

Original Article

Prevalence of post extraction bleeding in patients undergoing anticoagulant therapy- A Clinical Study

Gurleen Kaur¹, Raaghvi Sharma²

¹B.D.S. Chandigarh, ²BDS Intern, Govt. Dental College, Amritsar, Punjab, India

ABSTRACT:

Background: Warfarin is the most common anticoagulant used worldwide. The present study was conducted to determine post extraction bleeding in patients on anticoagulant therapy. **Materials & Methods:** The present study was conducted on 260 patients of both genders (males- 120, females- 140) requiring dental extraction. In all patients medical, clinical, and radiographic assessment was performed before extractions. An INR was also done the same day of the procedure or within 24 hours. Patients were prescribed with antibiotics. All patients underwent extractions as following guidelines. **Results:** Mean INR score in patients with INR < 2.2 was 1.76 and in patients with INR > 2.2 was 2.84. Mean age was 66.4 years and 68.2 years in patients with INR < 2.2 and > 2.2 respectively. Males were 65 and females were 80 with INR < 2.2 and in patients with INR > 2.2 was 55 males and 60 females. Males were 5 and females were 7 with post extraction bleeding episodes. Common medical conditions were myocardial infarction in males (60) and females (75), atrial fibrillation in males (20) and females (30), stroke in males (10) and females (20), venous thromboembolism in males (15) and females (25) and vulvulopathy in males (15) and females (10). **Conclusion:** Careful assessment of medical condition is required in patients undergoing dental extraction. OACs dose needs to be modified accordingly.

Key words: Atrial fibrillation, Anti coagulant, Warfarin.

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Corresponding Author: Dr Gurleen Kaur, Chandigarh, India

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INTRODUCTION

Warfarin is the most common anticoagulant used worldwide. Warfarin is used predominately for the prevention of life-threatening thromboembolic events, such as stroke and deep vein thrombosis, in at-risk patients. It is a potent anticoagulant classed as a vitamin K antagonist that works by inhibiting vitamin K epoxide reductase, which in turn inhibits the recycling of vitamin K from its inactive to active form.¹

This in turn interferes with the formation of vitamin K-dependent clotting factors II, VII, IX, and X and antithrombotic factors protein C and protein S. Clinical guidelines published after these studies advised that patients whose PT-INR values were within the recommended therapeutic ranges should continue WF when undergoing dental extraction. However, there have been few studies that specifically addressed a difference in the bleeding

incidences and its 95% CI comparing tooth extraction cases in patients receiving and not receiving WF.²

When such patients require surgery (e.g., tooth extractions), increased bleeding risk is postulated if the anticoagulant dose is not lowered. However, reducing the drug levels in turn can increase the risk of thromboembolism. Thus, a series of management guidelines are needed in such situations.³

In support of the hypothesis that impaired haemostasis is the result of either deficient coagulation (impaired fibrin deposition) or increased fibrinolysis (fibrin resolution), local measures to inhibit fibrinolysis have evolved and enabled dental extractions to now be performed in therapeutically warfarinized patients on an outpatient basis.⁴ The present study was conducted to determine post extraction bleeding in patients on anticoagulant therapy.

MATERIALS & METHODS

The present study was conducted in the department of Oral surgery. It comprised of 260 patients of both genders (males- 120, females- 140) requiring dental extraction. All had medical history of anticoagulant use. They were informed regarding the study and written consent was obtained. Ethical clearance was taken prior to the study.

General information such as name, age, gender etc. was recorded. In all patients medical, clinical, and radiographic assessment was performed before extractions. An INR was also done the same day of the procedure or within 24 hours. Patients were prescribed with antibiotics. All patients underwent extractions as following guidelines. Results thus obtained were subjected to statistical analysis using chi-square test. P value < 0.05 was considered significant.

