

**ORIGINAL ARTICLE****The prevalence of post extraction bleeding in the patients undergoing anti-coagulant therapy: A Retrospective study**Sanjay Kumar Bhagat<sup>1</sup>, Syed Wakeel<sup>2</sup>, Varun Salgotra<sup>3</sup><sup>1</sup>Consultant Oral and Maxillofacial Surgeon, Department of Health and Medical Education, J &K, <sup>2</sup>Registrar, <sup>3</sup>Lecturer, Department of Oral and Maxillofacial Surgery, IGGDC, Jammu, India,**ABSTRACT:**

**Background:** Patients on anticoagulant therapy who are scheduled to undergo tooth extraction are typically advised to continue anticoagulant therapy. Unexpected post-extraction bleeding is often experienced in clinical practice; however, the development of thromboembolism after tooth extraction because of the discontinuation or reduction of anticoagulant therapy has been reported. **Aim:** To evaluate the prevalence of post extraction bleeding in the patients undergoing anti-coagulant therapy. **Materials and method:** The study was conducted in the department of oral surgery of the dental institution. For the study we viewed medical records of the patients from January, 2013 to December, 2016. The subjects were divided into two groups, Study group comprised patients that were on anti-coagulant therapy for more than a year and Control group comprised normal healthy patients that were not on anti-coagulant medication. A total of 100 patients were selected, 50 in each group. The information regarding frequency of patients with post-extraction bleeding was extracted from the records and tabulated for further evaluation. **Results:** A total of 100 patient's medical records were studied. 62 patients were males and 38 patients were females. We observed that 12 patients in control group were positive for postoperative bleeding. Only 2 patients in control group were positive for post-operative bleeding. On comparing the results we observed statistically significant. **Conclusion:** Within the limitations of present study we conclude that prevalence of post-extraction bleeding is more in patients on anti-coagulant therapy.

**Keywords:** Warfarin, anticoagulant, post-extraction complications.

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**INTRODUCTION:**

Patients on anticoagulant therapy who are scheduled to undergo tooth extraction are typically advised to continue anticoagulant therapy.<sup>1, 2</sup> Unexpected post-extraction bleeding is often experienced in clinical practice; however, the development of thromboembolism after tooth extraction because of the discontinuation or reduction of anticoagulant therapy has been reported.<sup>3, 4</sup> Although fatal adverse events must be prevented, there is the additional risk of bleeding because of invasive treatment in these patients, and sufficient measures must be taken to prevent and limit excessive post-extraction bleeding. In the past, a number of studies have investigated tooth extraction with continued anticoagulant therapy and have reported that the frequency of post-extraction bleeding was in the range 0–26%.<sup>5, 6</sup> Hence, the present study is planned to evaluate the prevalence of post extraction bleeding for the patients on anti-coagulant therapy.

**MATERIALS AND METHOD:**

The study was conducted in the department of oral surgery of the dental institution. The ethical clearance of the study was obtained from the ethical committee of the institute. For the study we viewed medical records of the patients from January, 2013 to December, 2016. The subjects were divided into two groups, Study group comprised patients that were on anti-coagulant therapy for more than a year and Control group comprised normal healthy patients that were not on anti-coagulant medication. A total of 100 patients were selected, 50 in each group. Number of male patients was 62 and female patients were 38. The mean age of patients was 45.32 years. The information regarding frequency of patients with post-extraction bleeding was extracted from the records and tabulated for further evaluation.

The statistical analysis of the data was done using SPSS software version 10.0 for windows. The Chi-square test and Student's t-test were used to check the significance of the data. A p value less than 0.05 was predefined as statistically significant.

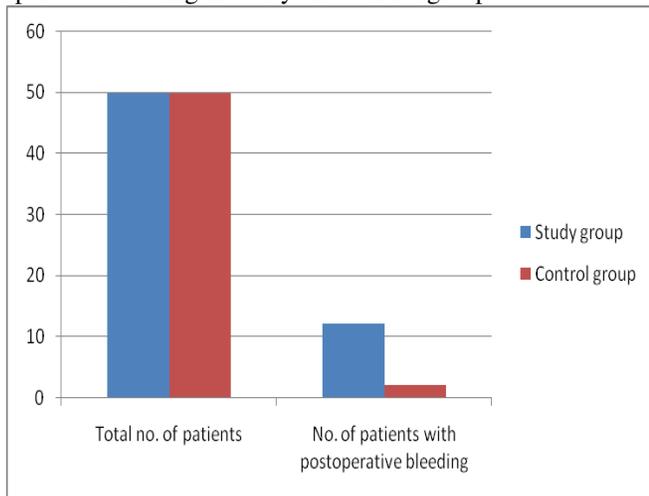
**RESULTS:**

A total of 100 patient's medical records were studied. 62 patients were males and 38 patients were females. **Table 1** shows the frequency of patients with postoperative bleeding in study and control group. We observed that 12 patients in control group were positive for postoperative bleeding. Only 2 patients in control group were positive for post-operative bleeding. On comparing the results we observed statistically significant results [Fig 1].

