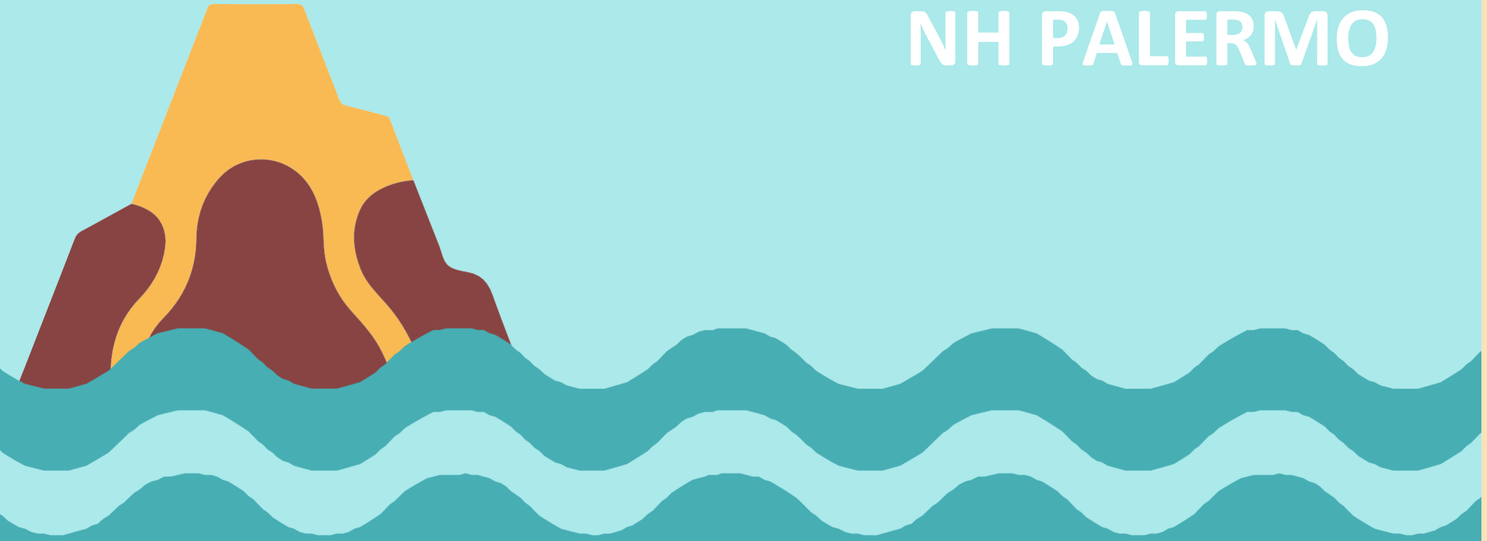
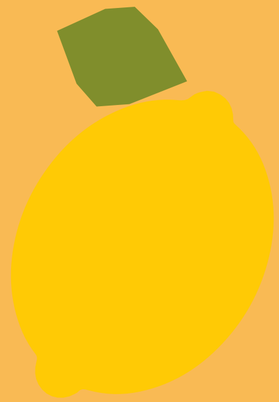
EUROVALVE

& STRUCTURAL CARDIOMYOPATHIES

NH PALERMO





SAVE THE DATE

OCTOBER 24&25,2024

COURSE DIRECTORS

Patrizio Lancellotti, Belgium
Khalil Fattouch, Italy
Gilbert Habib, France
Philippe Pibarot, Canada
Mani Vannan, USA

LOCAL HOST

Khalil Fattouch, Italy

Results of minimal invasive aortic valve replacement

Adam Kowalówka MD[1,2], Konrad Mendrala MD[3], Tomasz Kargul MD[1], Radosław Gocoł MD, PhD[1,2]

1. Department of Cardiac Surgery, Upper-Silesian Heart Center, Katowice, Poland;
2. Department of Cardiac Surgery, Medical University of Silesia, Faculty of Medical Sciences, Katowice, Poland;
3. Department of Anaesthesiology and Intensive Care, Medical University of Silesia, Katowice, Poland

I have nothing to declare

OBJECTIVES

- Patients with severe aortic valve (AV) stenosis or insufficiency can undergo minimal invasive aortic valve surgery with mini-sternotomy MI and full sternotomy (FS) on the other hand.

- Our study evaluates five-year outcomes in patients after minimal invasive surgery for aortic valve replacement (AVR) compared with full sternotomy access.

METHODS

- We conducted a single-center registry data analysis of AV patients that underwent only elective, isolated AVR compared to mini-sternotomy, and full-sternotomy hospitalized between 2014 and 2024 in Cardiac Surgery Department at Medical University of Silesia.

- Redo, emergency, salvage and concomitant procedures were excluded.

- The survival data was verified in National Health Found.

- Propensity score matching (PSM) was conducted to determine FS controls for MINI group in 1:1 ratio with 0.1 SD caliper.

