

# Abstract

**Introduction :** The pathogenesis of atrial fibrillation (AF) remains incompletely understood and management remains difficult and complex task. There is growing research work aiming at identifying role of different variables in predicting AF recurrence following treatment with the different currently available therapeutic options.

**Aim :** This study sought to explore the predictor role of some variables, especially the role of C-reactive protein (CRP) and estimated glomerular filtration rate (eGFR), for recurrence of AF in patients with paroxysmal atrial fibrillation (AF) treated by electrical cardioversion (CV) and antiarrhythmic drugs (AAD) as well as in patients treated by catheter ablation.

**Methods:** 120 paroxysmal AF patients with structurally normal heart by echocardiography divided into 3 groups each contain 40 consecutive patients according to the planned therapeutic intervention CV and AAD, radiofrequency(RF) PVI and cryoballoon PVI were studied for potential predictors of AF recurrence, especially CRP and eGFR. Pretreatment assay was calculated and all patients were followed up for 12 months following treatment for incidence of AF recurrence.

**Results:** patients with high levels of CRP showed consistent higher risk of AF recurrence over 12 months period follow up when RF PVI ( 83.3% with high CRP versus 17.7% with normal CRP) as well as AADs and electrical CV (94.4% with high CRP versus 54.6% with normal CRP) treatment regimens were followed (p values <0.001 and 0.005) respectively. However, this risk was insignificant in patients treated with cryoballoon PVI ( 28.6% versus 24.2%, p= 0.81). Low eGFR were associated with a borderline risk of AF recurrence in patients treated with AADs and electrical CV ( 91.7% versus 64.3%, p= 0.076). Yet, in those treated with RF PVI( 18.2% versus 31% ) or cryoballoon PVI( 44.4% versus 19.4% ) low GFR estimate was not associated with significant risk.

**Conclusion:** Pretreatment assessment of inflammatory variables including CRP level and eGFR should be conducted in paroxysmal AF patients before choosing the treatment modality in an aim of identifying higher risk patients for AF recurrence after treatment. Doing so might guide choice of treatment modality in terms of AF freedom achievement and risk benefit analysis.

**Keywords:** Atrial Fibrillation, Recurrence, inflammatory markers, CRP, eGFR, Radiofrequency, cryoballoon, pulmonary vein isolation, antiarrhythmic drugs, electrical cardioversion