**Table 1:** Frequency of patients with post-operative bleeding in Study and control group

Group	Total no. of patients	No. of patients with postoperative bleeding	p-value
Study group	50	12	0.02
Control group	50	2	

**Figure 1:** Showing frequency of patients with post-operative bleeding in Study and control group



**DISCUSSION:**

Anticoagulation therapy is recommended to prevent strokes and systemic embolisms in patients with atrial fibrillation, thromboembolisms in patients with mechanical heart valves and deep vein thrombosis in patients undergoing knee or hip replacement surgery.<sup>7, 8</sup> The patients on anti-coagulation therapy are more prone to post-operative bleeding. The cessation of therapy is not required for minor oral surgical procedures. The present study was conducted to evaluate the prevalence of post extraction bleeding for the patients on anti-coagulant therapy.<sup>9, 10</sup> We retrospectively studied the previous records of patients in the department. We observed

that post-extraction bleeding was more common in Patients on anti-coagulation therapy as compared to normal healthy patients. The results were compared to other previous studies in the literature and results were found to be consistent.

Kataoka T et al conducted study aimed to verify whether the HAS-BLED score was useful in predicting post-extraction bleeding in patients taking warfarin. Participants included 258 sequential cases (462 teeth) that had undergone tooth extraction between 1 January 2010 and 31 December 2012 while continuing warfarin therapy. The following data were collected as the predicting variables for multivariate logistic analysis: the HAS-BLED score, extraction site, tooth type, stability of teeth, extraction procedure, prothrombin time-international normalised ratio value, platelet count and the use of concomitant antiplatelet agents. Post-extraction bleeding was noted in 21 (8.1%) of the 258 cases. Haemostasis was achieved with localised haemostatic procedures in all the cases of post-extraction bleeding. The HAS-BLED score was found to be insufficient in predicting post-extraction bleeding. The risk of post-extraction bleeding was approximately three times greater in patients taking concomitant oral antiplatelet agents. It was concluded that the HAS-BLED score alone could not predict post-extraction bleeding. The concomitant use of oral antiplatelet agents was a risk factor for post-extraction bleeding. No episodes of post-extraction bleeding required more than local measures for haemostasis. Wang WY et al investigated the feasibility of continuing warfarin when international normalized ratio (INR) was less than 2.5 before tooth extraction in the elderly. One hundred elderly outpatients with prolong use of warfarin and maintaining INR < 2.5 before tooth extraction served as observation group, 200 elderly outpatients without taking anticoagulant and antiplatelet medicine served as control group. All the patients underwent a single non-impacted tooth extraction. Postoperative bleeding at different time was observed. There was significant difference in postoperative bleeding at 5, 10, 30 min, 24 h after extraction and there was no significant difference at 48 h between control group and observation group and no bleeding was found in either group at 48 h. the authors concluded that it was feasible to continue warfarin for the elderly maintaining INR < 2.5 undergoing a single non-impacted tooth extraction by monitoring postoperative bleeding and hemostatic treatment measures.<sup>11, 12</sup>

Salam S et al assessed the incidence of bleeding after dental extractions in subjects taking warfarin continuously before and after extractions whose International Normalised Ratio (INR) was below 4.0 at the time of extraction. This was a case series study of 150 patients without controls who required extraction of at least one tooth under local anaesthetic. All sockets were subsequently packed with absorbable oxycellulose and sutured. A total of 58 women and 92 men were included (mean age 66 years); their ages were similar. The mean INR (S.D.) was 2.5 (0.56), although

most patients had an INR less than 2.5 (n=101). Ten patients (7%) bled after extraction, enough to require a return to hospital. Five patients of 101 with an INR  $\leq$  2.5, and 5 with an INR  $>$  2.5 out of 49 bled after extraction (p=0.29). Bleeding after extraction was not associated with operative antibiotics. All patients who bled were managed conservatively and none was admitted to hospital. Patients taking warfarin whose INR is up to 4.0 and who have dental extractions in hospital do not have clinically significant bleeds post-operatively. Morimoto Y et al examined hemostatic management for tooth extraction in patients maintained on oral antithrombotic therapy. Subjects comprised 270 patients, with 134 receiving warfarin alone, 49 receiving warfarin with additional antiplatelet drugs, and the remaining 87 receiving antiplatelet drugs alone. In patients administered warfarin alone, international normalized ratio (INR) was 1.5 to 1.99 in 67 patients, 2.0 to 2.49 in 42, 2.5 to 2.99 in 21, and 3.0 to 3.7 in 4. A total of 513 teeth were extracted on 306 occasions. All teeth were extracted without reducing the usual antithrombotic therapy, and oxidized cellulose was applied and suturing was performed for local hemostasis. Postoperative hemorrhage occurred in 11 of 306 occasions of tooth extractions (3.6%). These involved 7 patients on warfarin monotherapy and 2 on combination therapy with warfarin and antiplatelet drugs, with INR between 1.50 and 2.49. Incidence of postoperative hemorrhage was unrelated to INR, and no significant differences were identified between warfarin monotherapy and combination therapy. The remaining 2 patients who experienced hemorrhage were administered antiplatelet drugs alone. It was concluded that a sufficient hemostasis can be obtained in most cases of tooth extraction under anticoagulant therapy with warfarin (INR  $<$  3.0) and antiplatelet drugs. Moreover, appropriate local hemostatic methods can be successful when postoperative hemorrhage occurs.<sup>13, 14</sup>

#### CONCLUSION:

Within the limitations of present study we conclude that prevalence of post-extraction bleeding is more in patients on anti-coagulant therapy.

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