “delay non-urgent, invasive dental procedures where possible” or “consult with prescribing clinician, specialist or general medical practitioner, if required.”

For a comprehensive decision process, both bodies made the final decision based on the type of anticoagulant the patient is taking.

3.3. Guidelines for patients taking antiplatelet drug(s)

Both recommendation bodies chose a binary algorithm. The SFCO decisions vary on whether the treatment is monotherapy (aspirin or clopidogrel) or dual therapy (aspirin and other platelet drugs) combined with the type of surgery according to their

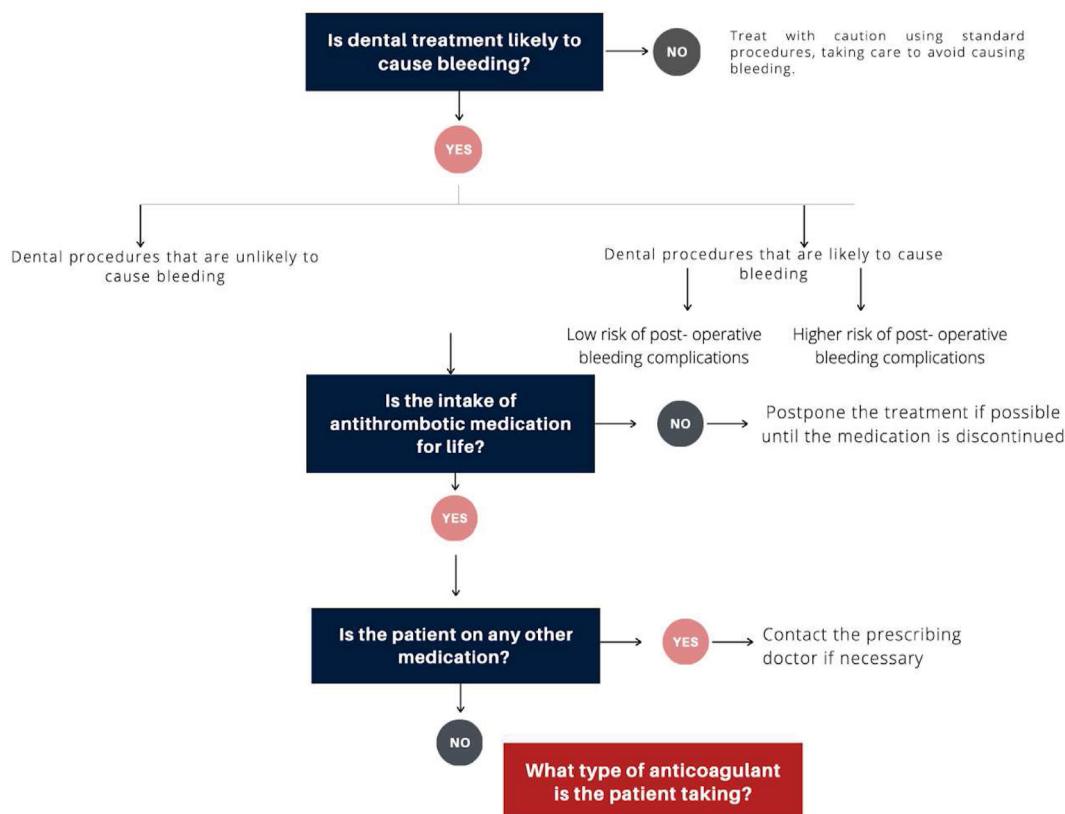


Fig. 1. BAOS bleeding risk stratification algorithm.

defined bleeding risk stratification as well as taking into account the thrombotic risk after consultation with the prescribing doctor. Decisions according to the SFCO are either to treat in the dental office without interrupting medication, treat in a hospital care setting or postpone the intervention. There is only one situation where treatment is advised to be carried in a hospital setting or postponed and that is when a high bleeding risk surgery is performed on patients on dual therapy whose thrombotic risk is high.

