MetroHealth Medical Center
RESEARCH DAY 2023
Abstract Submission Form

Poster Title: The Use of Anticoagulation in Nonvalvular Atrial Fibrillation with Chronic Kidney Disease after Ablation or Cardioversion (STUDY00000306)

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Location of Laboratory:

Category: Clinical Research

Background
Atrial fibrillation (AF) is a tachyarrhythmia that is characterized by irregular atrial activity, which results in ineffective atrial contraction and reduced ventricular filling during diastole. The three pillars of AF treatment are rate control, rhythm control and prevention of stroke. The risk of stroke depends on multiple factors, which are conglomerated into the CHA_2DS_2-VASc score. It is recommended to start anticoagulation in males and females with a score of ≥ 2 and ≥ 3 respectively. Initiating anticoagulation needs to be weighed against patients' bleeding risk. Chronic kidney disease (CKD) is a well-known hemorrhagic risk factor that demands dose reduction, or in case of end-stage kidney disease (ESKD), the use of warfarin or apixaban only. These recommendations are based on weak evidence. Moreover, there has been no attempt to investigate the effect of anticoagulants on patients with CKD stage ≥ 3 who had undergone rhythm control by ablation or cardioversion.

Research Questions
In patients with AF and CKD stage ≥ 3 who underwent ablation or cardioversion:
1. What is the risk for stroke in warfarin versus direct-oral anticoagulants (DOACs)?
2. What is the risk for major bleeding in warfarin versus DOACs?
3. What are the additional risk factors for stroke and major bleeding?

Methods
This is a retrospective chart review of 500 patients who were diagnosed with CKD stage ≥ 3 and nonvalvular AF status-post ablation or cardioversion and are on warfarin or DOAC. Patients known to have bleeding disorder, history of thrombus or major bleeding, or history of stroke prevention procedures were excluded. Categorical data will be summarized using frequencies/percentages. It will be compared using Fisher's exact test with post-hoc analysis using z-test of two proportions with a Bonferroni correction. Continuous data with and without normal distribution will be summarized using means/standard deviations, and medians/quartiles respectively. Normally distributed data will be compared using ANOVA or Welch's ANOVA, with post-hoc analysis using Tukey's or Games-Howell tests respectively. Non-normally distributed data will be compared using Kruskal-Wallis test with post-hoc analysis with Mann-Whitney test. Cox proportional hazards model will be used to identify risk factors for thromboembolism and major bleeding event, and to calculate survival time.