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Challenges of Dentistry Patients on Anticoagulants

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Introduction

- We are members of the Global Thrombosis Forum (GTF, www.gtfonline.net), a non-profit organization which is an affiliate of the North American Thrombosis Forum or NATF.
- I would like to introduce some statistics to understand how anticoagulants can impose challenges in dentistry patients.
- Between 2014 and 2019, total anticoagulation claims increased from 23.5 to 30.6 million (+30%), an indication that more and more people are in need of anticoagulation. The number of people who need dental procedures has also risen.
- People who need dental procedures and are on anticoagulants need special attention.
- Antithrombotic medications including anticoagulants such as warfarin, antiplatelet agents like aspirin, and **D**irect **O**ral **A**nti**C**oagulant agents (DOAC's) such as apixaban and rivaroxaban are used by millions of dental patients to prevent various thrombotic complications including stroke or heart attack.
- We decided to research this important topic of the need of anticoagulation in patients who require dental procedures.

What is an Anticoagulant?

- Anticoagulants help prevent the formation of blood clots in the body.
- Blood clots are life threatening so it is imperative that patients who are in need of anticoagulants receive them.
- Anticoagulants are given when a patient is at a high risk of developing a blood clot or if one has a blood clot.
- They can be given through the IV route (heparin), taken orally (warfarin, DOAC's), or injected by the IV route (heparin or heparin analogs).





Types of Anticoagulants

- Heparin: Helps to stop clotting by activating antithrombin, which works in the body's anticlotting operation. Antithrombin helps to keep the clotting factors in the body from working properly.
- Heparin is normally given through the intravenous route, often before surgeries are performed to prevent the formation of blood clots during the surgery.
- Warfarin: Helps to prevent blood clots from forming in the body by disrupting Vitamin K's role in blood clotting. Warfarin can be dangerous though as it can cause severe bleeding and vomiting blood.
- DOACs: DOAC's help prevent blood clots from forming.
- DOAC's inhibit thrombin in the coagulation cascade which stops blood from clotting in the body, and are the more convenient option.

