

Prospective Analysis of 50 Oligosymptomatic Patients with Severe, Structural Mitral Regurgitation, Who Underwent a Procedure of Minimally Invasive Mitral Valve Repair

Witold Gerber, Agnieszka Drzewiecka-Gerber, Krzysztof Sanetra, Małgorzata Świątkiewicz, Katarzyna Czarnecka, Justyna Jankowska-Sanetra, Marek Cisowski

May patients with severe, oligosymptomatic structural mitral valve regurgitation benefit from minimally invasive mitral valve repair?

Background

- 5-year combined incidence of atrial fibrillation, heart failure, or cardiovascular death (CVD) in nonsurgical, asymptomatic patients with normal ventricular function and severe mitral regurgitation was estimated at 42 ± 8% [1]
- heart failure at 10 years was less frequently found after early surgery for severe mitral regurgitation (7%) than after initial medical management (23%) [2]
- survival was estimated at 86% after early surgery for severe mitral valve regurgitation versus 69% for initial medical management at 10-year follow-up [2]

1. Francesco Grigioni, MD et. Al. *Outcomes in Mitral Regurgitation Due to Flail Leaflets. A Multicenter European Study*. J Am Coll Cardiol Img. 2008;1(2):133-141. doi:10.1016/j.jcmg.2007.12.005

2. Suri RM, Vanoverschelde JL, Grigioni F, Schaff HV, Tribouilloy C, Avierinos JF, Barbieri A, Pasquet A, Huebner M, Rusinaru D, Russo A, Michelena HI, Enriquez-Sarano M. *Association between early surgical intervention vs watchful waiting and outcomes for mitral regurgitation due to flail mitral valve leaflets*. JAMA. 2013 Aug 14;310(6):609-16. doi:.

Material and methods

- group of 50 patients (37 male, 13 female)
- severe mitral regurgitation according to ESC/EACTS 2012 echocardiographic criteria
- qualitative and quantitative echocardiographic assessment before the surgery and six months after the surgery
- surgical procedure performed through right mini-thoracotomy
- clinical evaluation: NYHA-class, presence of arrhythmia, recurrent hospital admission, perioperative complications

