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Original Research Article

Postoperative Evaluation of the Patients on Antiplatelet Therapy for Bleeding after Dental Extractions

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Abstract

Introduction: Antiplatelet treatment (APT) is given to patients with ischemic heart disease. Because of this research, we now have a concrete procedure to follow when deciding whether or not to do extractions on patients receiving APT. Substances and Techniques: After gathering extensive background information from each participant, researchers extracted 120 teeth from study participants' mouths. All patients had their bleeding times evaluated before surgery, and those with normal times were taken up for local anesthetic procedures. After the extraction, local haemostatic measures were used to stop the bleeding. Following the first 30 minutes of in-clinic observation, all patients had a telephone evaluation between 24 and 48 hours post-procedure. Haemostatic measures with local haemostatic drugs were used if there was active oozing from the surgical site at any time.

Results: After 1 hour, 17 individuals on mono antiplatelet therapy had bleeding, although this symptom resolved by the 24-48-hour mark. It's statistically significant, with a P-value of less than 0.001. Twelve patients on dual APT had bleeding during the first hour, three patients within the first 24 hours, and none within the first 48 hours. It's statistically significant (P 0.001) if you ask me.

Discussion: For individuals who need a tooth extraction, the advantages of continuing APT exceed the dangers of postoperative bleeding.

Conclusion: Patients at high risk for cardiovascular events including a heart attack, a stroke, or death from a blood clot may benefit from antiplatelet therapy. Normal dental extractions cause modest bleeding, and antiplatelet medications do not significantly reduce this bleeding.

Keywords: Antiplatelets, Aspirin, Clopidogrel, Dental Extraction, Hemostasis, Postextraction Bleeding.

Introduction

Medicines that inhibit platelet activity are known as antiplatelet medicines. They are prescribed for patients with thromboembolic illnesses including CHD and stroke. Aspirin and thienopyridines (like clopidogrel) are two of the most used oral antiplatelet medicines [1].

Aspirin prevents platelet aggregation by permanently inhibiting the enzyme cyclo-oxygenase-1 (COX-1), which creates thromboxane A2. This prolongs the time it takes for blood to clot. Complete inhibition of the COX-1 enzyme and, hence, maximum antiplatelet action may require several days when aspirin is administered at modest dosages (75 mg/day). Aspirin's maximum antiplatelet impact at a dosage of 160-325 mg/day is reached within 30 minutes. Aspirin is used for the long-term prevention of heart attacks and strokes at low doses (75-150 mg/day), while higher doses (160-325 mg/day) are used when an immediate anti-clotting effects is needed (such as in the treatment of acute heart attacks and unstable angina) [2,3].

Aspirin and clopidogrel are two of the most often used antiplatelet medications. Minor oral surgery, such as tooth extraction, is an area of ongoing dispute in regards to the care of patients on APT, with some practitioners favoring the continuation of medicines while others preferring to follow the standard practice of stopping the drug [4]. However, prior research has demonstrated that modest oral surgical procedures may be performed without interrupting antiplatelet medications, with only a small number of complications[5]. The participants in this study were all on antiplatelet medication, and their bleeding following tooth extractions was the primary endpoint.

Method

In this prospective research, 120 APT patients who had scheduled teeth extractions with the Department of Oral and Maxillofacial Surgery were included. All patients gave their permission after being fully informed. Patients on maintenance APT who presented for dental extraction and patients with medical compromise who were deemed suitable for extractions under local anesthetic were included. Liver illness, high blood pressure (>140/90 mm Hg), bleeding or coagulation problems, a history of extended bleeding episodes, an impacted tooth, a Grade II/III mobile tooth, and uncontrolled systemic diseases are all reasons to avoid getting dental work done.

Patients were brought in for surgery only after a complete case history was collected, which included the patient's age, gender, diagnosis, the name of the antiplatelet medicine, and the dosage. All patients had their bleeding times measured before surgery using the Dukes' approach. The typical time for bleeding in surgical patients was found to be between 2 and 5 minutes. Under local anaesthetic, we were able to complete the extraction surgery.

After the extraction, local haemostatic measures were used to stop the bleeding. After the first 30 minutes of in-clinic observation, all patients had a telephone evaluation between 24 and 48 hours post-procedure. If significant bleeding continued from the surgical site after 30 minutes, local haemostatic treatments were used (oxidized cellulose, Gelfoam pack, bone wax). Patients who showed signs of oozing during a 24-hour follow-up telephone interview were summoned back in for immediate in-person care. The Chi-square test was used to assess the data, and a value of less than 0.001 indicated statistical significance.

Results

At 1 hour after mono APT, 17 patients (14.1%) had bleeding, whereas 77 (64.1%) did not. None of the patients on mono APT had shown postoperative hemorrhage at the 24-48 hour mark. Twelve (10%) patients on dual antiplatelet therapy (DAPT) had postoperative

bleeding at 1 hour, whereas 14 (11%) individuals did not. Only 3 patients (2.5%) had bleeding that persisted for more than a day. There were no symptoms of bleeding in any of the patients taking dual antiplatelet therapy after 48 hours (Table 1).

