Original Article

Evaluation of Post Extraction Bleeding Risk for Oral Surgery under Continued Clopidogrel Anti-platelet Therapy

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DOI: https://doi.org/10.3329/jafmc.v18i2.63991

Abstract

Introduction: Continuous oral anti-coagulant treatment has been used to reduce the threat of thromboembolism for further than half a century, dragging the lives of thousands of cases. There is increased risk of haemorrhage doing dental procedures in patients on anticoagulant and antiplatelet therapy.

Objective: To evaluate the post extraction bleeding rate for oral surgery carried out under continued anti-platelet therapy with clopidogrel.

Methods: This prospective observational study was carried out in the department of 'Oral and Maxillofacial (OMF) Surgery', Military Dental Centre (MDC), Dhaka. A total of 35 patient's maintenance once daily low dose clopidogrel were purposely selected for this study. The extraction procedure under local anesthesia using 2% lidocaine with 1:1,00,000 epinephrine were done traumatically. A gelatin sponger piece was put down in socket and shut by atraumatic silk. The patients were instructed to apply pressure pack with sterile gauze for within 30 mins. Timing of haemostasis was done in every 9.5 minutes for within 30 minutes.

Results: Among 35 patients, mean age was 52.3±10.1 with age range 35 to 69 years. Male patients were predominant (60.0%) with male:female ratio was 1.5:1. Simple extraction was done in 29 patients while rest extractions were done surgically. Majority 22(62.9%) of the patients were managed by pressure pack with gelatin sponge while 15(42.9%) patients were managed by pressure pack only. Regarding post extraction bleeding, majority of the cases haemostasis (91.4%) was achieved within 9.5 minutes after teeth extraction while only 3(8.6%) patients haemostasis 19 to 28.5 minutes after teeth extraction.

Conclusion: The study concluded that majority of the patients were managed pressure pack with gelatin sponge and most of the patients had post extraction bleeding time 9.5 minutes. Minor oral surgery can be carried out safely under continued mono antiplatelet therapy with clopidogrel.

Key words: Antiplatelets, Aspirin, Clopidogrel, Post extraction bleeding, Oral and Maxillofacial (OMF) surgery.

Introduction

Dental lines challenges the body's haemostatic medium[1]. In the worldwide, cardiovascular disease is one of the major causes of morbidity and mortality[2]. Atherothrombotic events in patients with coronary artery disease (CAD) are prevented with platelet aggregation inhibitors. Optimal dental operation in cases on long-term antiplatelet isn't easily defined. Antiplatelet termination increases the threat of thrombotic complications, where as continued antiplatelet remedy is assumed to increase the bleeding hazard after dental procedure[3]. The purpose of this study was to evaluate the post extraction bleeding rate for oral surgery carried out under continued anti-platelet therapy with clopidogrel.

Materials and Methods

This prospective observational study was carried out in the department of Oral and Maxillofacial Surgery, MDC Dhaka, conducted from 01 January 2019 to 30 June 2019. A total of 35 patients were included in this study who were taking low dose clopidogrel (75mg) once daily. Complete history was taken either from patient or accompanying attendants. Thorough dental clinical examination was done. Medical history, extraction of tooth and relevant investigation reports were collected. The extraction procedure under local anesthesia using 2% lidocaine with 1:1,00,000 epinephrine were done traumatically. A gelatin sponger piece was put down in socket and closed by atraumatic silk which was removed after 05 days. The patients were introduced to apply pressure pack for within 30 minutes. Timing of haemostasis was done in every 9.5 minutes upto 30 minutes time period. Patients were discharged with advice and contact information if bleeding stopped.

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With accurate timing, patients were also advised to provide information about any further incident of post bleeding. Follow up was given contacted by phone 12h, 24h, 48h and 5 days postoperatively. If there was occur any bleeding after initial 30 minutes, the patient was re-examined, managed accordingly and evaluated after 30 minutes. Patients were discharged after the haemostasis has been achieved. Data from each procedure was collected and then statistical analysis was done by using Statistical Package for Social Sciences (SPSS).

