

Apixaban prescribing patterns in post-operative vascular patients at a Victorian metropolitan hospital

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BACKGROUND

Direct oral anticoagulants (DOAC) prescribing has increased since their introduction to the Pharmaceutical Benefit Scheme by the Therapeutic Goods Administration (TGA) in 2013.¹ DOACs are rapidly becoming the preferred anticoagulant due to better patient adherence, less monitoring requirements, unnecessary bridging therapy and reduced interactions with concomitant drugs.^{2,3}

The mainstay anticoagulant used postoperatively is unfractionated heparin with concurrent use of dose-adjusted warfarin. However, this combination can contribute to postoperative discharge delays while waiting for the patient's international normalized ratio (INR) to become therapeutic.⁴

Emerging evidence indicate that apixaban may have a role for thrombus prevention in patients who undergo vascular surgeries such as lower extremity arterial procedures.^{4,5} However, presently, apixaban is not approved for vascular indications by the TGA.

AIM

To evaluate prescribing patterns and outcomes for patients receiving apixaban compared to warfarin after vascular surgery.

METHOD

A retrospective, single-centered audit was conducted for patients admitted to the vascular inpatient unit at Box Hill Hospital from January 2020 to May 2022.

Extracted Eastern Health discharge prescription data from 'Electronic Medical Records' (EMR) for newly prescribed apixaban and warfarin from the vascular team. Patients who did not undergo vascular surgery, and those on apixaban or warfarin prior to admission were excluded

Patient characteristics such as age, weight, renal function and length of stage (LOS) were reviewed using data on EMR. Patients were followed-up 3-months post discharged date using outpatient notes to determine complications and outcomes from operation. Patients lost to follow up were excluded from the data set.

Determined proportion of newly prescribed apixaban versus warfarin and investigated associated indications. Analyzed patient characteristics that guided newly prescribed apixaban and warfarin and associated outcomes and complications

Figure 1. Methodology

RESULTS

In total, 146 patients were identified with 45 meeting the inclusion criteria as newly prescribed apixaban or warfarin. Five patients were lost to follow-up due to the absence of medical documentation or the lack of access to potential re-hospitalized patient's notes at other hospitals. Majority of post-operative vascular patients (n=40, 88.9%) were commenced on apixaban, of which 70.0% (n=28) were for off-label indications.

Table 1. Comparison of patient characteristics between apixaban and warfarin prescribing

	Apixaban (n=40)	Warfarin (n=5)
Age (years)	68.0	72.5
Female (n)	18	3
Weight (kg)	83.9 (n=34)	85.2 (n=4)
eGFR (mL/min/1.73m ²)	71.9 (n=36)	62.3 (n=4)
Length of stay (LOS) (days)	6.8	7.5
Number of days from surgery to discharge (days)	6.4	7.1
Number of days from first dose to discharge (days)	1.2 (n=39)	4.0

