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Assessment of effect of anti-platelet therapy on minor surgical procedures

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Abstract--Background: Antiplatelet therapy is to treat thromboembolic disorders, but it causes hemorrhages. Aspirin is the drug in regular practice. The present study was conducted to assess the effect of anti-platelet therapy on minor surgical procedures. Materials & Methods: 80 patients selected for mandibular third molar extraction of both genders were randomly divided into 2 groups of 40 each. In Group I, patients on antiplatelets drugs (75 mg of aspirin/ 75 mg clopidogrel) were enrolled and in group II, patients who discontinued the drug before 5 days of extraction of mandibular third molar were enrolled. Bleeding was observed after 1 and 24 hours. Results: Group I had 24 males and 16 females and group II had 14 males and 26 females. The mean bleeding time in group I was 75.21 seconds and in group II was 75.14 seconds. The mean duration of

surgery in group I was 54.2 months and in group II was 52.1 months. After 1 hour, no bleeding was seen in 38 in group I and 39 in group II and ooze in 2 in group I and 1 in group II. After 24 hours, no bleeding was seen in 37 in group I and 38 in group II and ooze in 3 in group I and 2 in group II. The difference was significant ($P < 0.05$). Conclusion: Minor surgical procedures such as single-tooth extraction can be performed without discontinuation of the antiplatelet therapy.

Keywords---Antiplatelet therapy, Aspirin, Minor surgical procedures.

Introduction

Platelet function is essential for platelet aggregation and antiplatelet drugs are used for prophylactic or therapeutic uses. Thromboembolic disorders such as coronary artery diseases and cerebrovascular diseases occur frequently due to change in lifestyle and increased life span. Commonly used oral antiplatelet drugs include aspirin and thienopyridines (clopidogrel, ticlopidine) IIb/IIIa platelet receptor inhibitors and phosphodiesterase inhibitors.¹

Aspirin is the drug is used regular practice.² The protective effects of APT against cardiovascular disease have been thoroughly explained throughout the groups at higher risk.³ Treatments carried out in the oral cavity, especially those that may cause blood extravasation, imply a high risk of perioperative bleeding in patients with an altered hemostasis. Although a 90% of minor postoperative bleedings are due to local factors such as the anatomical situation, excessive surgical trauma and/or not following postoperative indications, most of the severe bleedings are related with systemically alterations that compromise the primary or secondary hemostasis mechanisms.⁴

It is observed that maximal antiplatelet effect occurs several days after the initiation of clopidogrel. Aspirin therapy is preferably stopped before any surgical procedure by dentists and medical practitioners because of fear of excessive postoperative bleeding in patients on antiplatelet therapy. However, the stoppage of this medication may increase the risk of serious thromboembolism, myocardial infarction, or cerebrovascular accident and can be life threatening.⁵ The present study was conducted to assess the effect of anti- platelet therapy on minor surgical procedures.

Materials & Methods

The present study consisted of 80 patients selected for mandibular third molar extraction of both genders. All patients were on anti- platelet therapy such as aspirin or clopidogrel. The written consent was obtained from all patients. Demographic profile of each patient such as name, age, gender etc. was recorded. A thorough oral examination was carried out. Patients were randomly divided into 2 groups of 40 each. In Group I, patients on antiplatelets drugs (75 mg of aspirin/ 75 mg clopidogrel) were enrolled and in group II, patients who discontinued the drug before 5 days of extraction of mandibular third molar were enrolled. In all patients, bleeding time of was measured before extraction. Mandibular third

molar tooth extraction was carried out under local anesthesia. The extraction socket was sutured with 3-0 silk. A pressure pack of gauze was given for 1 hour. Bleeding after 1 hour and 24 hours was recorded. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

