

## Problem Definition

**Background:** Atrial Fibrillation remains one of the most common arrhythmias encountered in cardiac practice. It differs from other cardiac arrhythmias in the sense that it can predispose patients to CVA and usually requires anticoagulation to mitigate this risk. Newly diagnosed atrial fibrillation encountered in the post-operative setting following noncardiac surgery poses a unique challenge. Though traditionally thought to be secondary to an increased adrenergic state driven by the stress of surgery, the paradigm is beginning to shift. Mounting evidence suggests that the risk of thromboembolic events in patients with Afib first diagnosed in the post-operative setting is similar to the risk of patients with traditional non-valvular afib (Figure 1). Post-surgical patients also pose a unique set of challenges including risk of bleeding from recent surgical procedures, need for future procedures, etc. At Jefferson we currently do not have a standardized practice pattern for this patient population.

## Initial Measurement and Results

**Study population:** All patients who had noncardiac surgery between April 2018 and June 2019 and who had a diagnostic code related to atrial fibrillation were captured through EPIC search. We then reviewed whether anticoagulation was present on discharge. At this point, the individual charts were reviewed to elucidate a reason as to why anticoagulation was or was not prescribed. Patients with bleeding complications or high bleeding risk, CHADS<sub>2</sub>VASc <2, age >90, deceased while inpatient, or discharged on hospice were excluded from analysis.

**Analysis:** We used our dataset to evaluate what percentage of patients were appropriately anticoagulated on discharge. We then compared whether cardiology consults increased rates of appropriate anticoagulation.

**Results:** 179 patients were evaluated in the original dataset. 108 patients were seen by cardiology as an inpatient. Of patients not seen by cardiology, 26 met criteria for anticoagulation on discharge; however only 6 were discharged on an anticoagulant (23%). Of patients evaluated by cardiology, 56 met criteria for anticoagulation on discharge; 30 out of 56 were discharged on an anticoagulant (54%).

