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An Evaluation of Oral Anticoagulation Initiation after an Ischemic Stroke in Patients with Atrial fibrillation/Atrial Flutter at Hospital Discharge

Jessica Zhao, PharmD; Cody Barfuss, PharmD Candidate; Meri Slavica-Sheley, RPh, PhD, BCPS; Vanessa Jenkins, PharmD; Natalie Swearingen, MSN, RN, CNRN

Background

- Stroke is the leading cause of permanent disability and decrease in quality of life.¹ More than 795,000 people per year in the US have stroke, and nearly 87% of those strokes are ischemic.² In the US, arrhythmias may be responsible for 10% to 12% of all ischemic strokes.³
- Previous literature had defined that about 50% of patients admitted for an ischemic stroke and newly diagnosed with atrial fibrillation (AF) were not prescribed oral anticoagulation (OAC) prior to discharge.⁴ Given these charges, the ASHP Pharmacy Accountability Measures Work Group is helping to increase pharmacy accountability through improving quality measures in antithrombotic safety.⁵ This study was initiated to provide more insight on our local OAC prescribing rates prior to or at discharge and compare it to the data available from literature.
- Pharmacists may be able to make direct impacts on OAC prescribing for patients through OAC counseling, transition of care programs, and close pharmacy follow-up after discharge.
- A knowledge gap exists for appropriate timing to prescribe OAC for patients with AF after ischemic stroke due to the potential risk of hemorrhagic conversion given the lack of consensus guidelines to direct therapy. Current recommendations vary between organizations and some observational data have revealed that early treatment might be effective and safe.⁶ Additionally, this study will identify an area in which pharmacy can play a larger accountability role to improve outcomes during transitions of care.

Purpose

- To evaluate the use of OAC after an acute ischemic stroke in patients with AF or atrial flutter and the percentage of patients with ischemic stroke and documented atrial flutter/AF who have been prescribed on OAC

Outcomes

- Primary Endpoints**
- To evaluate what percentage of patients with ischemic stroke with documented AF or atrial flutter are prescribed OAC therapy prior to or at hospital discharge
- Secondary Endpoints**
- To evaluate the time frame at which OAC is initiated after an acute ischemic stroke in the setting of AF or atrial flutter

