ORIGINAL ARTICLE

Gastrointestinal Bleeding and NOACs: Myths and Reality

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ABSTRACT

Gastrointestinal bleeding (GIB) is one of the major complications among the patient who are on anticoagulation. Non-vitamin K antagonist oral anticoagulants (NOACs) are with haemorrhage-linked and included significant or minor gastrointestinal tract bleeding, intracranial haemorrhage and bleeding from oral cavity. The current study was aimed at evaluation of GIB hazard with (NOACs) specially rivaroxaban. 150 patients were taken to participate in this study. This study analysis showed that rivaroxaban was not associated with a significantly GIB, intracranial bleeding and oral bleed. Patients presented with GIB and oral bleed were 19% and 15% respectively. Only 7% patients were presented with intracranial bleed. However, the result was not statistically significant. The attached hazard of major GIB lacked divergence between NOACs and vitamin K antagonists (VKA) among patients who were diagnosed with atrial fibrillation (AF) and venous thromboembolism (VTE). The current study establishes that, regardless of any preceding information that may back any affiliation of GOIB, NOAC and NOVAC, they remain unaffiliated with enhanced hazard of major GIB when matched with a different anticoagulant therapy.

Key Words: Venous thromboembolism (VTE), vitamin K antagonist oral anticoagulants (NOACs), Gastrointestinal bleeding (GIB).

INTRODUCTION

NOACs, or direct factor Xa inhibitor rivaroxaban, is oral anticoagulant. It is endorsed to avoid and treat VTE as well as stroke prophylaxis among patients presenting nonvalvular atrial fibrillation (AF). Haemorrhage is the most frequent negative effect of NOVACs which included GIB, intracranial haemorrhage and bleeding from oral cavity. Among the major bleeding, GIB is the most common bleeding cause accounting for approximately 30–40% and up to 5% of patients noticed the major bleeding [1, 2]. However, the patients who required long term blood thinner because of thromboembolic event or as prophylaxis, NOACs are most convenient option and routine coagulation monitoring such as Prothrombin time (PT) and mobilised prothrombin time (aPTT) is least required. A recollective study of healthcare patients, Graham et. al. (2016) opined that subjects who receive rivaroxaban (20 mg once daily) are allied with demographically momentous enhanced hazard in major GIB when contrasted with subjects receiving a different anticoagulant [3,4]. Furthermore, Noseworthy et. al. (2016) opined that bleeding hazards were less among apixaban users when contrasted with dabigatran and rivaroxaban. Another relevant study, Yao et al. (2016), focussed on the contrast between NOACs and warfarin. It observed that apixaban and dabigatran are correlated with decreased bleeding risks when contrasted to warfarin and rivaroxaban. It also observed that, warfarin, however, still presented to carry like hazards. The present work aims at evaluating the hazard of GIB with rivaroxaban (NOAC) in our domestic setting.

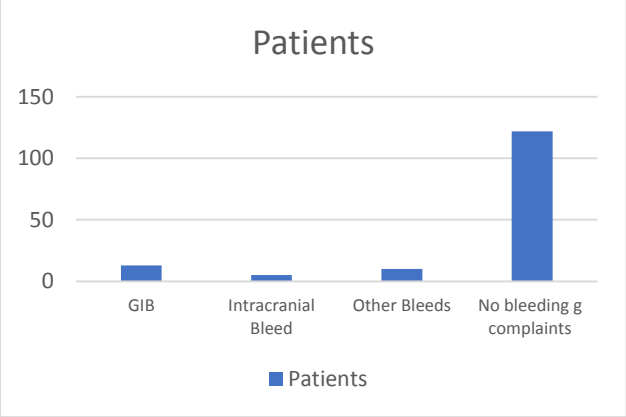
MATERIAL AND METHOD

This study was conducted in the Government Teaching Hospital Shahdra and National Hospital and Medical Centre DHA Lahore. It was Non-probability, descriptive study. Duration of study was one year from 01/10/2019 to 01/10/2020. Sample range of 150 patients was gauged with 95% level of confidence, 5% error margin, and assuming accidental knowledge percentage. Patients diagnosed with AF and VTE who were on NOACs and reported bleeding events GIB, intracranial bleed during their treatment were included in this study. The patients who were taking NOACs other than AF or VTE, who did not report bleeding outcomes among their clinical endpoints or who had some organic cause of GIB were excluded from this study. A colonoscopy was performed where indicated

RESULT

The current study involved 150 patients. Its analysis domnstrated that rivaroxaban was not associated with a significantly GIB, intracranial bleeding and oral bleed. Patients presented with GIB and oral bleed were 19% and 15% respectively. Only 7% patients were presented with intracranial bleed. However, the result was not statistically significant. Upper and lower GI endoscopy were performed where indicated and noticed that the only in one-third of GIB patients have upper GI symptoms. As shown in figure 1, only 3 patients had organic cause for GI bleed, on the other hand no changed were noticed on GI endoscope.