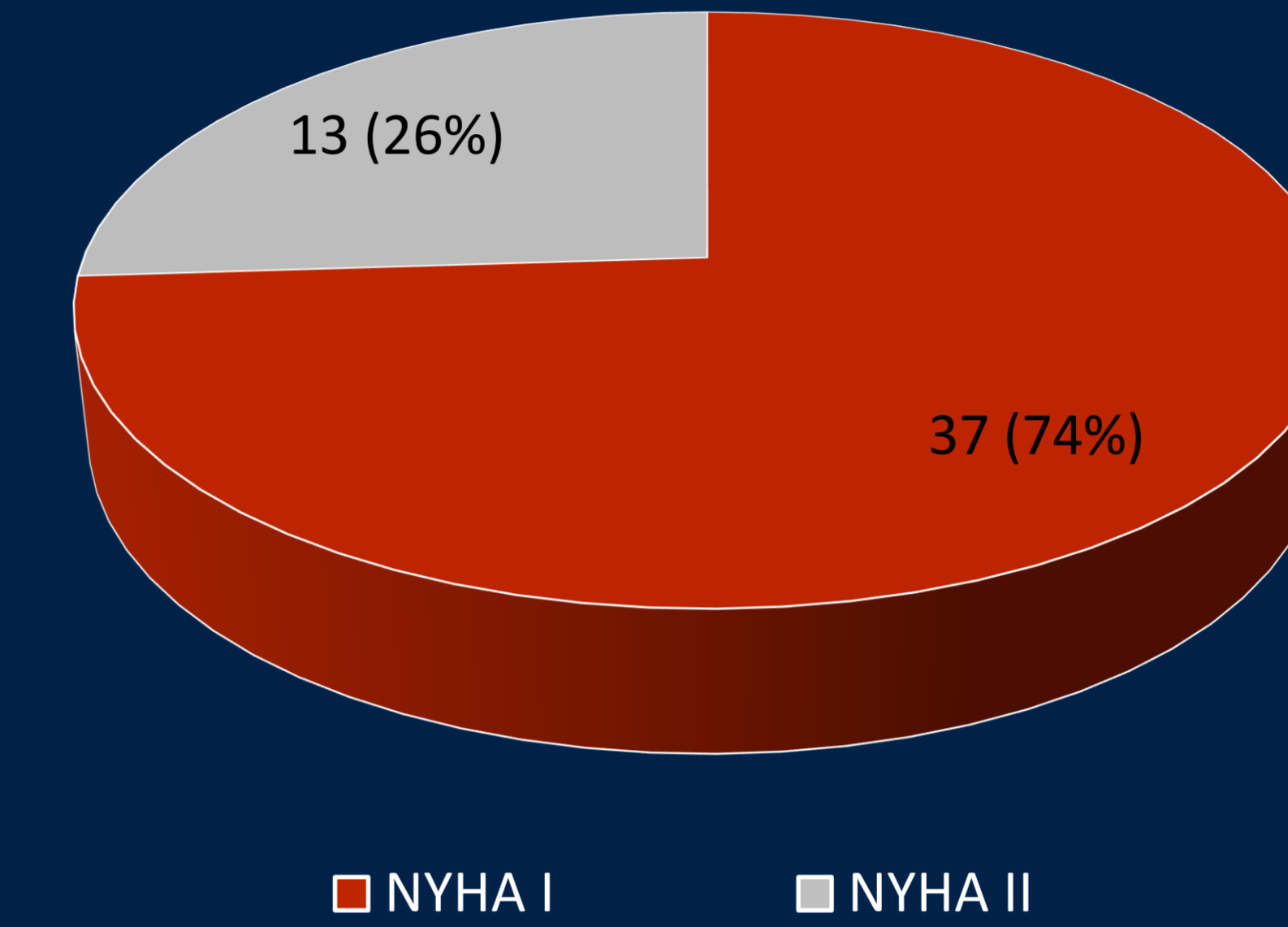


Fig.1 NYHA functional class assessment at baseline

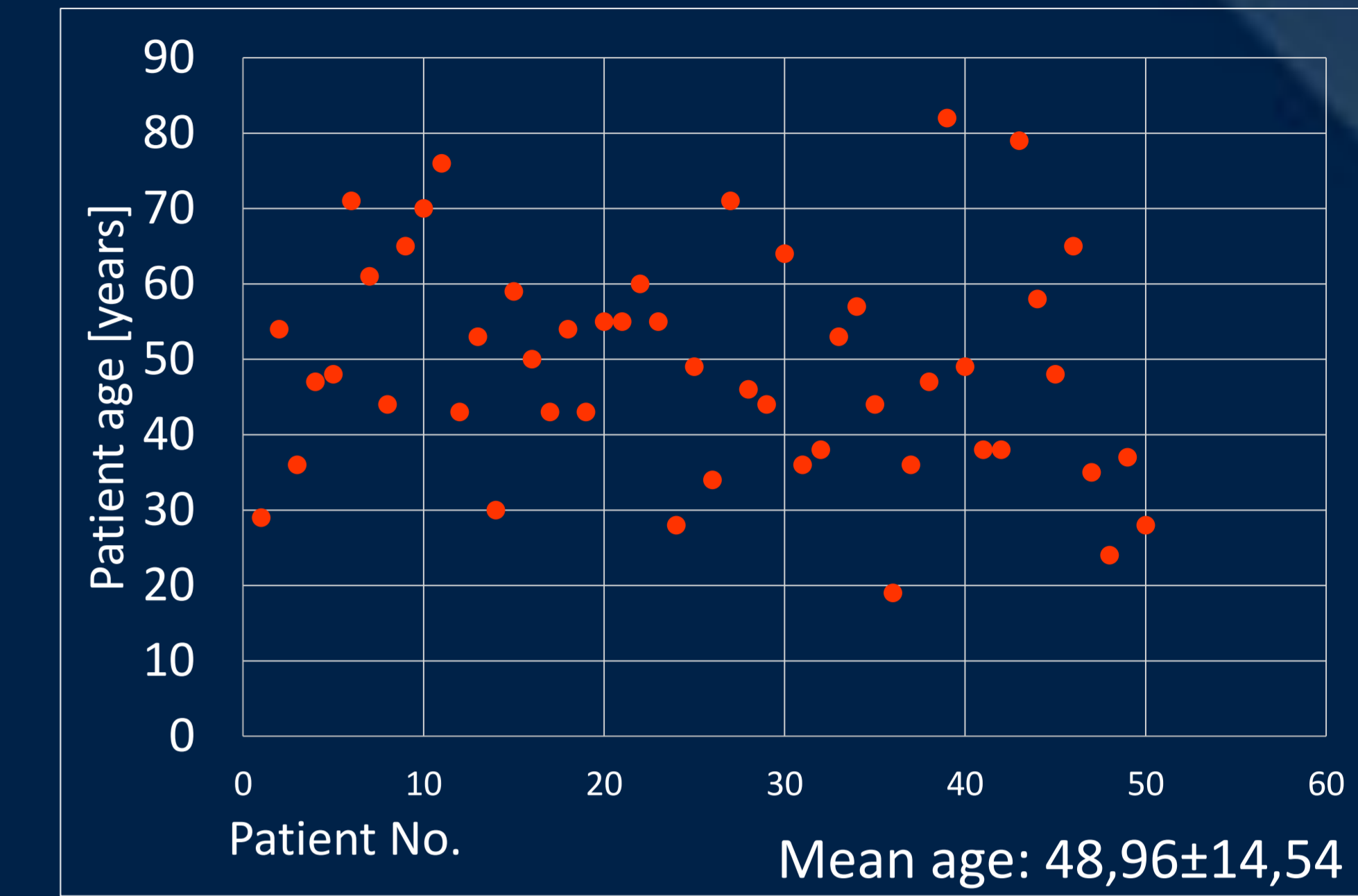


Fig.2 Patient age

Annuloplasty Ring Implantation	50 (100%)
Artificial chordae tendinae implantation	38 (76%)
P2 resection	9 (18%)
P1/P2 cleft closure	2 (4%)
P2/P3 cleft closure	2 (4%)
Atrial radiofrequency ablation	4 (8%)
Left atrial appendage closure	7 (14%)
Patent foramen ovale closure	5 (10%)
Cross-clamp time [min]	83± 17,6
Extracorporeal circulation time [min]	120,8±25

Tab.1 Surgical procedures

Arrhythmias (self-termination, pharmacotherapy)	6 (12%)
Arrhythmias (cardioversion required)	1 (2%)
Pleurocentesis	6 (12%)
Surgical field re-exploration	3 (6%)
Mean hospitalization time [days]	7,5 ±1,7

Tab.2 Perioperative complications

Echocardiographic evaluation	EF [%]	LV EDV [cm3]	LV ESV [cm3]	LV EDD [mm]	LV ESD [mm]	LA volume [cm3]	LA area [cm2]
Before surgery	65,39±11,06	176,76±55,01	62,96±30,54	58,12±8,53	35,71±7,47	102,37±46,75	27,93±8,27
6-month observation	58,48±7,17	110,91±29,59	43,91±17,46	49,97±6,57	32,38±6,07	62,91±24,34	19,10±5,59

Tab.3 Echocardiographic evaluation

Death	0
Mild transvalvular leak	3 (6%)
Pleurocentesis	4 (8%)
Stroke	1 (2%)
Reoperation	1 (2%)
Pericarditis	1 (2%)

Tab.4 Complications after six months

Results

- echocardiographic evaluation as presented in tab. 3
- complications as presented in tab. 4
- clinically 98% patients in NYHA-I and NYHA II class
- nine patients (18%) maintained without pharmacotherapy
- nine patients (18%) required only small dose of beta-blocker

Conclusions

Minimally-invasive mitral valve surgery should be considered in oligosymptomatic patients as it is safe, highly successful method that significantly improves echocardiographic and clinical parameters in 6-month observation .

Presented at: