

Evaluation of Apixaban Use for VTE Prophylaxis in Post-Bariatric Surgery Patients at a Community Teaching Hospital

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Introduction

- Venous thromboembolism (VTE) is a significant cause of morbidity and mortality within the first 30 days following bariatric surgery
- Current guidelines do not recommend the use of direct oral anticoagulants due to a lack of data and the potential for malabsorption
- At our institution, apixaban is utilized as prophylaxis in patients deemed high risk for VTE post-bariatric surgery
- The primary objective is to determine rates of VTE and the secondary objective is to determine rates of bleeding events in those who received apixaban for VTE prophylaxis within 30 days post-operatively

Methods

- Retrospective, single-center chart review
- Adult patients ≥ 18 years old who had bariatric surgery and were prescribed apixaban 2.5 mg twice daily for 2 to 4 weeks for VTE prophylaxis from May to September 2023 were included
- Patients on long-term anticoagulation prior to bariatric surgery were excluded
- The Cleveland Clinic Risk of Post-Discharge VTE after Bariatric Surgery calculator, which includes age, sex, BMI, CHF, dyspnea at rest, operation time, return to operating room and length of stay, was used to determine VTE risk
- Bleed events were defined by International Society on Thrombosis and Haemostasis guidelines.
- Outpatient apixaban pick-up and copay information were confirmed with outpatient pharmacies
- Results were analyzed using descriptive statistics

Results

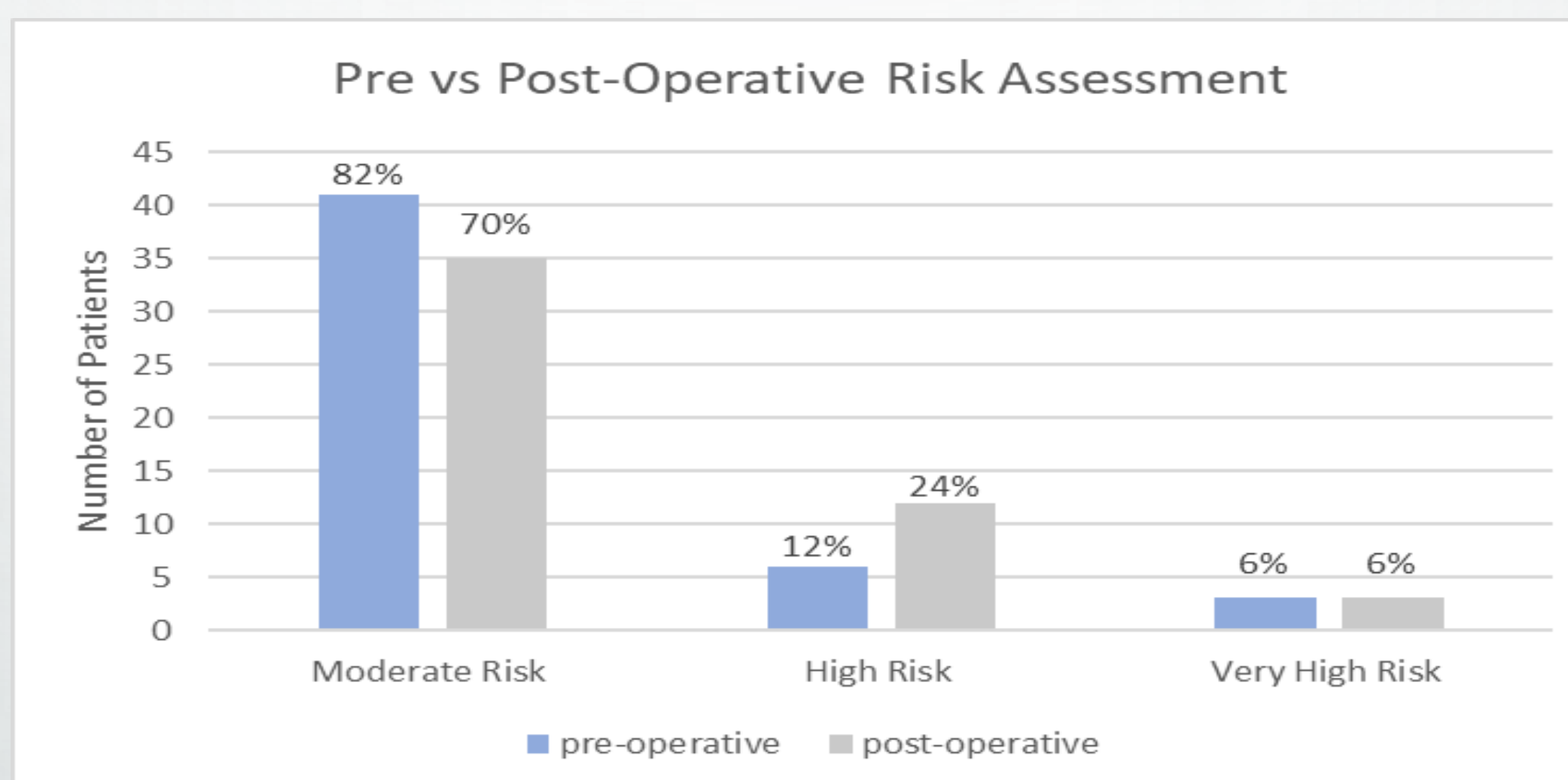
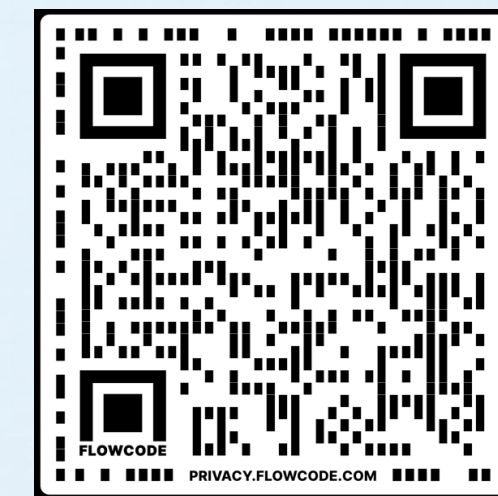
Table 1. Baseline Demographics (n=50)

