

STS/EACTS Latin America Cardiovascular Surgery Conference

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Predictors of Late Recurrence in Surgical Treatment of Atrial Fibrillation

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Background

- Atrial fibrillation is the most common cardiac arrhythmia, with significant morbidity and mortality
- The surgical ablation should be considered in patients with structural heart disease who require surgical intervention
- The surgical treatment of atrial fibrillation (AF) failure rates are associated with pre, per and postoperative factors

Objective:

- To identify the predictors of late recurrence of AF after radiofrequency ablation of patients with persistent atrial fibrillation who underwent mitral and / or tricuspid valve surgery

Patients and Methods

- Prospective Cohort- January 2008 to December 2015
- 174 patients with persistent AF underwent the Cox-Maze IV procedure and concomitant mitral valve and / or tricuspid surgery
- 87 (51.79%) were in sinus rhythm at hospital discharge
- Follow-up 4.04 ± 2.04 years
- Student's t-test, Wilcoxon-Mann-Whitney, and Fisher's exact test
- Non-parametric ANOVA: analysis of repeated measures
- Statistical significance P <0.05

Variables	Total (n=174)	Total (n=87)
Age, years	57.16±12.47	56.72±13.11
Gender female	114 (65.52%)	52 (59.80%)
BMI, kg/m ²	26.06±4.60	25.65±3.77
Systemic Hypertension	105 (60.34%)	52 (59.80%)
Diabetes Mellitus	29(16.67%)	16(18.40%)
Rheumatic fever	51(29.31%)	25(28.73%)
Dyslipidemia	42(24.14%)	21(24.10%)
Stroke	24(13.79%)	13(14.90%)
Smoker	26(14.94%)	15(17.20%)
Prior heart surgery	46(26.44%)	22(25.30%)
NYHA II-III	149 (85.63%)	74 (85.05%)
Pulmonary hypertension	133(76.44%)	83(95.4%)
EuroScore II	3.61±3.35%	3.23±3.02%
LVEF	60±8.52%	60.31±8.55%
LAD	57.39±8.66	57.38±8.15
LVEDD	54.35±8.23	55.16±8.05
LVEDV	149.39±51.65	153.03±50.87

