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Assessment of extraction in patients on oral anticoagulant therapy with and without stopping the drug

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ABSTRACT

Background: It is controversial whether or not oral anticoagulants should be stopped before extraction in patients using them. The present study was conducted to assess cases undergoing extraction in patients on oral anticoagulant therapy with and without stopping the drug.

Materials & Methods: 50 patients on oral anticoagulant therapy scheduled for dental extraction of both genderswere divided into 2 groups of 25 each. Group I patients were instructed to continue warfarin without any alteration of the dose prior to dental extractions, and group II patients were instructed to stop warfarin 3 days before extraction.

Results: Out of 50 patients, 30 were males and 20 were females. Tooth extracted were incisors in 4 in group I and 5 in group II, canine 2 in group I and 6 in group II, premolar 5 in group I and 4 in group II and molars 5 in group I and 4 in group II. The difference was non- significant (P> 0.05). The mean INR was 2.6 in group I and 1.4 in group II. The difference was significant (P< 0.05).

Conclusion: As long as the INR remains within the therapeutic range, post-extraction bleeding is not a significant issue for patients who continue oral anticoagulant medication without changing the dosage.

Keywords: *oral anticoagulants, Tooth, Drug*

1. INTRODUCTION

It is controversial whether or not oral anticoagulants should be stopped before extraction in patients using them.[1] The danger of severe post-extraction hemorrhage must be weighed against the possibility of potentially fatal thromboembolic crises if the medication is not stopped before the procedure.[2] The most widely used oral anticoagulant, warfarin, is a vitamin K antagonist that stops the carboxylation of glutamic acid residues on coagulation factors II, VII, IX, and X by vitamin K. Some writers suggest that heparin be administered prior to tooth extraction and that oral anticoagulant medication be stopped for a few days.[3]The coagulation activity level at which oral surgical procedures can be performed in anticoagulated patients without triggering bleeding complications and without enhancing the risk of developing thrombo-embolic events remains controversial.[4]

According to some authors, the oral anticoagulant medication's dosage should be lowered until the international normalized ratio (INR) is 1.5. Today, nevertheless, tooth extractions are done on patients receiving anticoagulant medication without lowering or stopping the dosage.[5,6]The present study was conducted to assess cases undergoing extraction in patients on oral anticoagulant therapy with and without stopping the drug.

2. MATERIALS & METHODS

The study was carried out on 50 patients on oral anticoagulant therapy scheduled for dental extraction of both genders. All gave their written consent to participate in the study.

Data such as name, age, etc. was recorded. Patients were divided into 2 groups of 25 each. Group I patients were instructed to continue warfarin without any alteration of the dose prior to dental extractions, and group II patients were instructed to stop warfarin 3 days before extraction. Every extraction was performed as an outpatient procedure under local anesthetic, and postoperative bleeding from extraction sockets was controlled with local sutures and gelfoam.Results thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

3. RESULTS

Table I Distribution of patients

Total- 50		
Gender	**Male**	**Female**
Number	30	20

Table I shows that out of 50 patients, 30 were males and 20 were females.

Table II Assessment oftooth extractions

Tooth	**Group I**	**Group II**	**P value**
Incisors	4	5	0.67
Canine	2	6	
Premolar	5	4	
Molar	14	10	

Table II, graph I shows that tooth extracted were incisors in 4 in group I and 5 in group II, canine 2 in group I and 6 in group II, premolar 5 in group I and 4 in group II and molars 5 in group I and 4 in group II. The difference was non- significant (P> 0.05).

