

STS/EACTS Latin America Cardiovascular Surgery Conference

September 21-22, 2017 | Cartagena, Colombia

info@cardiovascularsurgeryconference.org
www.CardiovascularSurgeryConference.org

Incidence of Postoperative Atrial Fibrillation after minimally invasive mitral valve surgery

JUAN S. JARAMILLO, MD
Cardiovascular Surgery
Clinica CardioVID
Medellin Colombia



DISCLOSURE INFORMATION

- Consultant for the following companies:
 - Johnson & Johnson
 - Metronic

INTRODUCTION

Atrial fibrillation (AF) is the most common complication after cardiac surgery. By conventional approach, it occurs between 37% and 50% after valve surgery, 60% after combined valve surgery.

In a previous institutional study, we reported an incidence of 46% for AF after conventional sternotomy.

INTRODUCTION

Minimally Invasive approach (MIS) for valve surgery is associated with less bleeding, reduced wound infections, less incidence of AF, faster postoperative recovery, reduced hospital mortality and excellent cosmetic results.

We are performing MIS in CardioVID Hospital since November 2010. From 2013 until today we have done 200 mitral repairs and replacement surgeries

GENERAL OBJECTIVE

- To determine the incidence of postoperative AF in patients underwent to MIS in mitral valve interventions.