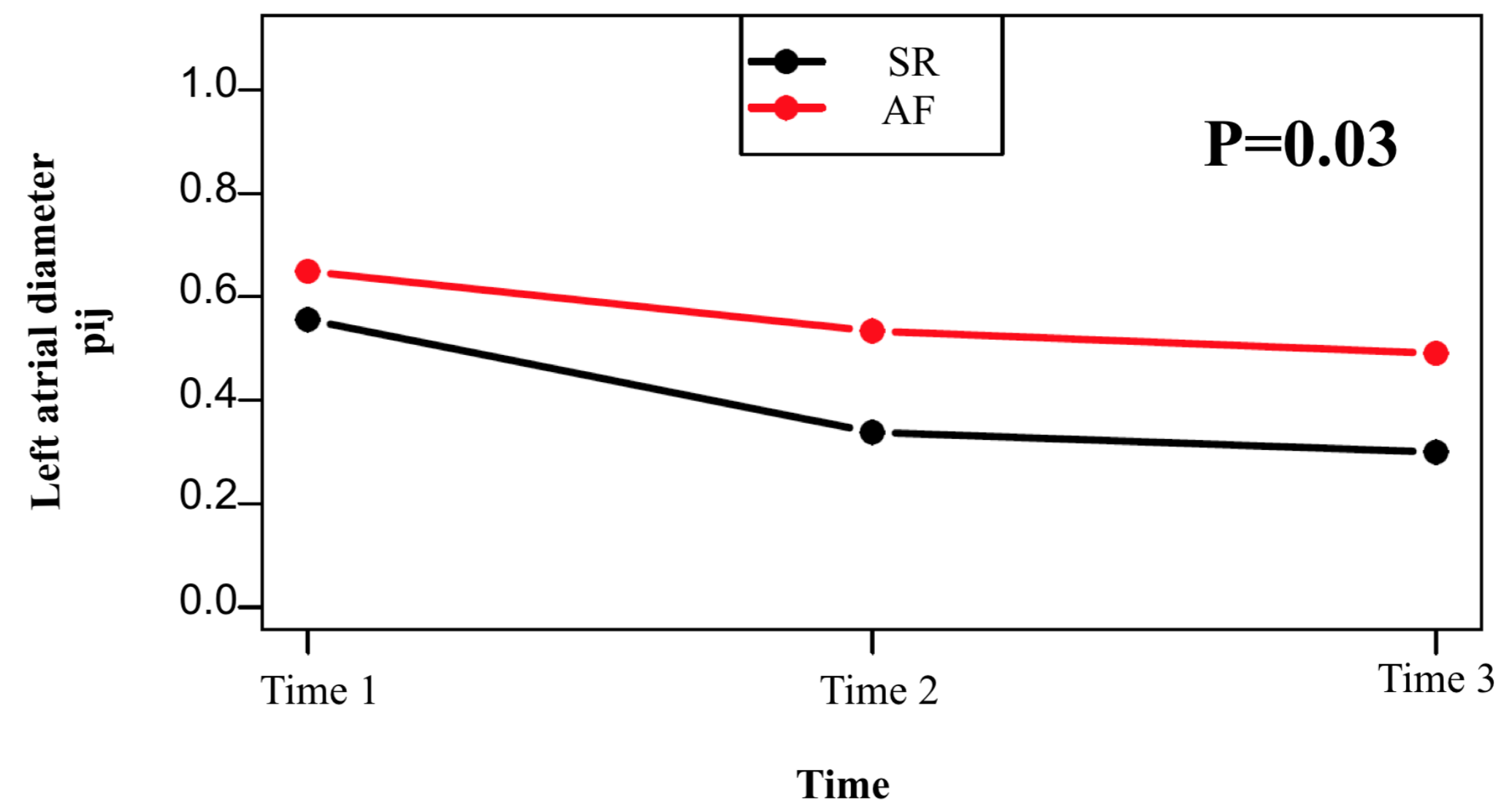
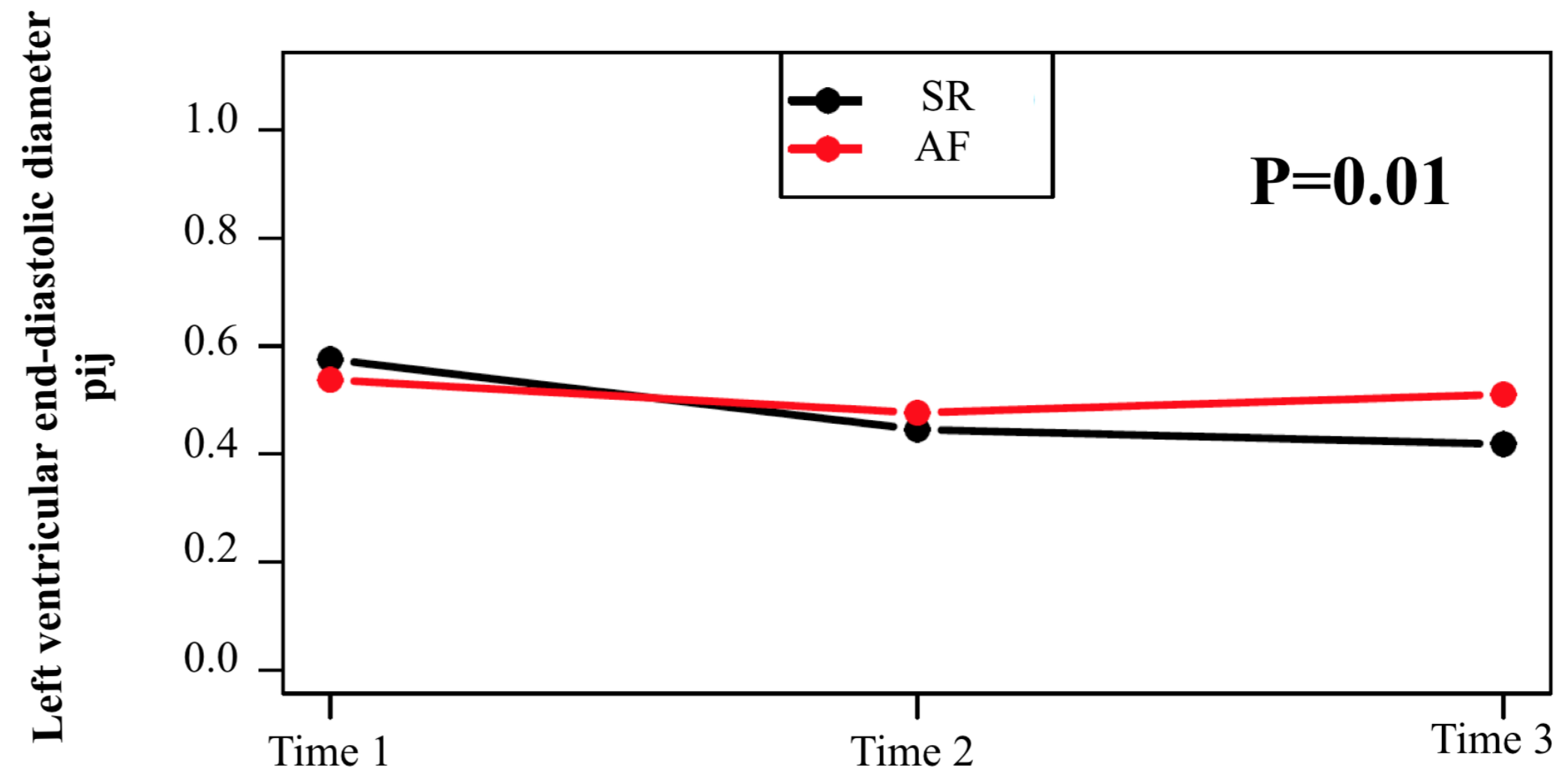