Methods

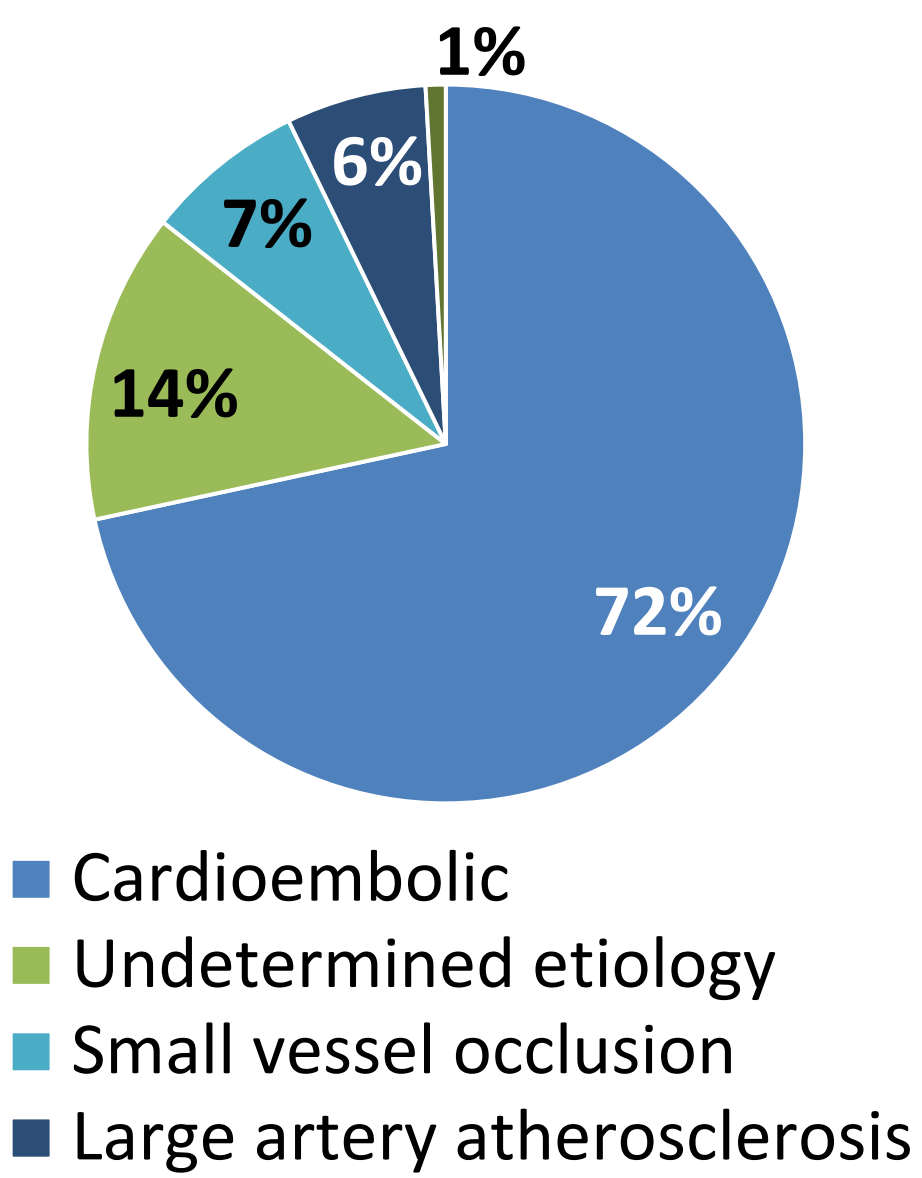
- Study Design**
- Retrospective review at a large, tertiary medical center
 - Duration:** between January 1, 2019 to August 31, 2021
- Study Population**
- Inclusion Criteria
 - Diagnosis of an acute ischemic stroke secondary to AF or atrial flutter
 - 18 years of age or older
 - Exclusion Criteria
 - New onset of stroke while hospitalized
 - Pregnancy
 - Initial onset of hemorrhagic stroke

Study Population

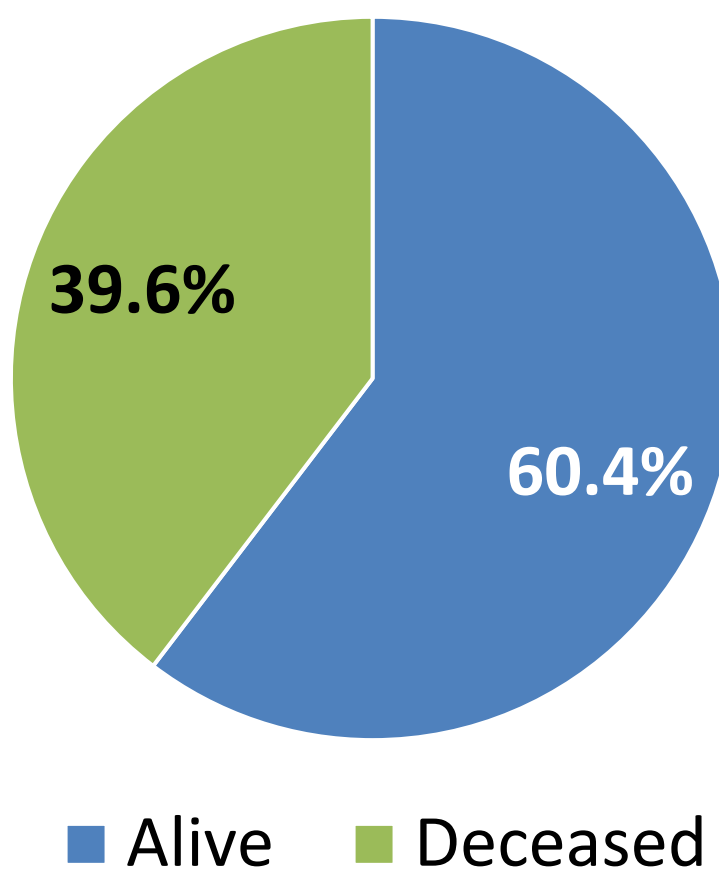
Demographic	Number of Patients (%), n = 159
Female	82 (51.6%)
Age	77.2 ± 10.6
Race	
White or Caucasian	125 (78.6%)
Patient Refused	14 (8.8%)
Asian	11 (6.9%)
American Indian or Alaska Native	4 (2.5%)
Black or African American	4 (2.5%)
Native Hawaiian/Pacific Islander	1 (0.6%)
Creatinine Clearance (n = 159)	62.4 ± 29.9
> 50 mL/min	99 (63.5%)
30 – 50 mL/min	41 (26.3%)
< 30 mL/min	16 (10.3%)
CHA ₂ DS ₂ -VASc Score	5.5
Oral Anticoagulation Prior To Admission	
None	93 (58.5%)
Apixaban 5 mg	26 (16.4%)
Warfarin	20 (12.6%)
Dabigatran	8 (5.0%)
Apixaban 2.5 mg	5 (3.1%)
Rivaroxaban 20 mg	5 (3.1%)
Rivaroxaban 15mg	2 (1.3%)