Table 1: Indicated the number of patients with bleeding complaints



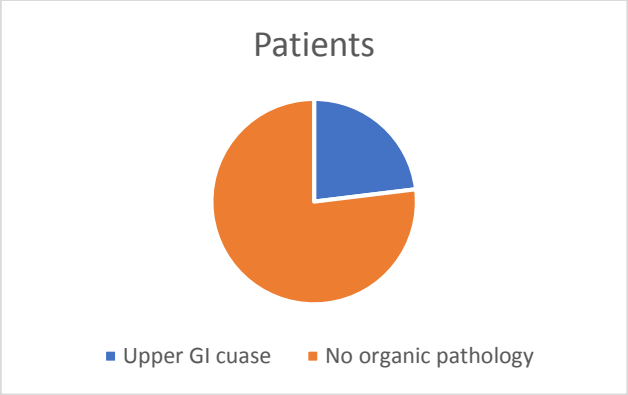


Figure 1: Indicated the number of patients with GI Endoscope findings.

DISCUSSION

NOACs which included dabigatran (thrombin inhibitor) and Rivoraxaban, apixaban (factor X inhibitor) [5]. Both group of drugs, thrombin inhibitor and factor X inhibitor are administrated orally. Most of blood thinner might carried relating anticoagulation aftermath precisely or imprecisely in the gastrointestinal tract mucosa. To get its conversion into its active metabolite with the help of esterase enzyme, Dabigatran is the prodrug. Esterase enzyme is present in gastrointestinal tract, plasma and liver as well. Moreover, the oral route bioavailability of dabigatrans is only 7% and around 93% may operate at a local level of metabolism and consumption spot [6, 7]. Because of dabigatran metabolize in gastrointestinal tract, therefore it may as well carry a forthright anticoagulant outcome for gut mucosa. Low molecular weight heparin (LMWH) carry parenteral line of administration and it carries no a forthright outcome for gastrointestinal tract. Similarly, VKAs carry an oral path of administration, its anticoagulation effect dependents over epoxide reductase hepatic inhibition. VAKs obstruct Vitamin K functions and are reliant coagulation factors, which include I, VII, IX as well as X. It can be stated that LMWH, as well as VKA, would paralally require other circumstances in order to provide an association with major GIB. AF showed higher incidence of GIB as compared to VTE patients and the reason might be because they are older, having more comorbidities such as diabetes mellitus and hypertension. Most of them have history of anti-platelet drugs, peptic ulcer disease, and or Helicobacter pylori infection [8]. Therefore, to understand the details involved in major GIB, patients with AF were in main focused group. The RE-LY trial studied patients with AF and evaluated the effect of NOACs on gastrointestinal tract bleeding event which included major and minor bleed. Post hocevaluation, dabigatran revealed an enhance chance of adverse events of upper gastrointestinal tract non-bleeding. However, so far as any severity in gastrointestinal tract detrimental aftermaths, it was not found to be different from warfarin. Contrarily, warfarin has more adverse events than dabigatran. The endoscope was performed where indicated and noticed the upper gastrointestinal tract symptoms to be prevalent in only 1/3 of patients presenting gastrointestinal tract bleeding. On carrying out endoscopy gastroduodenal and Oesophageal, any injury was only correlated with enhanced bleeding hazard and there may carry oesophageal mucosal ulceration [9]. Proton pump inhibitors' (PPI) role, so far as it related to the improvement of gastrointestinal tract care in patients prescribed with NOACs were heterogeneous. However, literature review showed that PPI was linked with decreased risk of gastrointestinal tract bleeding [10]. As expected, the usage of NSAIDs and anti-platelet drug were correlated with major bleeding episode, regardless of the anticoagulation management. Therefore, all / any drugs, that may carry any likely pharmacodynamic interconnection with anticoagulants, which may include, but not confine to, NSAIDs, should preferably be discontinued or abstained at the earliest possible stage.

CONCLUSION

This study can be concluded that patients who requires anticoagulants, there is less manifestation of increased hazard for significant GIB with the NOACs, however NSAIDs and akin antiplatelet drugs have potential pharmacodynamic interactions with anticoagulants, may increase the risk of major GIB.

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