Study Synopsis:

Title	Short Term Anti-aRrhythmic Therapy for Post-Operative AF in Cardiac Surgery Patients (START-POAF) Pilot Trial
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Study Design	START-POAF is a prospective, open-label two-arm randomized controlled trial with blinded assessment of outcomes (PROBE). This study will assess AF recurrence and burden in patients with new-onset AF following cardiac surgery
Study Objectives	**Feasibility:** Assess the feasibility of conducting a large RCT testing amiodarone loading only versus amiodarone loading and 4 weeks of maintenance therapy. **Surrogate Efficacy (Gate-keeping):** Assess the incidence of AF recurrence and burden in the first 28 days comparing amiodarone loading only versus amiodarone loading and 4 weeks of continued amiodarone maintenance therapy.
Eligibility Criteria	**Inclusion:** 1. Aged ≥18 years; 2. Have undergone cardiac surgery including coronary artery bypass graft, valve surgery, surgery on the aorta, or combinations thereof within 14 days of randomization; 3. Had new-onset POAF (or flutter), documented by 12-lead ECG or lasting ≥1 hour on telemetry. Patients can be in AF or sinus rhythm at the time of randomization; 4. Expected to receive 3 g - 5 g of amiodarone loading dose post-surgery; 5. Expected to be ready for hospital discharge within 48 h of randomization. **Exclusion:** 1. Documented preoperative history of paroxysmal, persistent or permanent AF; 2. Planned use of a class I or III anti-arrhythmic drug (other than study drug); 3. Patients who have undergone heart transplant, complex congenital heart surgery, isolated ventricular assist device insertion, or AF ablation (surgical or catheter); 4. Known allergy to ECG adhesives; 5. Contraindication to amiodarone (*i.e.* hyperthyroidism, severe restrictive (Total Lung Capacity (TLC) <50% predicted) or obstructive (Forced Expiry Volume (FEV_1) <49% predicted) lung disease, Long QT syndrome, PR > 240 ms, high-grade AV block). 6. Individuals who are pregnant, breastfeeding, or of childbearing potential - female subjects, premenopausal who are not surgically sterile, or, if sexually active not practicing an effective method of birth control (e.g., prescription oral contraceptives, contraceptive injections, intrauterine device, double-barrier method, contraceptive patch, male partner sterilization) before entry and throughout the study; and, for those of childbearing potential, who have a positive pregnancy test at screening
Sample size	400
Study Intervention	Participants with post-operative AF (POAF) who are expected to receive a loading dose of amiodarone will be randomized. Participants will be randomized to one of two treatment arms; receive amiodarone 200 mg daily for 4 weeks or no maintenance therapy. Randomized participants will wear a continuous ECG monitor for 28 days starting on the day after the participant finishes their 3 – 5 g of amiodarone loading dose.

Outcomes	**Feasibility:** (i) ability to recruit an average of 3 patients per centre per month (primary); (ii) <10% cross-over rate at 30 days; (iii) ≥90% taking at least 80% of their study medication; and (iv) ≥90% follow-up at 30 days. The outcomes of the full trial will also be collected. **Surrogate Efficacy (Gate-keeping):** Incidence of AF recurrence **Secondary Efficacy:** AF Burden (% time in AF), i) time to first AF >6 minutes, >6 hours and >24 hours ii) incidence of AF >6 minutes, >6 hours and >24 hours **Tertiary:** a composite of hospitalization, emergency room visit or unplanned urgent clinic visit for heart failure or arrhythmia; a composite of stroke, myocardial infarction and cardiovascular death; major bleeding; systemic arterial embolism; proportion of participants who undergo electrical cardioversion (with timing and indication) up to 90 days; AF-specific quality of life as assessed by the Atrial Fibrillation Effect on QualiTy-of-life questionnaire (AFEQT) and overall quality of life as assessed by SF12 at baseline, 30-day, and 90-days post randomization.
Duration of Study Period (per patient)	Overall study duration per patient is 90 days. Depending on the treatment arm, patients will receive 200 mg daily maintenance therapy of amiodarone for 4 weeks or no maintenance therapy. Randomized participants will wear a continuous ECG monitor for 28 days starting the day after the participant finishes their 3 – 5 g amiodarone loading dose. Follow-up evaluation for study outcomes will be done during a clinic visit or by telephone at 14, 30, and 90 days after randomization.