Introduction: Rheumatic mitral stenosis (MS) is the leading cause of chronic atrial fibrillation (AF) in the developing world and confers a high risk of systemic thromboembolism. Achievement of sinus rhythm (SR), an important goal in these patients often remains an area of unmet clinical need. Most data from the West pertain to non-valvular AF while studies in rheumatic AF have generally used Amiodarone as a rhythm control agent. Flecainide represents an attractive option in these patients but has not been studied primarily related to concerns of underlying structural heart disease.

Methods: Acute pharmacological cardioversion was attempted by single oral loading dose (SLD) of Flecainide (4mg/kg, < 300 mg) in 40 patients with chronic rheumatic AF (mean MVA 1.5+0.1cm², age 37.4±1.2 yrs, 18F, 22M, mean AF duration:3.1±1.2 yrs, mean heart rate 98.6±11.1 bpm, mean LA size:45.4±6 mm, 39 post BMV, mean 36.6±23 months post BMV). Patients intolerant of ββ/Diltiazem, rate < 60/min, LA > 60 mm, AF duration > 5 years, LV/RV dysfunction, left atrial/appendage clot were excluded. • Those in SR post SLD received oral flecainide (80 mg/m²; max 300 mg and ββ) at discharge. • Non-converters underwent DC cardioversion (DCC) at 24 hours (3 shocks of 150/200/200 Joules) and received Flecainide at discharge. • Those in AF after DCC received Flecainide and underwent a second DCC at 4 weeks. All patients received oral anticoagulation as per INR titration.

Result: Previous thromboembolism (stroke:3, peripheral embolism:3) was present in 6/40 patients. Acute conversion to SR with flecainide SLD was noted in 2/40 (5%) and 28/40 (70%) achieved SR after DCC (24 with DCC @ 150 J, 4 with 2nd shock @ 200 J). Acute responders (n=28) had lower AF duration (2.67 vs 3.8 yrs) and lower LA size (43.4 vs 49.8 mm) vs non responders. At 30 days (mean Flecainide dose 116.5±10.5 mg) maintenance of SR was possible in all 28 (70%, mean PR interval 193.4±10.05 ms) while at 6 months 22 (55%, mean PR interval 197.6±8.5 ms) were in SR. All patients underwent Holter at 6 months which confirmed absence of AF in all 22. Mean baseline QRS duration and QTc were 90.5±10.57 and 433.7±30 ms, at 24 hours (post Flecainide) 95.5±9.2 and 452±24.3 ms and at 6 months 100.3±9.88 and 455±14.9 ms respectively; no patient developed high grade AV block/arrhythmias.

Conclusion: In this study, oral flecainide was effective in achieving and maintaining SR in patients with rheumatic AF; acute conversion rates following DCC (70%) and maintenance rates at 30 days (70%) and at 6 months (55%). Flecainide was well tolerated with no proarrhythmic effects. Patients of
rheumatic MS are often young, unlikely to have underlying coronary artery disease or severe LV
dysfunction, making flecainide a potentially attractive modality for achieving and marinating SR in these
patients.