Results

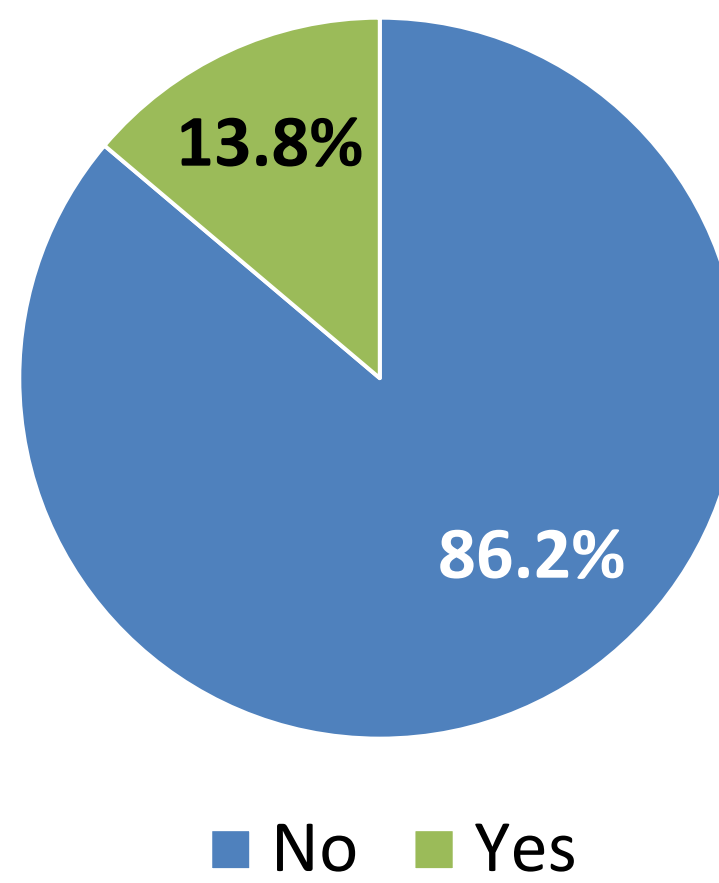
Distribution of Etiology (n = 222)