Results

Total 35 subjects were enrolled in the present study. Maximum patients (37.1%) between the age range of 56-65 followed by 31.5% patients belonged to age group 35-45 years, with mean age 52.3±10.1 years (Table-I). Male patients were predominant 21(60.0%) and female was 14(40.0%). Male:Female ratio was 1.5:1 (Table-II). After teeth extraction, haemostasis was achieved by pressure pack and gelatin sponge in 22(62.9%) cases (Table-III). Haemostasis was achieved within 9.5 minutes after extraction in majority of the cases 32(91.4%) while the remaining had post extraction bleeding time of more 9.5 minutes (Table-IV).

Table-I: Distribution of the study patients by age

Age group	Number of patients	%	Mean±SD
35-45 years	11	31.5	52.3±10.1 (35–69) years
46-55 years	09	25.7	
56-65 years	13	37.1	
>65 years	02	5.7	
Total	35	100.0	

Table-II: Distribution of the study patients by sex

Sex	Number of patients	Percentage
Male	21	60.0
Female	14	40.0
Total	35	100.0

Table-III: Distribution of the patients by primary haemostatic care

Timing of haemostasis	Frequency	Percentage
9.5 min	32	91.4
19 min	01	2.9
28.5 min	02	5.7

Table-IV: Post extraction bleeding time of the study patients

Primary haemostatic care	n	%
Pressure pack	15	42.9
Pressure pack + gelatin sponge	22	62.9
Pressure pack suturing	01	2.9
Pressure pack + gelatin sponge + suturing	02	5.7

Discussion

In the worldwide, cardio-vascular disease account for the highest mortality and morbidity. With adding mindfulness and health knowledge, there's a striking drop of cardio-vascular mortality with the preference of preventative and conservation antiplatelet remedy[4].

Clopidogrel is a most common antiplatelet drug used as an alternative for aspirin or in dual antiplatelet therapy with aspirin. Clopidogrel irreversibly inhibits adenosine diphosphate which is necessary for platelet aggregation during blood coagulation. Madan et al[5] reported out of 51 patients, 32 were males and rest 19 were females and their age ranging from 45 to 70 years. Similarity results found in our study where male:female ratio was 1.5:1 with age ranging from 35-69 years. Brennan et al[6] in a study examining the relationship between bleeding time and post extraction bleeding in a healthy control population found no correlation between cutaneous BT and oral bleeding. Similar findings also found in the present study.

This study showed postoperative bleeding rates of 5.7% under continued mono clopidogrel therapy. In a study done by Park et al[7] reported that 1(1.7%) out of 59 excessive intra extraction bleeding under continued dual anti-platelet therapy but their study did not to follow up the patients for subsequent bleeding incidence. Girtora et al[8] showed immediate post operative bleeding was 5.2% with continued clopidogrel and 7.9% for dual clopidogrel therapies that was supported by this study too. Oral surgery patients having platelet function disorders due to drugs are always at risk of post operative bleeding depending on the proposed surgical intervention, the nature and severity of platelet dysfunction, localization and extent of the extraction trauma. Also since the extraction site cannot be closed primarily the risk to allow adequate local haemostasis management is difficult. A severe haemorrhage and haematoma can place the patient's life in danger by causing obstruction of the airway[9]. Aredekian et al[10] found that daily dose of 75 mg clopidogrel did not increase the bleeding during tooth extraction. Their study showed a significance difference was observed in bleeding time between continued and withdrawal anti-platelet drug before tooth extraction. However, they found within the normal bleeding time range in both groups where they used a local haemostatic method to control bleeding. Similar findings were also observed in present study. In this study, 72.5% simple extraction was done without withdrawal of anti-platelet therapy. Nabeel et al[11] found that checking for haemostatic using a packing gauze bite firmly for 15-30 minutes can be taken to control bleeding after tooth extraction. In this study, local haemostatic measures were used, consisting of pressure pack with or without gelatin sponge and use of non-resorbable sutures. This technique is a simple, low cost, easily available and provided good results. This study showed that after tooth extraction using pressure pack and gelatin sponges, majority cases (62.9%) achieved primary haemostasis.

Conclusion

In conclusion, the results suggest that, most of the patients had post extraction bleeding time 9.5 minutes. Minor oral surgery can be carried out safely under continued mono antiplatelet therapy with clopidogrel. Further prospective randomized controlled trials with large sample size, full reporting of outcomes and with proper blinding of the examination in a larger period of time are highly recommended.

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