Fibrin Mesh

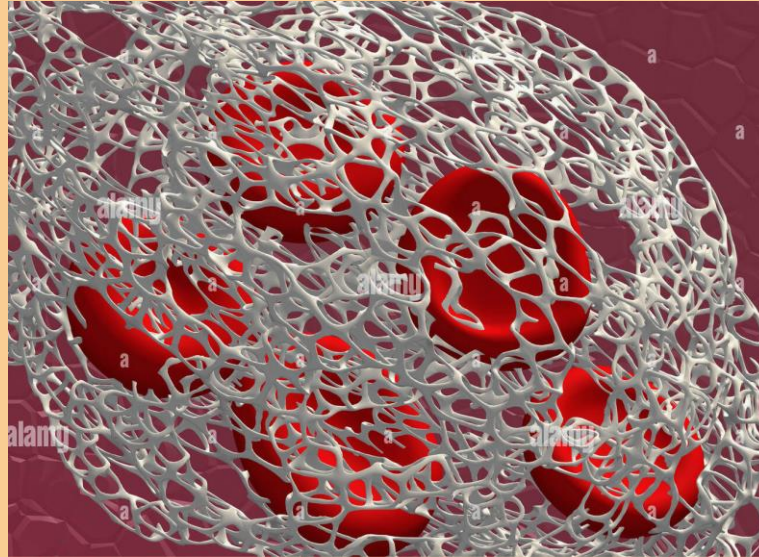


Figure 1: Formation of a fibrin mesh

Coagulation Cascade

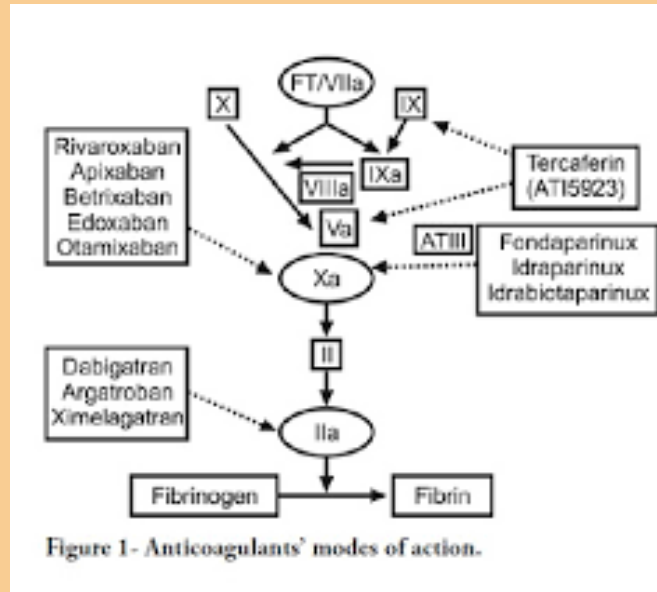



Figure 2: Coagulation cascade and site of action of anticoagulants



Use of Anticoagulants in Various Conditions

- Anticoagulants are prescribed for a variety of conditions, including atrial fibrillation, artificial heart valve, valvular heart disease, left ventricular dysfunction or thrombus, history of deep vein thrombosis or embolism, and history of transient ischemic attack or stroke.
- Antiplatelet drugs are also prescribed as antithrombotic medications for a variety of conditions, including atrial fibrillation, history of angina or myocardial infarction, coronary artery disease prevention, history of coronary bypass surgery, history of transient ischemic attack or stroke, and asymptomatic carotid artery disease.

Use of Anticoagulants in Various Conditions (cont.)

- Apixaban has several advantages over warfarin and even rivaroxaban, making apixaban the drug widely used in patients undergoing dentistry
- Medicare and Medicaid populations are transitioning to more effective and safer yet more expensive forms of anticoagulation.

From Angela Duvalyan, Ambarish Pandey; Muthiah Vaduganathan, et al

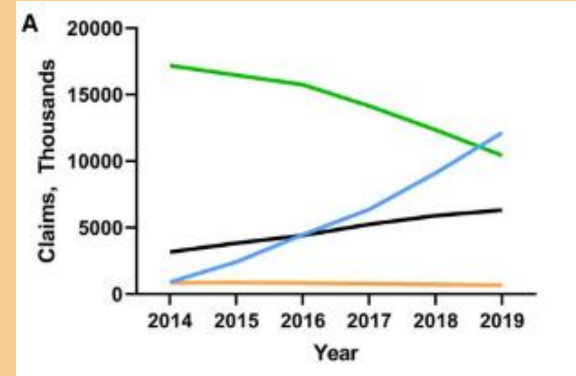


Figure 3: Dental claims between the years 2014 to 2019

Use of Anticoagulants in Various Conditions (cont.)

- The rising use and the costs in apixaban and rivaroxaban may lead to financial burden for Medicare, Medicaid, and patients using other forms of insurance and require further effort to ensure that access to these very useful and life saving drugs is not limited by cost.

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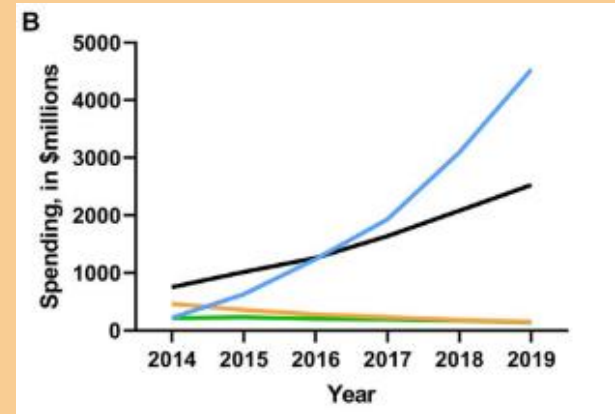



Figure 4: Spending on dental claims between the years 2014 to 2019



Challenges to Dentists with Patients Who are on Anticoagulants

- Dentists must weigh the risks of postoperative bleeding in patients whose antithrombotic medications are continued versus the risk of thromboembolic complications if antithrombotic medications are interrupted for dental procedures.
- The dental and medical literature shows only minimal risk for bleeding complications in patients whose anticoagulation or antiplatelet medication is continued for dental surgery, and if bleeding complications occur, they can usually be easily controlled with local measures for hemostasis.
- The literature also shows a small but significant risk of catastrophic or fatal embolic complications in patients whose anticoagulation or antiplatelet medications are interrupted for dental procedures.
- There is usually no valid reason to interrupt therapeutic levels of continuous anticoagulation or antiplatelet medications for dental surgery with local measures available for hemostasis.