Graph I Assessment of tooth extractions

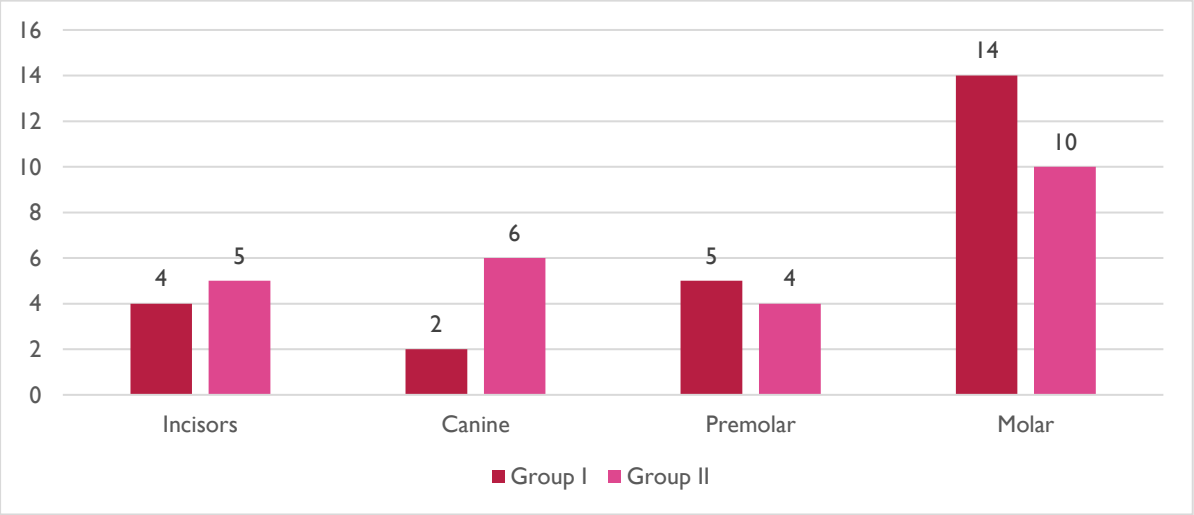

Table II Comparison of INRbetween both groups

Groups	INR	P value
Group I	2.6	0.01
Group II	1.4	

Table III shows that mean INR was 2.6 in group I and 1.4 in group II. The difference was significant (P< 0.05).

4. DISCUSSION

When a patient has dental extractions and their anticoagulation is unchanged, local hemostasis-promoting materials and methods are frequently used. However, there have been reports of adverse effects, including induction of foreign-body reactions, increased local inflammatory response, and delayed wound closure and healing.[7] According to a second group of experts, total coagulation activity correction is required and achievable with a low risk of thrombo-embolic complications. The benefit of fully correcting the coagulation activity is that there will be very little blood loss and hemostasis will be completely normal at the time of the intervention.[8]The present study was conducted to assess cases undergoing extraction in patients on oral anticoagulant therapy with and without stopping the drug.

We found that out of 50 patients, 30 were males and 20 were females. Ahmed et al[9]compared postoperative hemorrhagic complications after dental extractions in two groups of patients receiving oral anticoagulants with one group receiving oral anticoagulant without interruption and another group stopping the drug 3 days prior to extraction.A control group consisted of 30 patients who had stopped the oral anticoagulant 3 days before undergoing dental extractions, resulting in a reduction in the average preoperative international normalized ratio (INR) from 2.8 to 1.6. The study group of 30 patients received the anticoagulant drug without any alteration before extractions and had an average preoperative INR of 2.7. None of the patients had any immediate postoperative bleeding, and only one patient from the control group and two patients from the study group had mild delayed hemorrhage which was easily managed with local measures.

We found that tooth extracted were incisors in 4 in group I and 5 in group II, canine 2 in group I and 6 in group II, premolar 5 in group I and 4 in group II and molars 5 in group I and 4 in group II. Declerck D et al[10]evaluated blood loss following dental extractions at different levels of anticoagulation and to determine its effect on wound closure rates. Blood loss was measured following the removal of four front teeth in warfarinized rabbits. Immediate blood loss was evaluated by determining the tooth socket bleeding times and by using a technique based on hemoglobin determinations. Long-term blood loss was assessed by comparison of labeled red-blood-cell disappearance curves. The results showed that blood loss following dental extractions was significantly greater in animals anticoagulated at a therapeutic level than in non-anticoagulated control animals. Determination of blood loss at different levels of anticoagulation clearly demonstrated that complete correction of the coagulation activity was unnecessary. Partial correction (INR values of 1.6-1.8) allowed extractions to be performed without extensive blood loss. With this technique of partial correction, the period of interruption of the anticoagulation could be kept very short, and the risk of postoperative bleeding complications was minimal.

We found that mean INR was 2.6 in group I and 1.4 in group II. Martinowitz U et al[11] in their study, forty patients treated by coumarin underwent 63 tooth extractions, without a change in the therapeutic protocol of anticoagulation. The biologic adhesive Beriplast was used successfully to achieve local hemostasis at the site of the surgical wound. Apart from one patient who had mild oozing, there were no incidences of postsurgical hemorrhage. Madura et al[12] in their study twenty-one patients on chronic Coumadin therapy required surgery for diseases unrelated to their original need for anticoagulation. Seven patients had hemorrhagic complications, and 14 did not. In these two groups, sex, current operation, reason for anticoagulation, other drugs, admitting CBC, and platelet count were similar. Preoperative hospital days averaged 5.2 days in both groups. Statistically significant differences were noted in age, preoperative Coumadin dose, admitting prothrombin times, and postoperative stays (P = 0.05). Although the perioperative prothrombin times, partial thromboplastin times, and perioperative heparin doses were similar, more patients in the bleeding group were operated with a prothrombin time > 13.0 seconds. The current evolved protocol is to discontinue Coumadin 5 days before surgery, and begin intravenous heparin @ 1000 u/hr with adjustment to keep partial thromboplastin times at therapeutic levels. Heparin is stopped early on the morning of surgery and restarted at 200-400 units/hr at 4 to 6 hours after surgery. Coumadin is restarted as soon as the patient can tolerate it. It is considered safe to operate only when the prothrombin time is less than 13 seconds.

The shortcoming of the study is small sample size.

5. CONCLUSION

Authors found that as long as the INR remains within the therapeutic range, post-extraction bleeding is not a significant issue for patients who continue oral anticoagulant medication without changing the dosage.

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