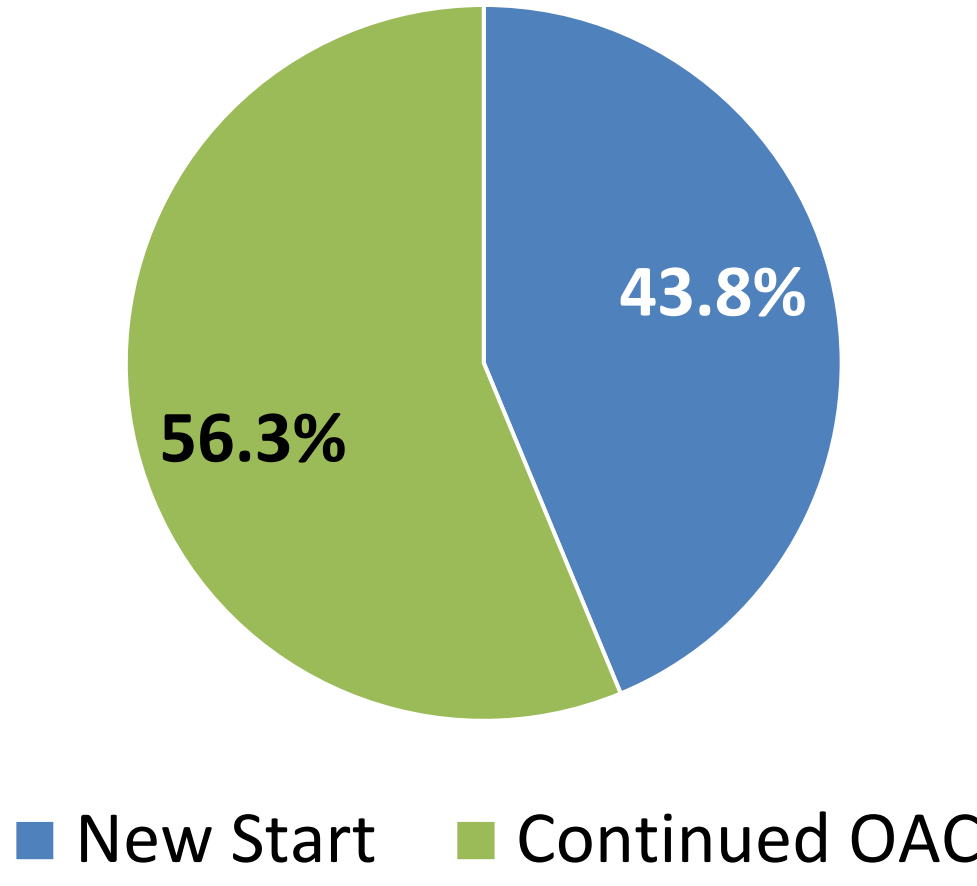
Distribution of Patients that Successfully Discharged (n = 159)



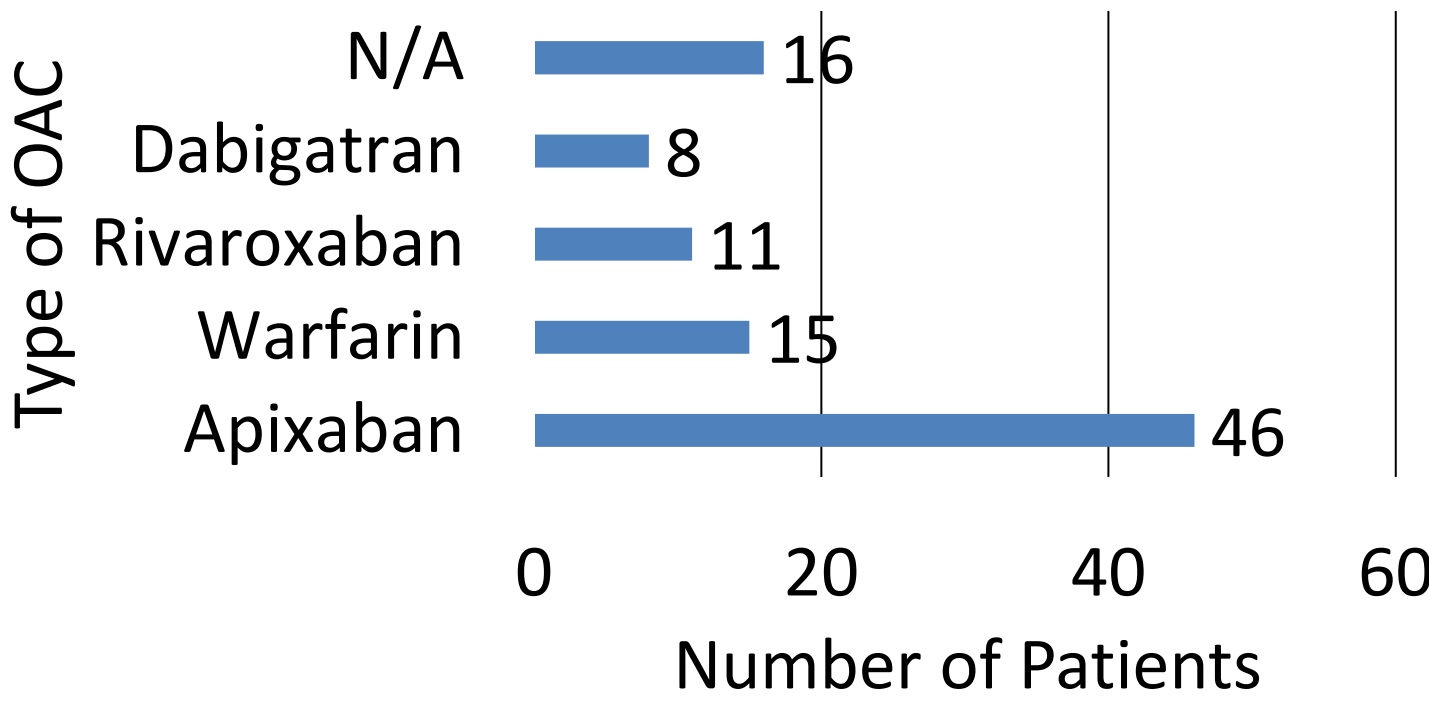
Distribution of Patients that Received tPA (n = 159)