Results

Table I Distribution of patients

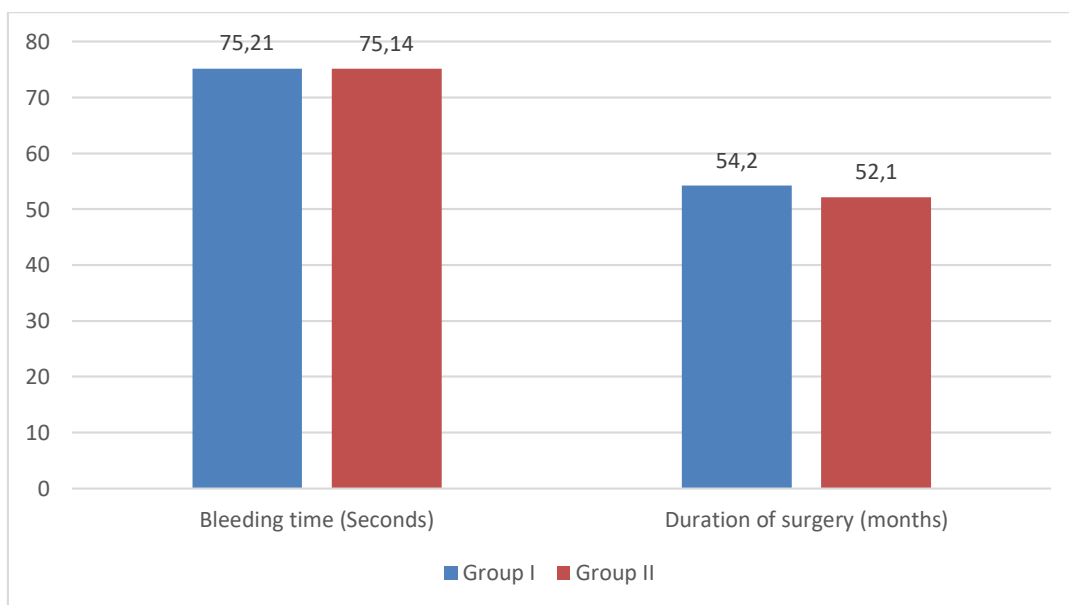
Groups	Group I	Group II
Male	24	14
Female	16	26

Table I shows that group I had 24 males and 16 females and group II had 14 males and 26 females.

Table II Assessment of parameters

Parameters	Group I	Group II	P value
Bleeding time (Seconds)	75.21	75.14	0.81
Duration of surgery (months)	54.2	52.1	0.05

Table II, graph I shows that mean bleeding time in group I was 75.21 seconds and in group II was 75.14 seconds. The mean duration of surgery in group I was 54.2 months and in group II was 52.1 months. The difference was significant ($P < 0.05$).