Table 1: Analyzing the frequency of bleeding episodes in patients receiving monotherapy vs dual therapy

Time	Bleeding	Mono therapy	Dual therapy	P value
1 hr	present	17 (14.1%)	12 (10%)	0.01
	absent	77 (64.1%)	14 (11.6%)	
24 hr	Present	0	3 (2.5%)	0.07
	Absent	98 (81.6%)	19 (15.8%)	
48 hr	Present	0	0	
	absent	99 (82.5%)	21 (17.5%)	

Discussion

Patients using aspirin have been reported to have increased bleeding during and after extractions and gingival surgery [2,3]. It is unknown, however, if aspirin usage directly caused these bleeding events or whether other variables were at play.

The risk of major cardiovascular events was three times greater in individuals who discontinued aspirin medication compared to those who kept taking it, according to a meta-analysis that included 50,279 people receiving aspirin for secondary prevention. It took 10.7 days, on average, after stopping aspirin to have a thrombotic cardiovascular incident. The results of the study show that discontinuing aspirin use significantly worsened the prognoses of individuals with ischemic heart disease [6].

The risk of severe bleeding following tooth extraction is a crucial consideration in the care of patients using antiplatelet medications. Aspirin is still the most popular, frequently used, researched, and inexpensive antiplatelet medication on the market. Within minutes of taking a modest dosage of aspirin, the endoperoxides COX1 are permanently acetylated, resulting in the drug's antiplatelet effect[7]. Thus, platelet function will be suppressed throughout the typical platelet lifespan of around 10 days.

Bleeding from an extraction socket was managed with local haemostatic treatments in 32 of 120 patients using antiplatelet medications. After that time period, the patient was declared to be hemostasis-free and symptom-free. Only three patients who returned to OPD the following morning had bleeding from the extraction socket after 24 hours.

Minor oral surgical operations were performed on 51 patients in another trial who were receiving long-term low-dose aspirin treatment (acetylsalicylic acid 75 mg-100 mg/day). Time to bleed and platelet count were among the tests conducted. Aspirin was continued as usual if the patient was otherwise healthy, and LA (Local Anaesthesia) was used for any necessary surgical procedures.

All incisions were sutured, and patients were checked on at 24, 48, 72, 1, and 2 days post-op[8]. In conclusion, long-term low-dose aspirin therapy should not be interrupted for the majority of minor oral surgical operations. In a third trial, 546 patients taking either aspirin or clopidogrel or both drugs (dual treatment) were compared to 575 healthy people. Patients receiving dual treatment had a greater risk of extended postoperative bleeding, according to a research looking at the link between APT and a longer recovery time[9].

No significant difference in bleeding was seen between individuals who maintained antiplatelet medication and those who ceased

their antiplatelet therapy during tooth extraction in a randomized controlled study of 63 patients with coronary artery disease [10]. Ockerman *et al*. conducted a comprehensive study on the topic of bleeding with minor oral surgery in individuals on dual antiretroviral therapy (DAPT), single antiretroviral therapy (SAPT), or no APT. All studies maintained DAPT. relative to SAPT, DAPT increased perioperative bleeding risk, but it did not increase risk relative to no APT [11].

The current tendency, according to a study of the literature on the dental care of patients receiving antiplatelet therapy, is to continue the medication throughout the surgical operation, ensuring excellent control of the hemorrhage using local haemostatic measures [12]. Recently, a new family of oral anticoagulants for the treatment and prevention of thromboembolism has been become available. Drugs like Eliquis (apixaban) and Xarelto (rivaroxaban) and Pradaxa (dabigatran) are now on the market.

Since there is now no reversal agent available for the new medications, uncontrolled bleeding remains a key drawback compared to warfarin. Idarucizumab, a humanized monoclonal antibody against dabigatran, has altered this.When prompt reversal of dabigatran is needed for emergency surgery other urgent treatments, or when life-threatening or uncontrolled bleeding is present, intravenous idarucizumab may be administered. There are currently no antidotes for the other novel medications.

When compared to VKAs, most studies have found that nonvitamin K antagonist oral anticoagulants (NOACs) have more benefits than drawbacks [13]. NOACs have been shown to be preferable to VKAs in terms of safety (i.e., a lower incidence of major bleeding), ease of use, drug and food interactions, therapeutic window, and the need for laboratory monitoring.

According to the results of this investigation, discontinuing low-dose aspirin medication before to extraction operations is not necessary. Hemorrhaging can be stopped by local haemostasis alone. Normal dental extractions cause modest bleeding, and antiplatelet medications do not significantly reduce this bleeding. The danger of postoperative bleeding is outweighed by the advantages of antiplatelet medication usage. This research has certain limitations, including the fact that novel antiplatelet regimens need to be examined before their hazards in tooth extraction process can be evaluated.

Conclusion

Patients at high risk for cardiovascular events including a heart attack, a stroke, or death from a blood clot may benefit from antiplatelet therapy. Normal dental extractions cause modest bleeding, and antiplatelet medications do not significantly reduce this bleeding. Patients should take antiplatelet medicines since their advantages exceed the risk of bleeding after surgery.

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