Administration of Coagulation-Altering Therapy in the Patient Presenting for Oral Health and Maxillofacial Surgery

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KEYWORDS

• Hemostasis/coagulation • Anticoagulation therapy • Oral and maxillofacial surgery
• Specialty-society anticoagulation guidelines and recommendations • Dual-anticoagulation therapy
• www.WarfarinDosing.org

KEY POINTS

- Evidence-based data on management of anticoagulation therapy during oral and maxillofacial surgery/interventions are lacking.
- Clinical understanding and judgment are needed along with the most appropriate guidelines matching patient- and intervention-specific recommendations.
- To reduce serious dysfunction from hemorrhagic complications, one should implement "general surgery" patient recommendations.
- It is important to follow consensus statements of recognized experts in anticoagulation, review the pharmacology of medication package inserts, and request a hematology consult when necessary.
- The oral surgeon should understand risk factors for bleeding and how to treat bleeding complications.

INTRODUCTION

Prophylactic and therapeutic use of coagulation-altering therapy has been increasing owing to the increase in prevalence of coronary artery disease, atrial fibrillation (AF), and other risk factors of the aging US population.[1] As a result, several commonly used anticoagulants being prescribed along with action plans for use during the perioperative period and in outpatient settings with emphasis on management and considerations for appropriate decision-making alternatives are discussed herein. It is also intended to assist oral and dental health care providers in periprocedural anticoagulation management in the general patient population. However, it remains necessary that patient-specific evaluation of bleeding risks associated with the specific planned procedure as well as thromboembolic risks associated with any underlying disease that requires anticoagulation is investigated and understood. Deciding on patient-specific management plans (including holding therapy) should usually be made in consultation with the prescribing physician and the oral health care specialist performing the procedure, and then communicated directly to the patient. The management of patients receiving

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coagulation-altering medications (Box 1) recommends against concurrent use of medications (aspirin and other nonsteroidal antiinflammatory drugs) that affect other components of the clotting mechanism and can increase the risk(s) of bleeding complications.[2–4] Therefore, appropriate perioperative and periprocedural judgment is needed when making decisions about coagulation-altering therapy (continue, discontinue, or consider bridge therapy) and when to resume anticoagulation, in addition to recommendations regarding the time points when these events should occur.[5]

Box 1
Classes of hemostasis-altering medications

Herbal medications

- Garlic
- Ginkgo
- Ginseng

Antiplatelet medications

- Aspirin
- Nonsteroidal antiinflammatory drugs
- Thienopyridine derivatives (ticlopidine, clopidogrel)
- Platelet glycoprotein IIb/IIIa inhibitors (GPIIb/IIIa receptor antagonists)

Unfractionated heparin intravenous and subcutaneous

Low-molecular-weight heparin

Vitamin K antagonists: warfarin

Thrombin (factor IIa) inhibitors

- Desirudin
- Lepirudin
- Bivalirudin
- Argatroban

Factor Xa inhibitors

- Fondaparinux
- Rivaroxaban
- Apixaban
- Edoxaban

Thrombolytic and Fibrinolysis Medications

- Tissue plasminogen activator
- Streptokinase
- Urokinase
- Anistreplase

The incidence of hemorrhagic complications associated with performing oral and maxillofacial surgery/interventions in the patient receiving coagulation-altering therapy is unknown. Patient safety considerations defy prospective randomized study, and there is no proven or current laboratory model to implement. As a result, maxillofacial surgeons usually follow recommendations for general surgery patients. In addition, what has been portrayed in this article is investigation of the current dental and medical literature based on consensus statements representing the collective experiences of recognized experts in anticoagulation, case reports, clinical series, pharmacology, hematology, and risk factors for bleeding. Also summarized and adapted here in this article, in response to dental and oral health patient safety issues, are specialty society consensus conference guidelines and suggestions for the anticoagulated patient.[2–4,6–10] These practice guidelines or recommendations that summarize evidence-based reviews from the literature were compiled and discussed herein with a relatively conservative approach toward managing oral and maxillofacial surgery along with more routine dental interventions in patients on coagulation-altering medications. There is a lack of evidence-based guidelines for safely managing oral and maxillofacial patients taking anticoagulation medications; therefore, summary information from medical and dental specialty sources has been performed and divided into perioperative and periprocedural sections.

HERBAL MEDICATIONS AND ANTIPLATELET DRUGS

Many patients use herbal medications with potential for complications because of polypharmacy and physiologic alterations. Some complications include bleeding from garlic, ginkgo, and ginseng, along with the potential interaction between ginseng and warfarin. It remains important to be familiar with literature on herbals secondary to new discoveries about effects in humans. However, herbal medications, when administered independent to other coagulation-altering therapy is not a contraindication to planned interventions/surgery.

Aspirin and other nonsteroidal antiinflammatory drugs, when administered alone during the perioperative/periprocedural period, are not considered a contraindication. In patients on combination therapy with medications affecting more than 1 coagulation mechanism, clinicians should be cautious about increased risks of bleeding.[11,12] Cyclooxygenase-2 inhibitors have