

Frequency of bleeding during Dental extraction in patients taking Aspirin and Anti-Platelet Therapy

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Abstract

Objective: Many patients suffering from ischemic heart disease are taking Aspirin prophylactically to prevent hyper-coagulable state. Such patients frequently report to dentists for tooth extraction. Here comes the dilemma of whether one should stop aspirin prior to extraction or not. The objective of the study was to determine if it is necessary to stop aspirin prior to tooth extraction on basis of post-extraction bleeding or not.

Design: The study was a descriptive case series.

Place and duration of study: The study was carried out from April 2018 to April 2019 at the Department of Oral and Maxillo-facial Surgery, Ayub Teaching Hospital, Abbottabad.

Material and Methods: The sample size was 162-patients. The sampling technique was non-probability convenience sampling. Demographic data was collected on a pro-forma via interview. Then extraction of a single tooth was done of these patients who were already taking aspirin 75mg once a day and they were monitored for post-extraction bleeding. Data was analyzed by calculating frequencies, percentages, means and standard deviations.

Results: Only 5(3.086%) patients had excessive post-extraction bleeding controllable with local hemostatic measures, whereas 157(96.91%) patients had none. The presence of post-extraction bleeding was significantly associated with gender ($p=0.008$).

Conclusion: We conclude that it is safe to perform extraction of patients on Aspirin.

Keywords: Tooth extraction, hemorrhage, Aspirin, Anti-Platelet Therapy

Introduction:

Patients suffering from cardio-vascular diseases who are on Aspirin may be treated by dental surgeons. Such patients are advised by surgeons and physicians to alter or stop Aspirin before any surgical procedure because of fear of unwarranted and unrestrained bleeding. Adjustment of Aspirin therapy can put patients at risk of strokes and heart attacks. While on continuing Aspirin, there is an increased possibility of bleeding during and after a surgical procedure, and discontinuing or altering it can increase the risk of thrombo-embolic event.¹ Various recommendations have been made. Some dictate discontinuing Aspirin for 7-10 days,² while others state to stop Aspirin for 3-days till when the number of platelets are adequate before per-

forming surgical dental procedures.³ It is recommended now that Aspirin should not be discontinued before any dental extraction.⁴ It was found that the quantity of bleeding expected during oral surgical procedures in patients taking Aspirin is manageable by regular local hemostatic measures including suturing and use of gauze as pressure pack, gelatin sponge, oxidized cellulose or topical tranexamic acid.⁵⁻⁷ On the other hand, scientific data confirms that by discontinuing aspirin there is advanced recovery of platelets that leads to increased risk of thrombo-embolic state. Increased thromboxane A2 and reduced fibrinolytic activity has been reported after stopping aspirin.⁸

The objective of this research was to assess the

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possibility of bleeding after dento-alveolar extraction of patients who are already taking aspirin 75mg per day as an anti-platelet drug. This study will help the patients as they will not have to go through the tedious routine of stopping Aspirin, waiting for extraction and so exposing themselves to prothrombotic state. It is of importance to dental surgeons as they will have a clear guideline on how to handle patients taking aspirin. Physicians will be benefited as their burden will be reduced. All this will help the community by decreasing unnecessary financial burdens.

Material and Methods:

It was a descriptive case series conducted at the Department of Oral and Maxillo-facial Surgery, Ayub Teaching Hospital, Abbottabad, Pakistan from April 2018 to April 2019. The sample size of 162 was calculated with the assistance of the World Health Organization (WHO) sample size calculator with the parameters comprising of 95% confidence level, anticipated proportion of bleeding of 3.93% and absolute precision of 3%.¹

The inclusion criteria comprised of patients on long-term Aspirin that needed extraction of a single tooth, should have taken 75mg of aspirin for at least 2-weeks, any gender with age limit of 13-80 years. Patients excluded from the study were those with systemic diseases like blood disorders, kidney, or liver disease, any coexisting medication affecting hemostasis such as anti-coagulants or anti-inflammatory drugs, bone marrow disorders or patients who needed extraction of more than 1-tooth, surgical extraction, extractions in different quadrants of mouth, pregnancy, children and those who do not give consent. Non-probability convenience sampling was done in which every consecutive patient who satisfied the inclusion criteria were selected.

Approval for the study was taken from the Ayub Teaching Hospital, Institutional Ethical Review Board Committee and every patient enrolled in this research provided a written informed consent. The data of the patients were collected with the help of a proforma via interview method.

Dental extraction was performed by an experienced dentist. It was made sure that sterilization was optimum during the extraction. Single, simple dental extraction was done after using lignocaine as local anesthesia. All teeth were extracted by same dental surgeon. Standard technique of forceps extraction was done. After extraction, for sake of hemostasis wet gauze pressure pack was placed for 30-minutes. Patients were evaluated again after 30-minutes to check for bleeding. If there was persistent bleeding after 30-minutes, hemostasis was achieved by placing gelatin sponge and suturing the extraction socket with 3.0 silk. Patients were given written post-operative instructions upon discharge after it was made sure that hemostasis was achieved. Surgeon's contact number was also provided in case of any emergency. In case of any post-operative bleeding, patients were instructed to contact the surgeon instantly. Bleeding was defined as "clinically significant" if it fulfilled any one of the conditions; bleeding due to which patient has to come back to the surgeon, persistent even after 12-hours of extraction, formation of a large hematoma and/or bleeding to an extent that resulted in blood transfusion.