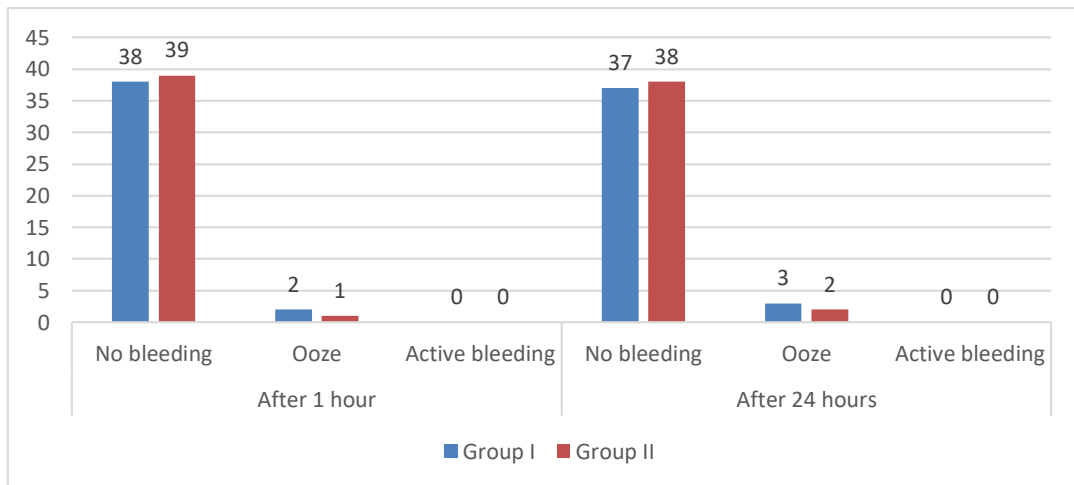


Graph I Assessment of parameters

Table III Assessment of bleeding

Post- operative bleeding	variables	Group I	Group II	P value
After 1 hour	No bleeding	38	39	0.05
	Ooze	2	1	
	Active bleeding	0	0	
After 24 hours	No bleeding	37	38	0.04
	Ooze	3	2	
	Active bleeding	0	0	

Table III, graph II shows that after 1 hour, no bleeding was seen in 38 in group I and 39 in group II and ooze in 2 in group I and 1 in group II. After 24 hours, no bleeding was seen in 37 in group I and 38 in group II and ooze in 3 in group I and 2 in group II. The difference was significant ($P < 0.05$).



Graph II Assessment of bleeding

Discussion

Clopidogrel is another alternative for aspirin. Dental patients under antiplatelet therapy are at a high risk and it is always a debate to stop it or not prior procedure. Studies recommended discontinuing aspirin usage for 7–10 days or at least for duration of 3 days.⁶ Thromboembolic events can occur, causing severe cardiac complications. Most of the dental surgical procedures carry a low risk of bleeding, and any excessive bleeding can be controlled by local hemostasis.⁷ Platelet interaction and cardiovascular disease progression remain an unsolved riddle for many years. The stoppage or discontinuation of daily antiplatelet drugs (aspirin/clopidogrel) can worsen the existing disease condition.⁸ The present study was conducted to assess the effect of anti-platelet therapy on minor surgical procedures.

We found that group I had 24 males and 16 females and group II had 14 males and 26 females. Malik et al⁹ assessed if aspirin or clopidogrel was associated with bleeding after minor oral surgical procedures. This study was conducted among one hundred patients who were planned for extraction of the third molar and they were divided into two groups. In Group A, patients on antiplatelets were included and in group B, patients who discontinued the drug before 5 days of procedure were included. The bleeding time of all patients was checked before extraction, 1 hour after extraction and 24 hours after extraction. Results revealed that none of the patients showed active bleeding in the postoperative period. The results for postsurgical bleeding were statistically insignificant.

We observed that mean bleeding time in group I was 75.21 seconds and in group II was 75.14 seconds. The mean duration of surgery in group I was 54.2 minutes and in group II was 52.1 minutes. Zabojszcz et al¹⁰ conducted a meta-analysis and studied the effect of single and double antiplatelet therapy on the occurrence of immediate local bleeding complications during dental extractions. It was observed that the overall event incidence ie. bleeding complication after extraction in the entire population was 1.59%. The use of double antiplatelet therapy DAPT was associated with an odd ratio OR of 40.23 increase in risk of bleeding events occurrence in comparison to the control group. There was significant heterogeneity in the study.

We observed that after 1 hour, no bleeding was seen in 38 in group I and 39 in group II and ooze in 2 in group I and 1 in group II. After 24 hours, no bleeding was seen in 37 in group I and 38 in group II and ooze in 3 in group I and 2 in group II. Kumar et al¹¹ determined risk of bleeding in patients on antiplatelet therapy during undergoing minor oral surgical procedures such as trans-alveolar extraction of third molar, biopsy, single or multiple teeth extraction and alveoloplasty. Patients were divided into three groups. Group A were patients under antiplatelet drug therapy (aspirin) and group B were on aspirin and clopidogrel and group C were patients without any drug therapy (healthy patients). Out of 200 patients, Level 1 hemostatic measures were required for 129 (64.5%) patients, Level 2 hemostatic measures were taken for 68 (34.0%) patients, and Level 3 hemostatic measures were taken for 3 (1.5%) patients.

Conclusion

Authors found that minor surgical procedures such as single-tooth extraction can be performed without discontinuation of the antiplatelet therapy.

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