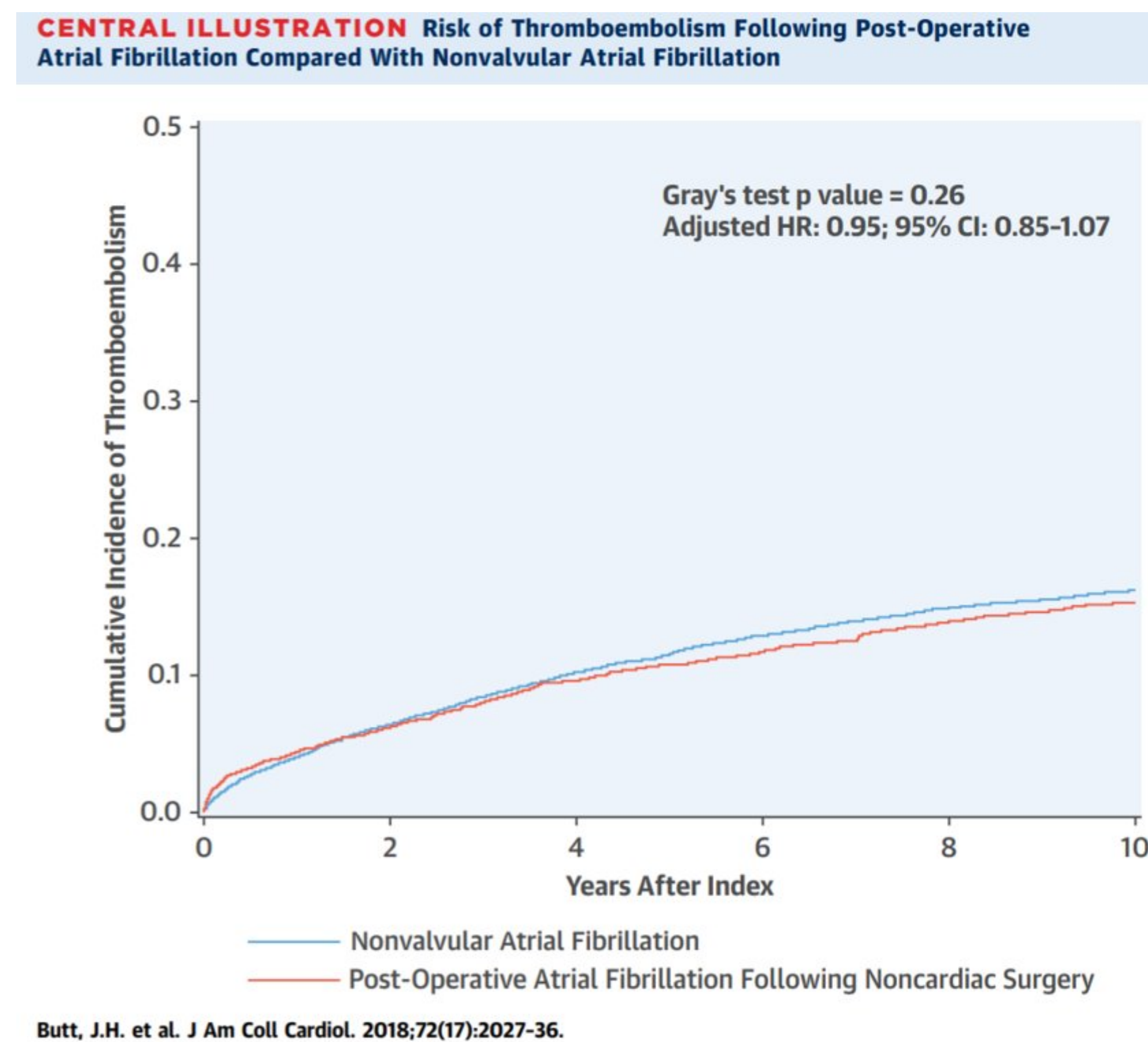


Fig 1. Cumulative incidence of thromboembolism (composite of ischemic stroke, transient cerebral ischemia, and thrombosis or embolism in peripheral arteries) (adapted from Butt et. al).

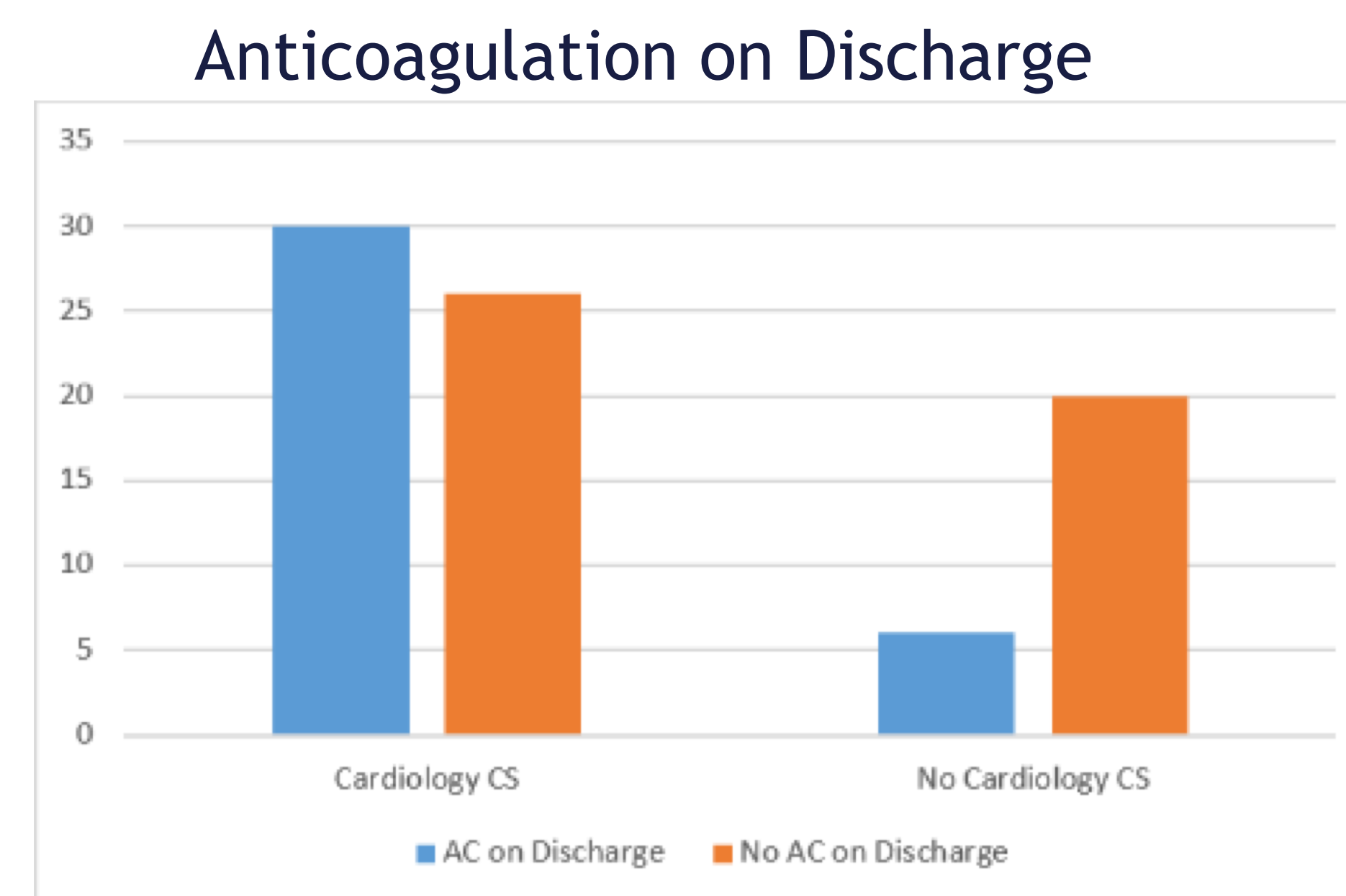


Figure 2: Displays whether patients who were appropriate for anticoagulation received AC on discharge as a function of the presence of a cardiology consult