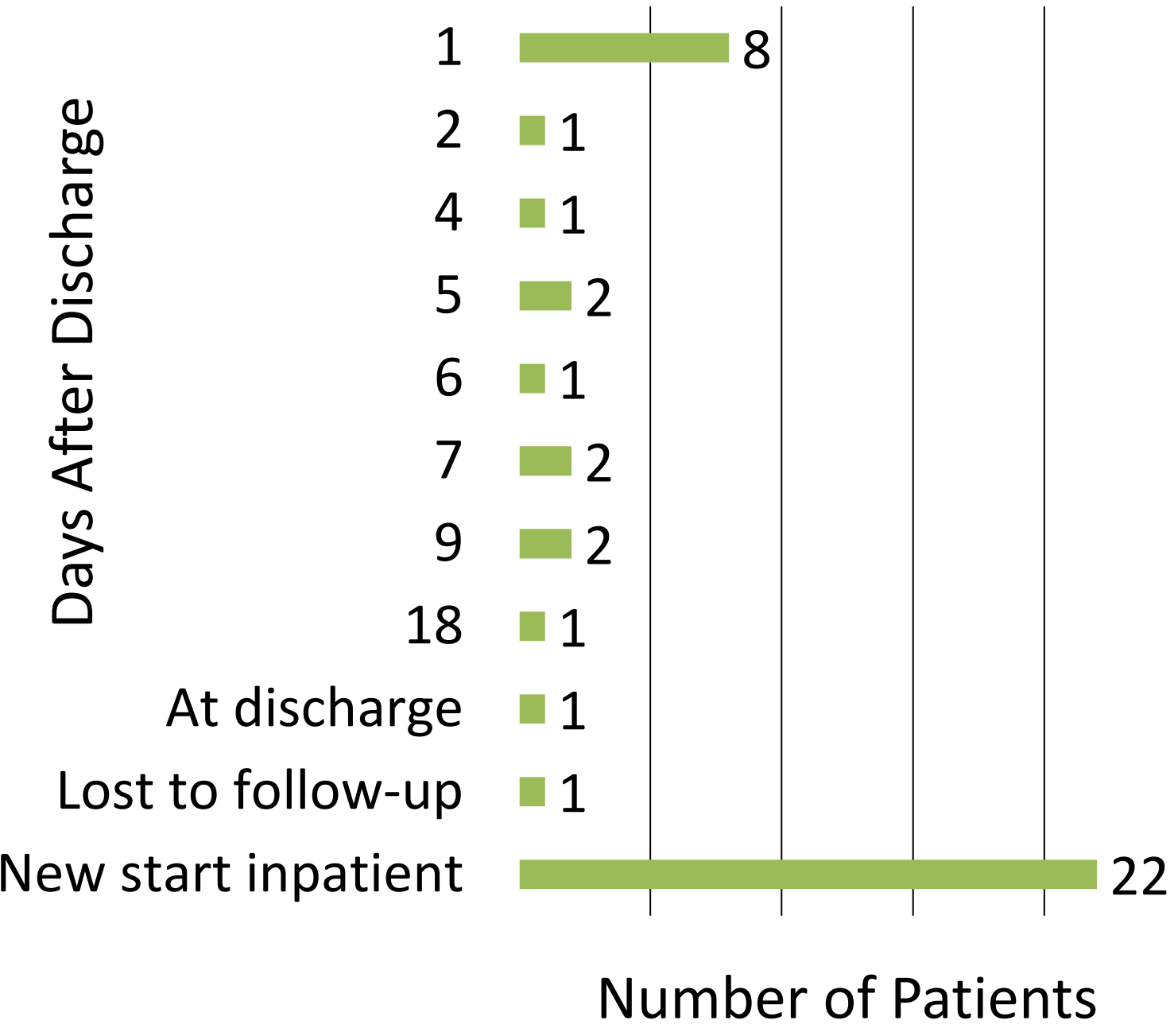
Distribution of Patients New to OAC vs Continuing OAC at Discharge (n = 96)