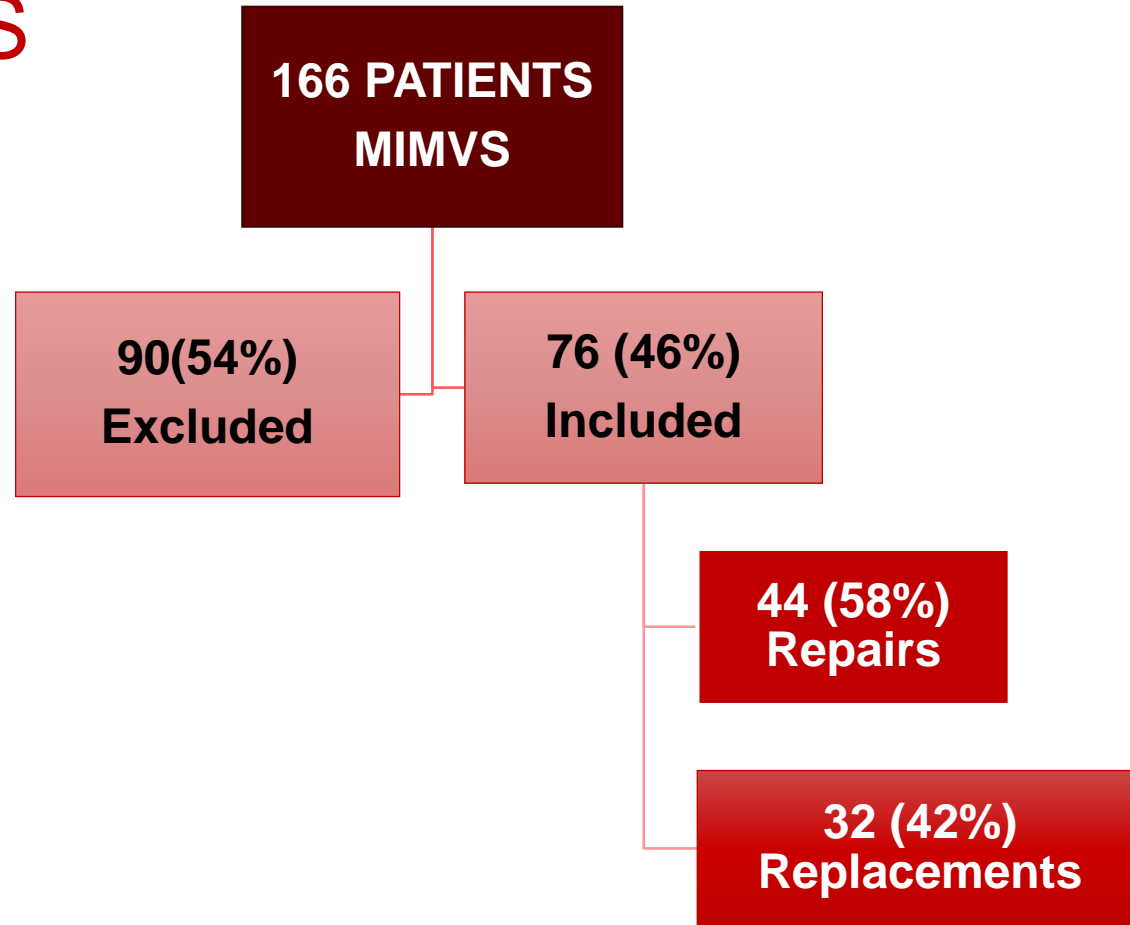
SPECIFIC OBJECTIVES

- To identify preoperative, intraoperative and postoperative risk factors that are significantly associated with the development of postoperative AF
- To compare ICU and total inpatients LOS between patients with and without postoperative AF.

METHODS

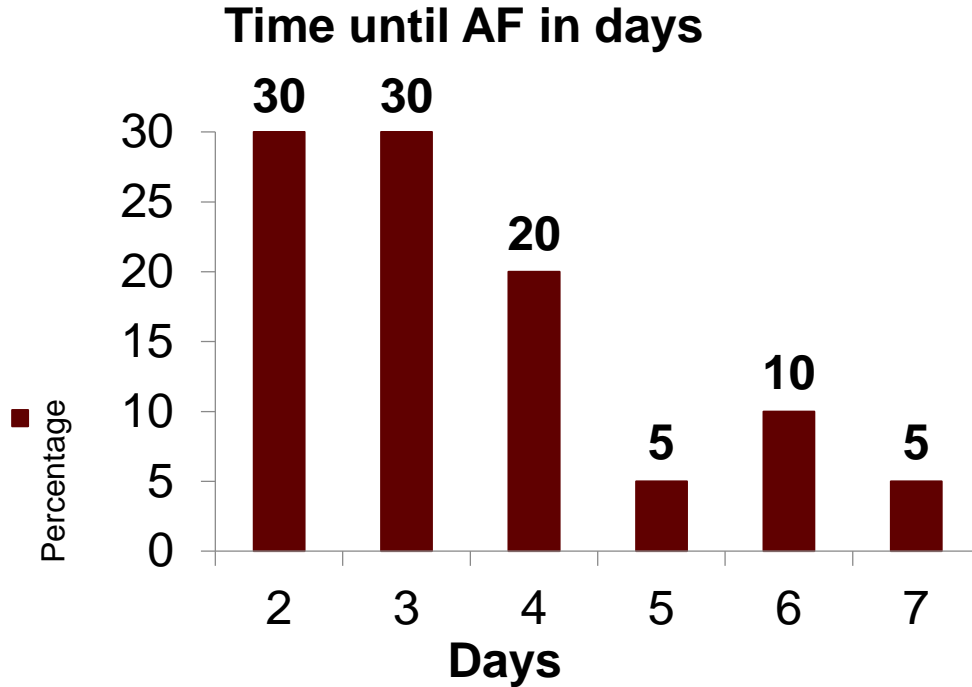
- Observational, descriptive and retrospective nested case - control study.
- From January 2013 to November 2015
- **Selection criteria:**
 - Adult patients that underwent mitral valve surgery using minimally invasive approach were included.
 - Patients with previous history of arrhythmias, cardiac surgeries, current active infective endocarditis and emergency situation were excluded.
 - Deaths were also excluded as competitive risk was taken into account.