Statistical analysis was performed by using Statistical Package for the Social Sciences (SPSS) version 20.0. Categorical variables like gender and presence of bleeding were described as frequencies and percentages. The quantitative variable of age was described as mean and standard deviation. The outcome variable was stratified by age and gender. Chi-square test was used at 5% level of significance to know the differences by age and gender with respect to outcome variable with statistical significance at a value of $p < 0.05$ and a confidence interval of 95%.

Results:

Overall 162-patients participated in the study. As per age wise distribution, 56(34.56%) patients were in the 13-50 years age group and 106 (65.43%) patients were in the 51-80 years age group (Table 1). Mean and standard deviation for age were 45.55 and 15.07 respectively. 127(78.39%) patients were male patients and 35(21.60%) patients were female patients

Table 1: The distribution of data variables

| Variable | Groups | Frequency | Percentage (%) |
|----------------------|-------------|-----------|----------------|
| Age | 13-50 Years | 56 | 34.56 |
| | 51-80 Years | 106 | 65.43 |
| Gender | Male | 127 | 78.39 |
| | Female | 35 | 21.60 |
| Presence of Bleeding | Yes | 05 | 3.09 |
| | No | 157 | 96.91 |

Table 2: Association of presence of bleeding with gender

| Gender | Presence of bleeding | Frequency | Percentage (%) | P value |
|--------|----------------------|-----------|----------------|---------|
| Male | Yes | 01 | 0.61 | 0.008 |
| | No | 126 | 77.77 | |
| Female | Yes | 04 | 2.46 | 19.13 |
| | No | 31 | 19.13 | |

Table 3: Association of presence of bleeding with age

| Age | Presence of bleeding | Frequency | Percentage (%) | P value |
|-------------|----------------------|-----------|----------------|---------|
| 31-50 Years | Yes | 03 | 1.85 | 0.226 |
| | No | 53 | 32.71 | |
| 51-80 Years | Yes | 02 | 1.23 | 64.19 |
| | No | 104 | 64.19 | |

(Table 1). As for the presence of bleeding, only 5(3.09%) patients were recorded with it, whereas 157(96.91%) patients had no presence of bleeding (Table 1). The association between presence of bleeding and gender was statistically significant ($p=0.008$) (Table 2), while its association with age was statistically insignificant ($p=0.226399$) (Table 3).

Discussion:

Dental surgeons are challenged regularly with the dilemma of whether to request the patients to adjust, discontinue or continue the use of aspirin before having dental extraction. In this study, it was found out that only 5-patients (3.086%) reported with excessive post-extraction bleeding out of 157-patients (96.91%) which was controlled with local measures such as suturing. It is in accordance with the study performed by Garnier et al., in which only one patient (1.9%) reported with post-extraction bleeding.⁹ Similarly, Shah et al., reported bleeding in 5-patients

(3.93%) only.¹⁰ Sunu et al.,¹¹ also recommended to continue aspirin therapy without stoppage before any dental surgical procedures. Brennan et al. studied extensively previous research on the management of patients taking aspirin that needed oral surgical procedures. Based on the results of their study, they also recommended to continue aspirin during dental extraction.¹² Oral Medicine and Oral Surgery Francophone Society has also stated that the stoppage of anti-platelet therapy before dental procedures is not necessary. The risk of bleeding is very low that can be controlled by local hemostatic measures.¹³ Saxena et al.,¹⁴ specified that it is uncommon in patients taking low-dose aspirin to experience bleeding after dental extraction while a study by Jahan et al.,¹⁵ found that there was no need to discontinue normal dose of aspirin. In a review article, Badal et al. stated that it is un-necessary to stop aspirin therapy before any dental procedure in accordance with the recent research. On the basis of literature they suggested that post-operative bleeding encountered in patients taking aspirin is easily handled by local measures.¹⁶

In this study, it was found that it was better to continue aspirin during dental extraction. This was in contrast to studies carried out by Scher¹⁷ and Foulke¹⁸ that showed an increased bleeding tendency in patients on aspirin. Schrodi et al.,¹⁹ and Royzman et al.,²⁰ found that patients who took low-dose Aspirin had increased bleeding on probing. Elad et al., reported a case of a patient taking dual anti-platelet therapy (aspirin 100 mg per day plus clopidogrel 75 mg per day). Severe life threatening haemorrhage occurred following non-surgical peri-odontal treatment that led to haemorrhagic shock.²¹

Patients taking aspirin are at increased risk of intra-operative and post-operative bleeding, but with drawing aspirin can increase the risk of thrombo-embolic event. Ferrari et al.,⁶ and Chassot et al.,²² suspected that by stopping aspirin therapy there is a biological platelet rebound phenomenon, that can lead to a pro-thrombotic state which may eventually cause fatal thrombo-embolic event.

There were some limitations in this study. Those patients were not included who had multiple extractions and those on combination anti-platelet therapy were not assessed. Non-random convenience sampling was used so the results of the study could not be generalized to the general population. The study was observational in nature, so it could not gather robust evidence regarding this research problem. Moreover, the study was carried out only in one centre.

Conclusion:

It is safe to perform extraction of the teeth in patients who are taking tablet Aspirin. There was no evidence of excessive post-extraction bleeding. Therefore, it is recommended to continue aspirin while performing tooth extraction that otherwise will make the patients prone to unnecessary pro-thrombotic state with catastrophic results. For future research, studies should be carried out with better study designs to explore further this research problem.

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Role and contribution of authors:

Rabia Syed, create the idea, interpret the data, and write the whole introduction.

Najia Sajjad Khan, help in search of literature.

Muhammad Bilal, help in review of the related literature.

Iram Abass, help in tabulation, critically review the article and made the final changes.

Salim Wazir, went through the article and made useful changes.

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