According to the BAOS there are two main situations to consider: patients on Aspirin alone and patients on Clopidogrel, Dipyridamole, Prasugrel or Ticagrelor single or dual therapy (in combination with Aspirin). Both are to be treated without interrupting medication, however there are specific considerations for each situation. For Aspirin alone it is advised to consider limiting the initial treatment area and staging extensive or complex procedures; while using local haemostatic measures. For the second category of patients, the practitioner needs to expect prolonged bleeding; it is therefore recommended to limit initial treatment area and consider staging extensive or complex

procedures; and strongly consider suturing and packing.

Unlike the SFCO, the BAOS does consider the situation where two antithrombotic medications are combined: antiplatelet drugs and anticoagulants, the designated recommendation is to consult with the patient's prescribing clinician.

3.4. Guidelines for patients taking anticoagulant drug(s)

In order to improve the management of bleeding risks, different patient management recommendations have been proposed addressing the Oral Anticoagulant Treatment. The SFCO describes the following recommendations:

- Treatment in the dental office without interrupting medication,
- Intervention postponed,
- Contacting the prescribing doctor and treatment temporary cessation or modulation,
- Treatment in a hospital care setting or postponing the intervention.

The decision algorithm in the SFCO recommendations primarily relies on the intervention bleeding risk assessment. For Low bleeding risk procedures, practitioners must prescribe an International Normalized Ratio (INR) test, which is the preferred test of choice for patients taking anticoagulant drugs [13].

If the INR is lower than 4, treatments are done in the dental office without interrupting medication. If higher, the intervention is postponed and the prescribing physician is contacted. However, the SFCO recommends that for all high bleeding risk procedures, contacting the prescribing doctor is mandatory and depending on the thrombotic associated risk these are the possible decisions: temporary cessation or modulation, treatment in a hospital care setting or postponing the intervention. We note that the SFCO doesn't differentiate between types of anticoagulants for the decision-making process in contradiction with the BAOS. The BAOS breaks its decision-making process into two main categories: Vitamin K Antagonist: Warfarin, Acenocoumarol or Phenindione and Injectable Anticoagulant: Dalteparin, Enoxaparin or Tinzaparin. For the first category of anticoagulants, it's recommended to check the INR, ideally no more than 24 hours before the procedure (up to 72 hours if the patient is stably anticoagulated). As recommended by the SFCO if the INR is below 4 practitioners are recommended to treat without interrupting medication, if it's 4 or higher, delay invasive treatment or refer if urgent. The recommendations for Injectable Anticoagulants are based on the medication's indication. If it's taken at a Prophylactic (low) dose, the doctor ought to treat without interrupting medication by making sure to limit initial treatment area and staging extensive or complex procedures; strongly consider suturing and packing. However, if the indication is at a Treatment (higher) dose or there is uncertainty about the dose the recommendation is to consult with prescribing clinician for more information.

3.5. Guidelines for patients taking direct oral anticoagulant (DOAC)

Both the SFCO and the BAOS base their decisions on the bleeding risk, the algorithm is binary depending if surgeries are low or high bleeding. The SFCO and BAOS agree on treating with no medication interruption when the bleeding risk is low and contacting the prescribing doctor for high bleeding risk procedures. However, if the bleeding risk is considered high, the SFCO directly recommends referring to the prescribing doctor. Based on

the thrombotic risk, the recommendations are to either perform the procedure with medication interruption, carry out treatment in a hospital facility and modify the treatment or postpone the intervention. Contrarily, the BAOS recommends that patients miss or delay the morning dose before treatment with no consultation with the prescribing doctor but by following the DOAC dose schedules for dental procedures table.

4. Conclusion

Overall, both bodies' decisions concerning the different types of antithrombotics in relation to the different types of procedures overlap, both consider the interruption a last resort decision. However, both societies acknowledge that some of these recommendations are based on conditional recommendations and further studies should be made for more evidence-based decisions. It should be noted that the SFCO and BAOS latest recommendations have a 7-year gap, this should be taken into consideration by clinicians and practitioners in their decision-making process.

Conflict of Interest

The authors declare that there is no conflict of interest.

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