Are Dental Patients Who are on Anticoagulants Different from Those who Do Not Need this Therapy?

- The patients who are on anticoagulant therapy are the same as those not needing the therapy, and yet they still need to attend their routine dental check up.
- There are a few scenarios when a patient on anticoagulants will need to go to the dentist, for example, when the patient needs a molar extractions, a tooth extractions, a cavity filled, or a simple dental cleaning is another example of when a patient on anticoagulants might need to go to the dentist.



Do Patients Undergoing Dental Procedures Need Anticoagulants?

- Most dental patients actually don't need anticoagulants.
- However, in some selected patients, anticoagulants may be needed, or required.




American Dental Association (ADA) Recommendations

- The ADA recommends, “It is generally agreed that anticoagulant [including antiplatelet] drug regimens should not be altered prior to dental treatment.
- If you stop taking, or take less of, the anticoagulant medication, you increase your chance for blood clot development, which could result in thromboembolism, stroke, or heart attack.
- The risks of stopping or reducing this medication routine outweigh the consequences of prolonged bleeding, which can be controlled with local measures.”

Recommendations by Other Major Medical Associations in the U.S.

- Besides the ADA, American Heart Association, American College of Cardiology, Society for Cardiovascular Angiography and Interventions, American College of Surgeons, and American College of Chest Physicians have concluded that antiplatelet therapy should be continued for dental procedures.





Is There a Protocol Dentists Follow for a Safe Dental Extraction in Patients on Anticoagulants?

- Dentists don't typically follow a specific protocol for a dental extraction, instead they follow procedures based on a patient's past history and specific information provided by the patient's physician.
- The ADA provides insight on whether or not doctors should continue or discontinue anticoagulant medication.
- Examples of procedures where anticoagulant treatment should not be stopped are during simple dental extractions, such as removing a singular tooth, filling a cavity, and dental cleaning.



Medical Clearance

- Many of the patients who are on anticoagulants needing dental management are ambulatory, yet they may have chronic medical conditions that a practitioner suspects may increase the risk of an unfavorable outcome to routine oral health care.
- These types of circumstances often trigger a consultation with a physician to gather additional relevant medical information and, sometimes, advice on how best to manage the patient's care.
- A medical clearance is often needed from the primary treating physician for a patient on anticoagulants going to visit the dentist.



Dental License

- A dental license is not a license to defer dental treatment decisions to non dentists, even if the non dentist is a physician.
- While physician consultation can and should be a valuable tool for dentists, especially for gaining information necessary for safe patient treatment (eg, a patient's INR level), it is not a substitute for knowledge, experience, and clinical judgment.
- If a patient's anticoagulation treatment is planning to be interrupted then the dentist should explain to the patient that if a bleeding complication occurs at all, it would unlikely be catastrophic or fatal. In no case should a dentist recommend interruption of antithrombotic medications. If the patient's antithrombotic medication is to be interrupted, it is solely the physician and not the dentist who should order the interruption.



Conclusion

- In conclusion, anticoagulants are an extremely important treatment option for those undergoing complicated dental operations and should not be discontinued.
- The risks of stopping these medical treatments far outweigh the risks of extended bleeding, which can be controlled with simple measures.
- There are various different types of anticoagulants that all serve a common goal, but some are better suited for specific circumstances than others (apixaban more suitable in patients with kidney disease).
- Physicians are fully responsible for finding out specific information about the patient's history with bleeding and anticoagulants.
- If proper research is not performed prior to adjusting the anticoagulant dose, the physicians could face legal action in the case of an injury associated with the anti-coagulated status.



Acknowledgments

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