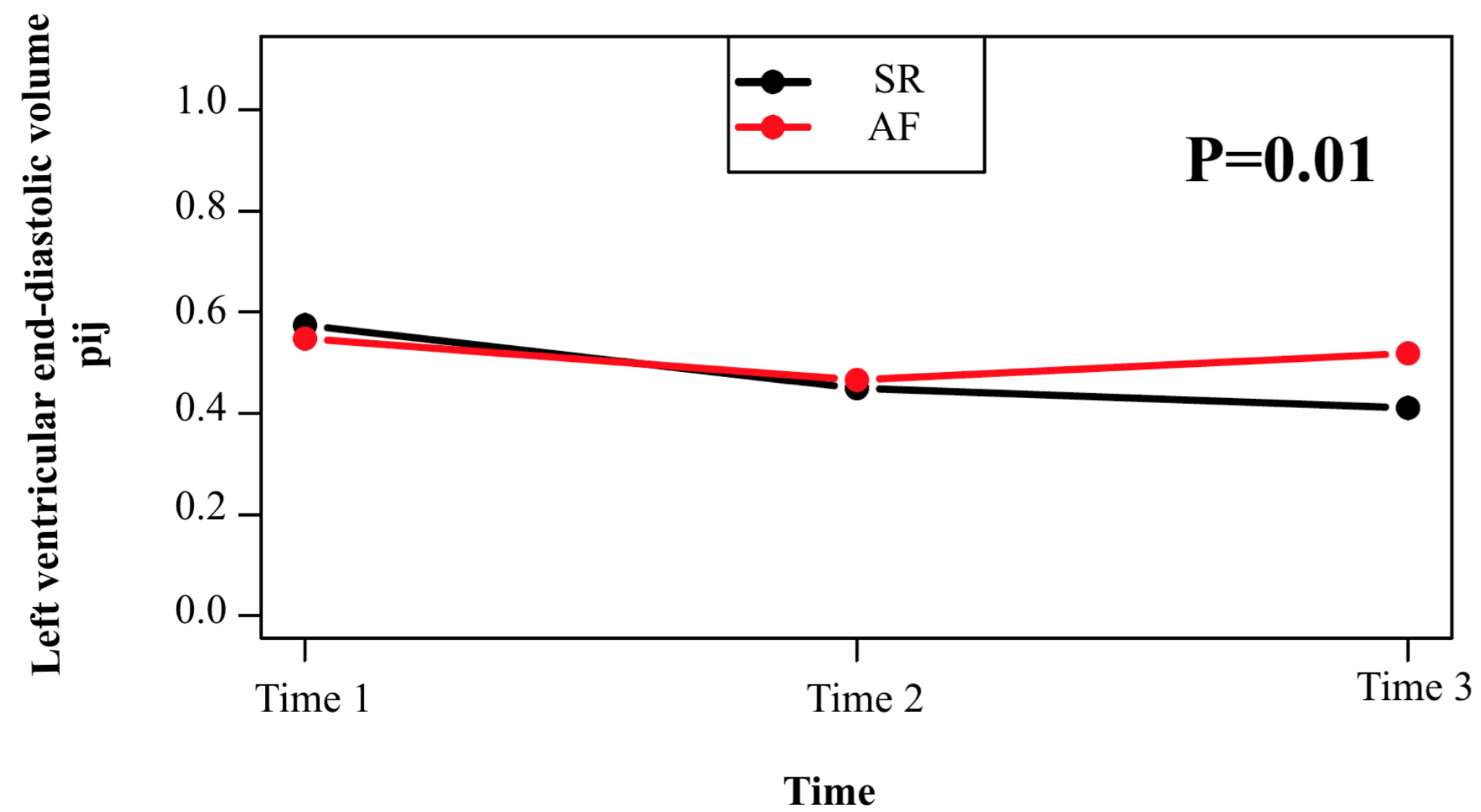
The Factors Associated with Recurrence of Late AF