RESULTS



RESULTS

Overall incidence of AF was 26%



80% of this patient group developed AF during the first four postoperative days

RESULTS

BIVARIATE ANALYSIS

	NON AF GROUP N=56	AF GROUP N=20	P VALUE FOR COMPARISON
CLINICAL VARIABLES			
Age years (mean, \pm SD)	52 \pm 13	60 \pm 10	0.01
Older than 60 y (n, %)	17 (30.4%)	14 (70%)	0.002
Male (n, %)	37 (66%)	7 (35%)	0.01
Female (n, %)	19 (34%)	13(65%)	
Body mass index (mean, range)	24.5 \pm 3.6	24.6 \pm 3.4	0.93
LVEF%	60 \pm 7	59 \pm 6	0.47
COMORBIDITIES			
Arterial hypertension (n, %)	31 (55.4%)	9(45%)	0.29
Smoking (n, %)	18 (32%)	8 (40%)	0.35
Dyslipidemia (n, %)	15 (27%)	5 (25%)	0.56
Hypothyroidism (n, %)	9 (16%)	5 (25%)	0.28
Obesity(BMI >30) (n,%)	4 (7%)	3 (15%)	0.26

RESULTS

BIVARIATE ANALYSIS

	NON AF GROUP N=56	AF GROUP N=20	P VALUE FOR COMPARISON
PREOPERATIVE MEDICATION			
Beta blockers (n, %)	14 (25%)	6 (30%)	0.44
PROCEDURE DATA			
Single Procedure (n, %)	52 (93%)	16 (80%)	0.12
Combined Procedure (n, %)	4 (7%)	4 (20%)	
Etiology			
Degenerative Disease	48 (86%)	15 (75%)	0.22
Rheumatic Disease	8 (14%)	5 (25%)	
Type of surgery (n, %)			
Repair	33 (59%)	11 (55%)	0.48
Replacement	23 (41%)	9 (45%)	
CPB time min (median, Interquartile range)	134 (107-157)	121 (106-158) minutes	0.72
Aortic cross-clamp time min (median, Interquartile range)	90 (81-114) minutes	85 (76-110) minutes	0.94

RESULTS

Following Hosmer Lemeshow's criteria, a multivariate logistic regression was performed to adjust all identified risk factors related to the main outcomes.

Age older than 60 years old and female sex, remained as independent risk factors to develop AF.

Multivariate predictors of Postoperative AF

	P value	Odds Ratio	95% C.I.	
			Lower limit	Upper limit
Female sex	,039	3,886	1,069	14,125
Rheumatic Etiology	,445	,526	,101	2,736
Combined Procedure	,309	,419	,078	2,242
Age Older than 60	,003	7,034	1,924	25,715

RESULTS

AF significantly increased hospital stay, both at the ICU and total Inpatients LOS

CLINICAL OUTCOMES	NON AF GROUP N=56	AF GROUP N=20	P VALUE FOR COMPARISON
Readmission rate (n,%)	1 (2%)	2 (10%)	0,16
LOS intensive care unit (median, Interquartile range)	1 (1-3) days	3(2-7) days	0,01
Posoperative Hospital stay, days (median, Interquartile range)	4 (3-6) days	9 (6-18) days	0,005
Total length of stay (median, Interquartile range)	6 (4-9) days	12 (8-24) days	0,007

CONCLUSIONS

- In comparison with a previous report from our own experience with the conventional approach, the MIS mitral valve surgery improved the incidence of postoperative AF (46% vs 26%)

CONCLUSIONS

- We found similar results to Mihos, Santana, Lamas et al who reported an incidence of 25% for MIS approach and 37% in conventional sternotomy.

CONCLUSIONS

- Our findings are consistent with previous reports from literature regarding age and female sex as independent and important risk factors. Although, we didn't find an association between surgery times and AF.

CONCLUSIONS

- Our data regarding hospital stay is also consistent with previous reports from other authors. Both ICU and Inpatients LOS were significantly higher for the group with AF in comparison with our controls.

STS/EACTS Latin America Cardiovascular Surgery Conference

September 21-22, 2017 | Cartagena, Colombia

info@cardiovascularsurgeryconference.org
www.CardiovascularSurgeryConference.org

Thank You



The Society
of Thoracic
Surgeons



EACTS
European Association For Cardio-Thoracic Surgery