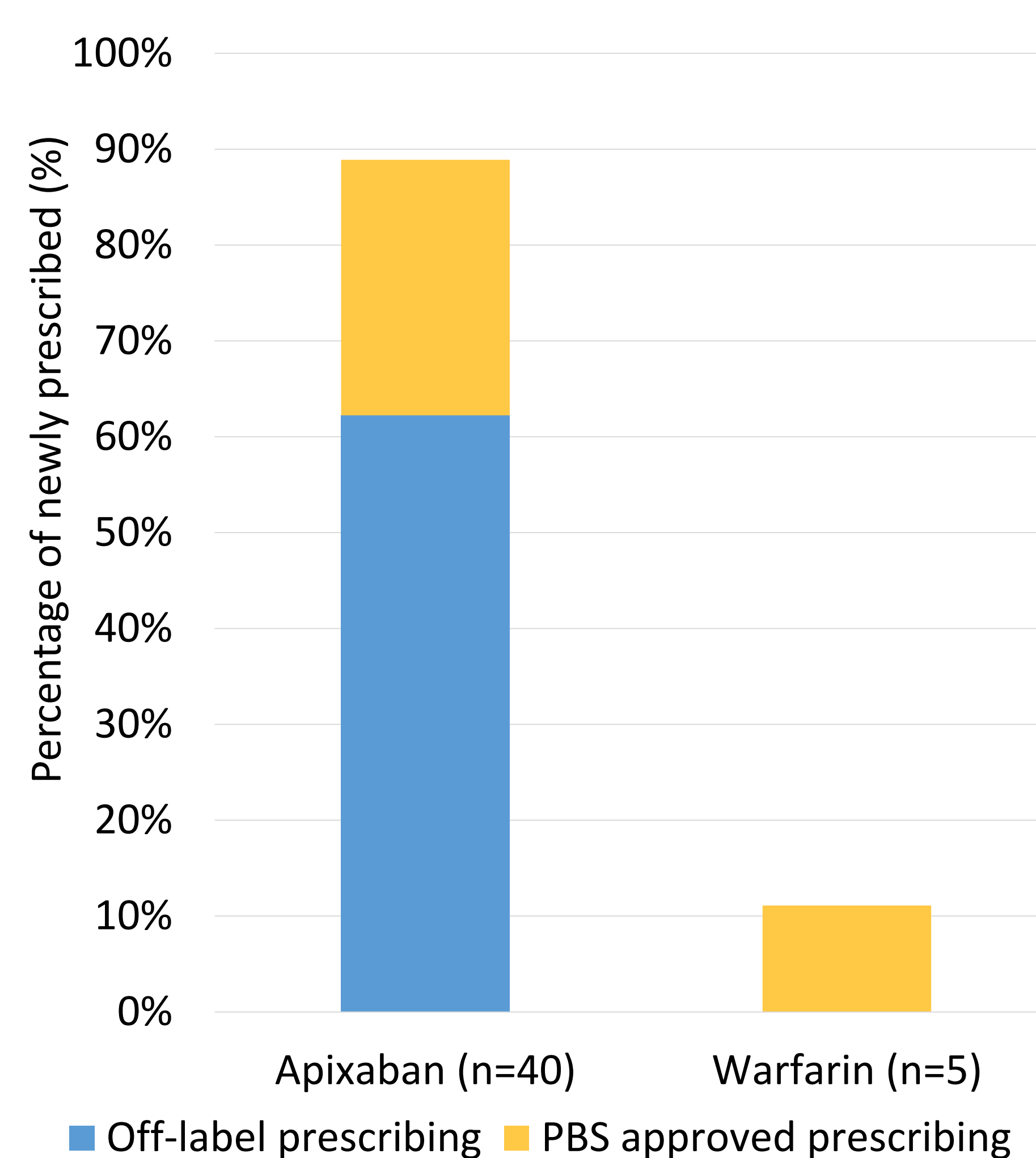


Figure 2. Proportion of newly prescribed apixaban and warfarin from the vascular team at Box Hill Hospital.

Two patients prescribed apixaban were readmitted into hospital within three months of their admission and were changed to warfarin. One patient represented due to left leg ischemia, and the other had multiple episodes of graft thrombosis requiring catheter-directed lysis and angioplasties. No adverse findings were identified for the remaining patients.

RESULTS CONT.

Table 2. Comparison of complications and outcomes between apixaban and warfarin prescribing

	Apixaban (n=36)	Warfarin (n=4)
Readmitted within 7 days	5.6%	25%
Readmitted within 14 days	13.9%	25%
Readmitted within 30 days	25%	25%
Percentage of patient on apixaban/warfarin 1 month post discharge	86.1%	100%
Percentage of patient on apixaban/warfarin 3 months post discharge	63.9%	100%

DISCUSSION

Majority of vascular patients were prescribed apixaban post-operatively, especially in patients who were younger, weighed less and had better renal function. In comparison, patients with poorer renal function were prescribed warfarin, which has been shown to be more preferable to DOACs in renal impairment. The drop in apixaban prescribing 3-months post discharge could be due to potential complications after surgery, or having completed the intended duration of therapy.

This study was conducted at a single site, limiting the capacity to achieve a larger sample size. Additionally, the study did not take other antithrombotic agents into consideration (e.g. aspirin, P2Y12 inhibitors), which may contribute to a patient's bleeding and clotting risk. Finally, drug interactions with warfarin could potentially precluded its use and was not accounted for in this study.

CONCLUSION

The majority of vascular patients who underwent surgery were prescribed apixaban, which is currently off-label for these indications. Prescribing patterns indicate a preference for apixaban in younger and healthier patients potentially resulting in reduced LOS. However, further research is required to assess the safety of apixaban prescribing in vascular surgery.

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