Distribution of OAC at/after Discharge (n = 96)



Days after Discharge for Number of Patients Who are New to OAC (n = 42)



Discussion

- AHA/ACC continues to strongly recommend OAC for patients with atrial flutter or nonvalvular AF to reduce risk of recurrent stroke. With exceptions, the guidelines do not recommend the combination of antiplatelets and OAC for secondary prophylaxis of stroke.⁶
- Out of the 222 patients with a primary diagnosis of an ischemic stroke, 159 (72%) patients had an ischemic stroke secondary to AF or atrial flutter. There were 63 patients that did not fit the inclusion criteria, leaving a total of 159 patients in this retrospective study. Out of the 159 patients, 96 (60.4%) of the patients discharged successfully after their admission for an ischemic stroke.
- Of the included patients, 82 (51.6 %) were females and the average age was 77.2 years. The most common race was White or Caucasian (78.6%). The average creatinine clearance was estimated to be 62 mL/min. A total of 93 (58.5%) patients were not previously on OAC,, and the most common OAC prior to admission was apixaban (16.4%) followed by warfarin (12.6%). The most common reason for not being on OAC was due to high bleeding risk, followed by non-compliance of OAC.
- Of the 159 patients with cardioembolic ischemic strokes, 11 (6.9%) patients received alteplase (tPA), and 11 (6.9%) received both tPA and thrombectomy for large vessel occlusion strokes. No symptomatic bleeding complications occurred in either of the treatment populations.
- Of the 96 patients that were discharged successfully, 42 (43.8%) were new starts on OAC. The most common newly prescribed OAC was apixaban (47.9%) followed by warfarin (15.6%). Only 1 (2.4%) patient was lost to follow-up and could not be accounted for after the stroke neurologist recommended to start an OAC.

- Previous literature revealed that a 12-day hold in OAC post ischemic strokes was not associated with increased ischemic recurrence secondary to AF or atrial flutter.⁷ This clinical practice is reflected in the current prescribing pattern at a large, tertiary medical center.
- Some limitations to this study is that retrospective data was collected from a single-site, thus limiting external validity. Given the data was collected from a tertiary medical center that is certified as a Primary Plus Stroke Program, it receives a disproportionate amount of stroke cases.

Conclusion

- The study results reflect previous literature for patients who were not prescribed OAC at/upon discharge. Antithrombotic safety is an area identified by the ASHP Pharmacy Work Group in which pharmacist may significantly impact through discharge counseling, transitions of care, and outpatient primary care clinic follow-ups.
- Prescribing patterns at this large, tertiary medical center reflected most updated guideline-directed therapy along with close outpatient follow-up in the stroke clinic.
- In post ischemic stroke patients secondary to a cardioembolic etiology, the prescribing pattern was split between initiating OAC within 3 days or at the 7, 10, or 14 days after an ischemic stroke.

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