Of the 87 patients who were discharged with sinus rhythm:

- 58 (66.67%) maintained sinus rhythm
- 3 (3.44%) required permanent pacemaker implantation

Variables	Odds ratio	95% CI	P value
Preoperative period			
Left atrial volume	1.01	0.99 to 1.03	0.05
Immediate postoperative period			
AF before hospital discharge			<0.001
Postoperative period of 6.49 ± 5 months			
Left atrial diameter	1.08	1.01 to 1.13	0.01
Pulmonary hypertension	1.07	1.02 to 1.13	0.003
Postoperative period of 3.29 ± 2.02 years			
Left atrial volume	1.06	1.01 to 1.11	0.01
Left atrial diameter	1.14	1.02 to 1.27	0.01
Left ventricular end-diastolic diameter	1.13	1.01 to 1.28	0.03
Left ventricular end-diastolic volume	1.02	1.0 to 1.04	0.04
Major tricuspid valve regurgitation	7	0.95 to 1.45	0.006
LVEF	0.89	0.83 to 0.96	0.006

Interactions between the sinus rhythm and recurrence of atrial fibrillation groups



Conclusion

In patients with persistent AF undergoing surgical ablation and mitral and / or tricuspid valve surgery, the main predictors of recurrence of AF in the late follow-up were:

- Higher preoperative LAV
- AF episode before hospital discharge
- Higher postoperative LAV, LAD, LVEDV, LVEDD, presence of pulmonary hypertension, tricuspid valve regurgitation and lower postoperative LVEF

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