Oral Anticoagulation Discontinuation following Catheter Ablation of Typical Atrial Flutter

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Abstract

Introduction: Catheter ablation (CA) of typical atrial flutter (AFl) is the preferred treatment for typical AFl due to excellent long-term success. However, current guidelines recommend oral anticoagulation (OAC) based on established indices of stroke regardless of the perceived success of ablation. Methods: We identified all patients who underwent typical AFl ablation at our institute from 2011-2017. All patients continued OAC for at least 6 weeks post CA and underwent 24-hour Holter monitoring. OAC was discontinued if there was no evidence of recurrence at 6 weeks. In patients with low LVEF or prior Atrial Fibrillation episodes, OAC was continued for 6 months with repeat Holter monitoring at 6 months. Results: A total of 106 patients were included in our analysis, mean age was 64±14 years and 78.3% were male. Mean CHADSVaSC score was 3±1. OAC was discontinued by 6 weeks in 17% and at 1 year in 55.7%. OAC was continued indefinitely in 44.3%. Over a mean follow up period of 28.6±27.3 months, there was one ischemic stroke in the OAC discontinuation group and no ischemic events in the continued OAC group. There was a total of 3 major bleeding events, all in the OAC group. Conclusion: In patients undergoing successful atrial flutter ablation, a strategy of OAC discontinuation with close rhythm monitoring appears feasible. Benefit of continued OAC in this cohort may be outweighed by the adverse risk of bleeding. Further studies examining rhythm guided OAC can minimize unnecessary exposure to long term anticoagulation.

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Key Words:

Atrial Flutter

Catheter Ablation

Oral Anticoagulation

Stroke

Bleeding

Abbreviations:

AFl= Atrial Flutter

CA= Catheter Ablation

OAC= Oral Anticoagulation

AF= Atrial Fibrillation

LV= Left Ventricular

Introduction:

Cavotricuspid isthmus dependent atrial flutter (AFl) is a commonly encountered arrhythmia and a well-recognized risk factor for cardio embolic stroke. Catheter ablation (CA) is the preferred treatment approach for typical AFl due to excellent long-term success. Oral anticoagulation (OAC) therapy is mainstay to reduce stroke risk in patients with AFl, but optimal OAC strategies following successful CA remains unclear. Current guidelines recommend OAC based on established indices of stroke risk such as CHA_2DS_2VaSC score regardless of the perceived success of ablation[1]. We sought to examine outcomes of a strategy of OAC discontinuation following successful AFl ablation.

Methods:

We conducted a retrospective study of all patients that underwent CA of typical AFl at our institution from 2011-2017. Our institutional protocol involved OAC for at least 6 weeks after successful AFL ablation, following which patients underwent a 24hr Holter recording. In the absence of atrial fibrillation (AF) or AFl, OAC was discontinued. In patients with a prior history of atrial fibrillation (AF) or heart failure (LV ejection fraction <50%), OAC was continued for 6 months' post ablation and a Holter was obtained. If Holter monitoring at 6 months showed no evidence of AF/AFl, OAC was discontinued. During long term follow up, yearly Holter monitors were performed. OAC was restarted in patients who had a recurrence of AFl/AF during follow up. Primary outcome was rate of OAC discontinuation and occurrence of major adverse events (thromboembolic events, major bleeding).

Results:

A total of 106 patients underwent AFl ablation during the study period (mean age 64±14; 78.3% male). Mean CHA_2DS_2VaSC score was 3±1. OAC (warfarin 42.5%) was continued for at least 4 weeks post CA in all patients. OAC was discontinued by 6 weeks in 17% of patients and by 1 year in 55.7% (**Figure 1A**). OAC was continued indefinitely in 44.3%. Most common reasons for continued OAC included history of AF, new onset AF on follow up or other non-arrhythmic indications for OAC. Over a mean follow up of 28.6±27.3 months, 2.8% of patients developed AFl recurrence and 33% developed AF. The median time to AF occurrence was 7.4 months (interquartile range, 0.9-24.4). During the study period, one patient (CHA_2DS_2VaSC 2) in the OAC discontinuation group developed a stroke 32 months after CA. There was no AF detected and the stroke was atherosclerotic by imaging. There were no thromboembolic events in the OAC continuation group.

There were 3 major bleeding events in the OAC continuation group compared to none in whom OAC was discontinued ($p<0.001$). All bleeding events were gastrointestinal that required either an endoscopy and/or blood transfusion. In the OAC discontinuation group, 12 (20.3%) patients developed AF during follow up. Mean time to occurrence of AF was 30.2±26 months (**Figure 1B**). Mean CHA_2DS_2VaSC score of these patients was 2.6±1.7. Nine patients were restarted on OAC with mean duration of 30.1±24.6 months between OAC discontinuation and restarting.

Discussion:

In this single center observational study, a strategy of OAC discontinuation with serial rhythm monitoring following successful AFl ablation appears to be safe and feasible. OAC discontinuation was associated with a significant reduction in major bleeding events with no increase is ischemic adverse events. This is consistent with previous studies reporting a low incidence of ischemic stroke (0.07%) among patients who stopped OAC after successful AF ablation[2]

A major reason for continued OAC following AFl ablation is the occurrence of AF, with incidence of AF ranging up to 50%[3]. AF occurring post AFl ablation can increase long term stroke risk.[4]. However, majority of these occurrences are usually in patients with a prior history of AF or LV dysfunction[5]. This was apparent in our experience as well where 44.3% of patients were on continued OAC with the predominant reason being a prior or new diagnosis of AF.

Our study is limited by its retrospective nature. Absence of continuous monitoring may also have led to under-recognition of asymptomatic or intermittent episodes of AF. Using insertable cardiac monitors can potentially guide OAC decisions and present an attractive venue for targeted OAC. In summary, we report successful OAC discontinuation in approximately half of our patient undergoing successful AFl ablation without an increased risk of ischemic complications. Further studies examining rhythm guided OAC can minimize unnecessary exposure to long term anticoagulants.

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Figure Legend

Figure 1: A) Percentage of Patients Remaining on Oral Anticoagulation Following Successful Atrial Flutter Ablation, B) Cumulative Incidence of New Onset Atrial Fibrillation after Atrial Flutter Ablation (AF= Atrial Fibrillation, OAC= Oral Anticoagulation)