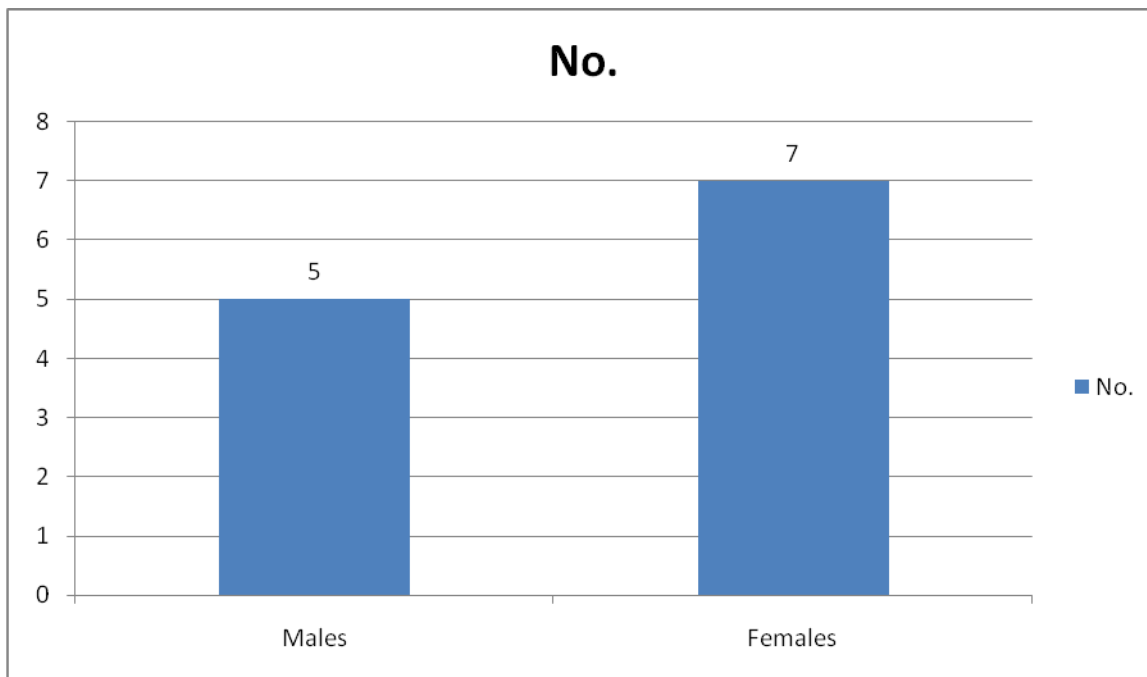
RESULTS

Table I Characteristics in patients

Parameters	Patients with INR < 2.2	Patients with INR > 2.2
Mean INR	1.76	2.84
Mean age	66.4 years	68.2 years
Male	65	55
Female	80	60

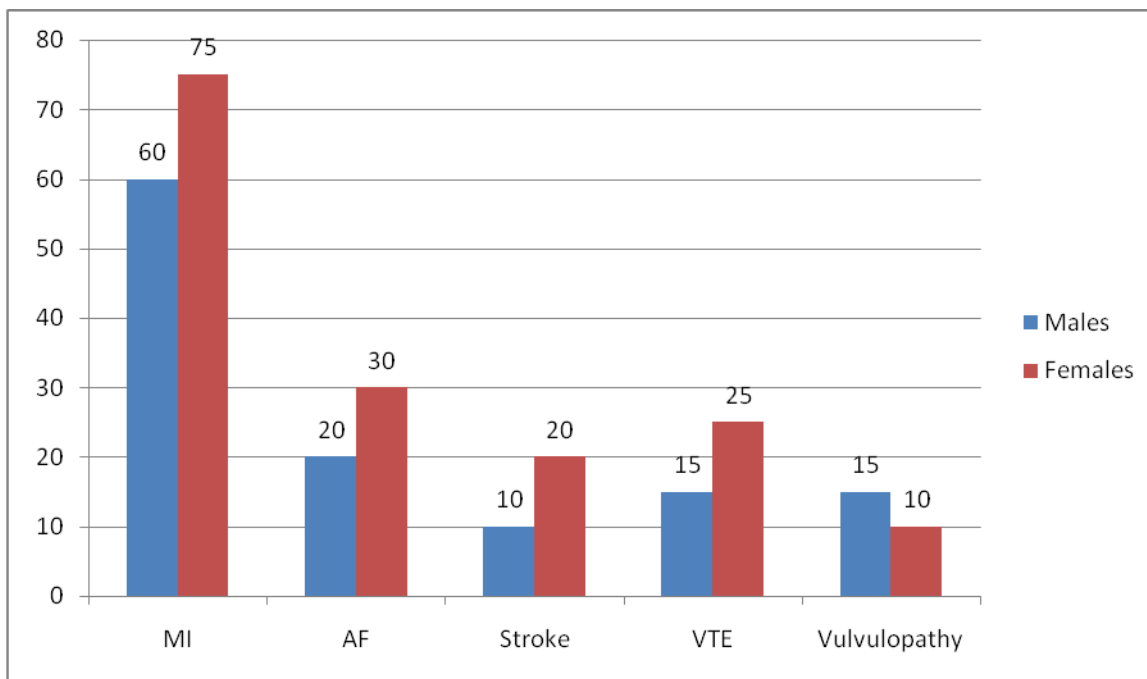
Table I shows that mean INR score in patients with INR < 2.2 was 1.76 and in patients with INR > 2.2 was 2.84. Mean age was 66.4 years and 68.2 years in patients with INR < 2.2 and > 2.2 respectively. Males were 65 and females were 80 with INR < 2.2 and in patients with INR > 2.2 was 55 males and 60 females.