Age in years, mean ± SD	41.9 ± 12.5
Female, n (%)	42 (84)
Height in cm, mean ± SD	163.6 ± 9.8
Weight in kg, mean ± SD	122.3 ± 28.7
BMI in kg/m ² , mean ± SD	45.4 ± 8.6
Comorbid Conditions, n (%)	
Congestive Heart Failure	3 (6)
Diabetes Mellitus	16 (32)
History of Stroke	1 (2)
History of VTE	1 (2)
Significant Chronic Venous Insufficiency	3 (6)
Type of Surgery, n (%)	
Sleeve Gastrectomy	38 (76)
Roux-en-Y Bypass	10 (20)
Revision	2 (4)
Operation Duration in minutes, median (IQR)	100.9 (56 - 111.3)
Length of Stay in days, mean ± SD	1.2 ± 1.3

➤ Minimal adverse outcomes were observed in a moderate VTE risk patient population

➤ Additional research is needed to determine efficacy and safety of apixaban use for VTE prophylaxis post-bariatric surgery

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Based on The Cleveland Clinic Risk of Post-Discharge VTE after Bariatric Surgery calculator:
Moderate Risk – All bariatric patients without additional risk factors. Recommendation is inpatient prophylaxis only
High Risk – Calculated risk >0.4% OR with a past medical history of VTE, a hypercoagulable condition or significant chronic venous insufficiency. Recommendation is 2 weeks extended prophylaxis
Very High Risk – Calculated risk >1%. Recommendation is 4 weeks extended prophylaxis

Results

Table 2. VTE Risk and Prophylaxis (n=50)

Pre-op Risk Score in %, median (IQR)	0.22 (0.16 - 0.31)
Met Criteria Pre-op, n (%)	9 (18)
Post-op Risk Score in %, median (IQR)	0.26 (0.16 - 0.42)
Met Criteria Post-op, n (%)	15 (30)
Apixaban Duration Recommended, n (%)	
2 weeks	43 (86)
4 weeks	7 (14)
Apixaban copay in dollars, median (IQR)	1.00 (0 - 21.30)
Inpatient Parenteral Agent Use, n (%)	
Heparin 5,000 units every 8 hours	32 (64)
Heparin 7,500 units every 8 hours	9 (18)
Heparin 5,000 units once	8 (16)
Heparin 5,000 units every 12 hours	1 (2)

Table 3. Primary and Secondary Objectives, n (%)

VTE Events	0 (0)*
Bleeding Events	1 (2)^

*One patient had a splenic infarct due to bleeding from the gastric vessels during surgery so apixaban 2.5 mg twice daily was continued for 4-12 weeks

^ Clinically relevant non-major bleed event: during a regular post-operative visit, patient noted episodes of black stool and was instructed to stop taking apixaban. No other workup completed

Discussion

- The use of apixaban for VTE prophylaxis in bariatric patients demonstrated minimal adverse outcomes
- Outcomes may be influenced by our population sample, including:
 - Small sample size
 - Three quarters of patients had a sleeve gastrectomy which may be less likely to affect apixaban absorption compared to the Roux-en-Y procedure
 - Less than 20% of patients met criteria for extended prophylaxis
- Use of the risk score calculator is completed pre-operatively, though the calculator has components based on post-operation outcomes
- Outpatient medication pickup was confirmed for all patients, but adherence could not be assessed
- Results of this study will be shared with our bariatric department to optimize prophylaxis after surgery

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 ASHP Midyear Clinical Meeting 2023