Background: Dofetilide is one of the most effective anti-arrhythmic agents for Atrial Fibrillation (AF). Reverse Use Dependence (RUD) property of Dofetilide improves antiarrhythmic efficacy at lower heart rate. Several patients with AF have pacemakers or defibrillators for various reasons. The effectiveness of Dofetilide in atrial paced rhythm at various rate settings has not been studied. Studying the implications of the RUD of Dofetilide in atrial paced rhythm will help appropriate programming. This study compares AF reduction in patients with atrial paced rhythm on Dofetilide with a higher and lower programmed pacing rates.

Methods: This retrospective study comprised of 38 patients with AF on Dofetilide who had an implanted pacemaker or defibrillator. Mean follow-up was for 1 year and only patients who were at least 40% paced in the atrium were included.

Results: 20 patients had a programmed lower rate ≤ 60 bpm (group A) and 18 patients had a lower rate > 60 bpm (group B). Mean age was 67±10 yrs with 68% male. Type of devices: CRTD 29%; PPM 55%; ICD 16%. Group A had higher number of patients with history of persistent AF (55% vs. 27%) and more number of patients with previous radio frequency ablation for AF (45% vs. 33%). The mean programmed atrial pacing rate was 58 bpm for group A and 73 bpm for group B. Mean atrial pacing (%) A 80% vs. B 77% p = 0.6) and ventricular pacing (%) 52% vs. 35%, p = 0.2). There was a trend towards higher AF burden in Group B (13.3% vs 7.5%) but was not statistically different (p = 0.3) and the number of patients with none or <1% AF burden was higher in group A (47% vs 35% p=0.31).

Conclusion: In AF patients on Dofetilide who have a predominantly atrial paced rhythm, a lower programmed pacing rate may reduce the AF recurrence and burden. A randomized trial with similar baseline characteristics in both groups and larger number of patients could consolidate the findings.