Graph I Patients with post extraction bleeding



Graph I shows that males were 5 and females were 7 with post extraction bleeding episodes.

Graph II Medical conditions of patients



Graph I shows that common medical conditions were myocardial infarction in males (60) and females (75), atrial fibrillation in males (20) and females (30), stroke in males (10) and females (20), venous thromboembolism in males (15) and females (25) and vulvulopathy in males (15) and females (10).

DISCUSSION

The most commonly complication of OACs is simple bruising or haematuria, but bleeding can also be gastrointestinal, intracranial, retroperitoneal and in other sites. Spontaneous bleeding is likely to occur when the INR is excessively prolonged. An excessive INR can be returned to the therapeutic range by either withholding warfarin for one to two days, administering low doses of vitamin K, or infusing a concentrated factor replacement or fresh frozen plasma. Warfarin is subject to many drug interactions, which may increase or decrease its anticoagulant effect.⁵

OACs inhibit the enzyme vitamin K reductase, which converts vitamin K epoxide to its active form. The vitamin K-dependent blood coagulation factors (factor II, VII, IX, X and proteins C, S and Z) present a group of carboxyglutamic acid residues that allow binding of the factor (via ionic calcium bonds) to the carboxyl and hydroxyl radicals of the membrane phospholipids of platelets and other cells - resulting in physiological blood coagulation. Supplementary carboxylation of glutamic acid requires the participation of vitamin K in its active form (hydroquinone) - the latter being degraded to epoxide during the process. By means of reductases, the liver cells regenerate this epoxide into the active form of the vitamin, thereby allowing another cycle of formation of active coagulation factors.⁶

In present study, mean age was 66.4 years and 68.2 years in patients with INR < 2.2 and > 2.2 respectively. Males were

120 and females were 140. We found that males were 5 and females were 7 with post extraction bleeding episodes. This is in agreement with Morimoto et al.⁷

Anthony et al⁸ in their study found that 63% were men, 25% were older than 80 years, 40% had an INR lower than 2.2, and 9% had an INR higher than 3. Nine cases bled 0 to 10 days postoperatively, with 1 requiring admission and transfusion. Significant predictors of bleeding were INR and number of extractions. There were no events of bleeding in controls or cases with an INR lower than 2.2. The posterior mean of bleeding was 1% for an INR of 2.2 to 3, and 8.4% for an INR higher than 3.

Hiroshi et al⁹ found that bleeding events were reported for 35 (7.1%) and 49 (2.1%) teeth, of which 18 (3.6%) and 9 (0.4%) teeth were considered clinically significant, in warfarin and non-warfarin groups, respectively, the difference between which was 3.24%. The incidence rates by patients were 2.77% and 0.39%, in warfarin and non-warfarin groups, respectively. Zanon et al¹⁰ used tranexamic mouthwash in the immediate postoperative period. These studies found no difference in bleeding events between patients taking an anticoagulant treated under their protocol and controls.

Scully¹¹ reported that, in patients with oral surgeries, postoperative bleeding incidence was higher in patients under the combination therapy of WF and an antiplatelet medicine. Besides reports regarding the bleeding events

associated with oral surgeries, increased incidence of haemorrhagic complications in patients receiving antiplatelet medicine in addition to WF compared with those receiving WF only was observed in a cohort study in Japanese patients under anticoagulation therapies.

CONCLUSION

Careful assessment of medical condition is required in patients undergoing dental extraction. OACs dose needs to be modified accordingly.

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