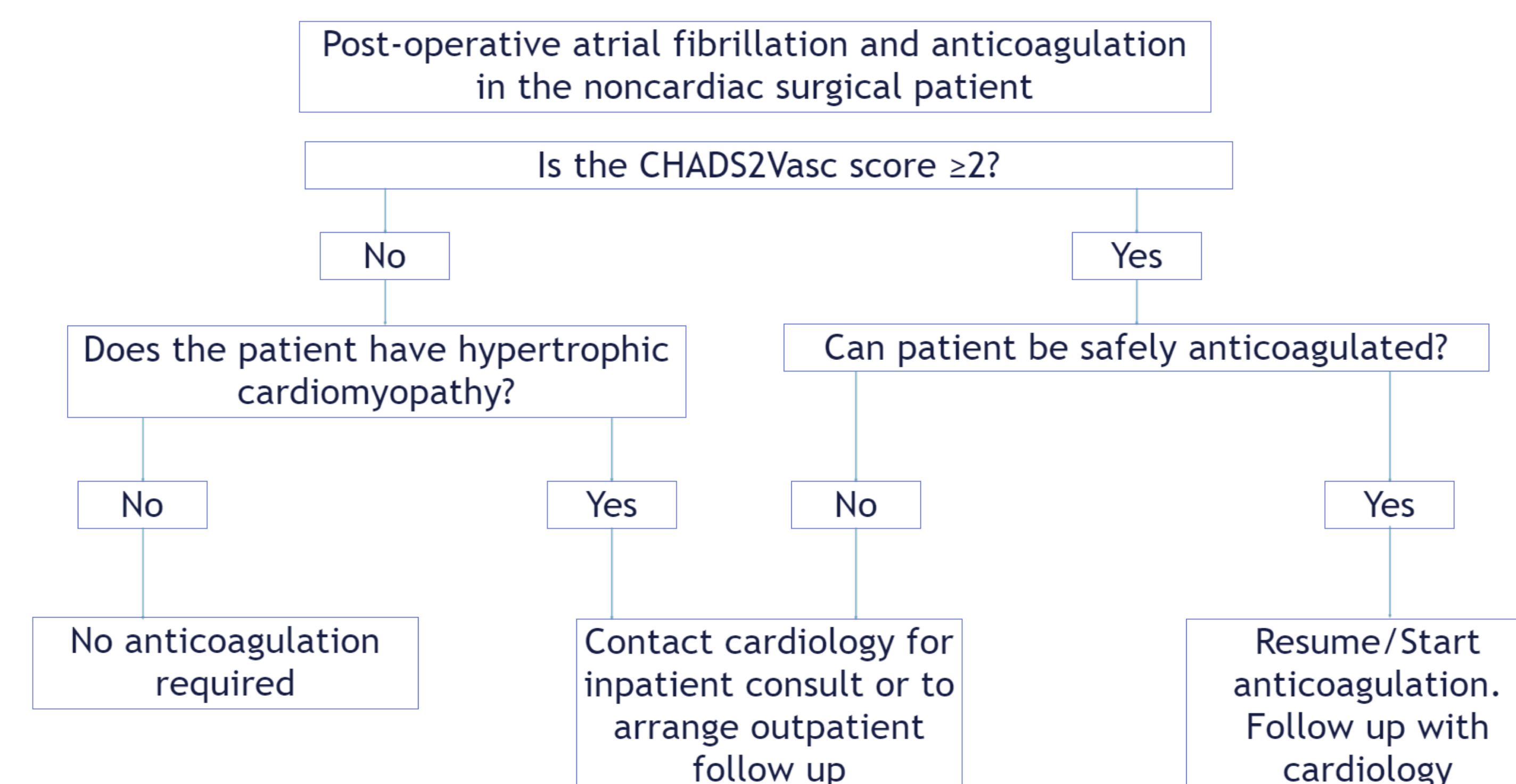


Fig 3. Proposed algorithm for anticoagulation in post-operative Afib

## Aims For Improvement

Overall aim: Improve recognition of need for anticoagulation in post-operative atrial fibrillation.

- Increase recognition that thromboembolic risk in post-op atrial fibrillation is similar to that of non-valvular atrial fibrillation
- Increase the rate of appropriate anticoagulation initiation in patients with post-op atrial fibrillation

## Intervention

- Our proposed intervention will help recognize post operative atrial fibrillation in the noncardiac surgical patient and ensure proper anticoagulation when indicated either in the in-patient or out-patient setting.
- This is to be accomplished by educating surgical teams and creating an algorithm that can be followed when a patient is found to be in atrial fibrillation post operatively.

## Next Steps

1. Focus on one type of surgery and one specific surgical team
2. Educate specific surgical team with new algorithm
3. Monitor atrial fibrillation and anticoagulation prescribing patterns at discharge for 3-6 months
4. Discuss with team for feedback and other ways to improve
5. Make any necessary adjustments to algorithm prior to repeating process with larger surgical teams