RESULTS

- Study group included elective 1292 patients (75 MI, and 1217 FS) with median EuroScore II in MI 1.24 (Interquartile range [IQR: 0,87-2,04]) vs 1.18 ([IQR: 0,85-1,48]) in FS.
- After matching differences were found only in cardiopulmonary bypass time in MI vs. FS (71 [IQR: 60-86,5] vs. 63 [IQR: 51,5-73]) and stay in the intensive care unit which, was shorter in MI 2 [2-3] days vs. 3 [2-4] days respectively (p=0.035)

Table 1. Preoperative characteristics before and after PS-matching

Variable	All patients			PS-matched patients		
	FS (1,217)	MI (75)	P value	FS (75)	MI (75)	P value
Baseline characteristics						
age years						
	67(60-73)	65(57-71)	0,123	63(55,5-71)	65(57-71)	0.741
gender						
female	489(40.2%)	32(42.7%)	0.670	24(32%)	32(42.7%)	0.410
diabetes						
	314(25.8%)	14(18.7%)	0.168	17(22.7%)	14(18.7%)	0.546
smoking	806(66.2%)	44(58.7%)	0.180	47(62.7%)	44(58.7%)	0.616
hypertension	1015(83.4%)	64(85.3%)	0.662	64(85.3%)	64(85.3%)	1.0
hyperlipidemia	828(68.0%)	54(72%)	0.474	50(66.7%)	54(72.0%)	0.479
LVEF (%)	55(50-60)	55(52,5-60)	0,299	55(50-60)	55(52,5-60)	0.426
weight	80(70-90)	83(69-93,5)	0,219	81,2(74-93)	83(69-93,5)	0.783
creatinine level						
mg/dl	0,9(0,77-1,03)	0,86(0,735-1,005)	0,142	0,94(0,8-1,055)	0,86(0,735-1,005)	0.081
Troponin T hs (ng/ml)	0,013(0,009-0,021)	0,015(0,009-0,024)	0,228	0,0135(0,009-0,0187)	0,015(0,009-0,024)	0.395
Euroscore II	1,24(0,87-2,04)	1,18(0,85-1,48)	0,13	1,12(0,76-1,505)	1,18(0,85-1,48)	0.944
atrial fibrillation						
paroxysmal	157(12.9%	3(4%)	0.018	9(12%)	3(4%)	0.085
permanent	6(0.5%)	0(0\%)	1.0	1(1.3%)	0(0%)	0.987
postoperative	196(16.1%)	11(14.7%	0.742	9(12%)	11(14.7%)	0.631
cerebrovascular disease	66(5.4%)	2(2.7%)	0.426	5(6.7%)	2(2.7%)	0.261
bleeding (ml)	520(400-720)	460(332,5-605)	0,032	500(385-655)	460(332,5-605)	0.653
COPD	75(6.2%)	7(9.3%)	0.396	2(2.7%)	7(9.3%)	0.106
CPB time (min)	63(53-76)	71(60-86,5)	0,003	63(51,5-73)	71(60-86,5)	0.037
X-clamp time (min)	50(41-61)	55(45-64,5)	0,055	48(39-61)	55(45-64,5)	0.202
recent MI (<30 days)	0(0%)	4(5.3%)	<0.001	0(0%)	4(5.3%)	0.989
NYHA	2(2-3)	2(2-3)	0,38	2(2-3)	2(2-3)	0.433
CCS	1(1-2)	2(1-2)	0,529	1(1-2)	2(1-2)	0.374
severe aortic stenosis	1126(92.5%)	70(93.3%)	0.795	67(89.3%)	70(93.3%)	0.388
Pmax AV	80(68-95)	82(75-89)	0,613	80(69,25-94,75)	82(75-89)	0.547
Pmean AV	48(40-60)	47(42-57)	0,897	44,5(40-56,25)	47(42-57)	0.893
Prothesis size (mm)	23(21-25)	23(23-25)	0,03	23(21-23)	23(23-25)	0.608
LOS ICU	3(2-4)	2(2-3)	0,003	3(2-4)	2(2-3)	0.035
LOS total	8(7-10)	9(7-11)	0,024	8(7-9,5)	9(7-11)	0.320
re-sternotomy	80(6.6%)	2(2.7%)	0.226	4(5.3%)	2(2.7%)	0.414
stroke / TIA	33(2.7%)	0(0%)	0.255	3(4.0%)	0(0%)	0.985
pulmonary complications	27(2.2%)	1(1.3%)	1.0	2(2.7%)	1(1.3%)	0.567
delirium	42(3.5%)	4(5.3%)	0.336	5(6.7%)	4(5.3%)	0.731
VAC	3(0.2%)	0(0%)	1.0	1(1.3%)	0(0%)	0.987
tamponade	11(0.9%)	2(2.7%)	0.172	2(2.7%)	2(2.7%)	1.0
cardiac arrest	15(1.2%)	0(0%)	1.0	1(1.3%)	0(0%)	0.987
Perioperative heart stimulation	78(6.4%)	4(5.3%)	1.0	5(6.7%)	4(5.3%)	0.731

AV; aortic valv; CAD, coronary artery disease; CC, creatinine clearance; CCS; Canadian cardiovascular society; COPD, chronic obstructive lung disease; FS, full sternotomy; ICU intensive care unit; LOS; length of stay; LVEF, left ventricle ejection fraction; MI, myocardial infarction; NYHA, New York Heart Association.PS, propensity score;; MI minimal invasive surgical aortic valve replacement; (IQR). interquartile range; VAC; vacuum assist closure;

RESULTS

Fig.1

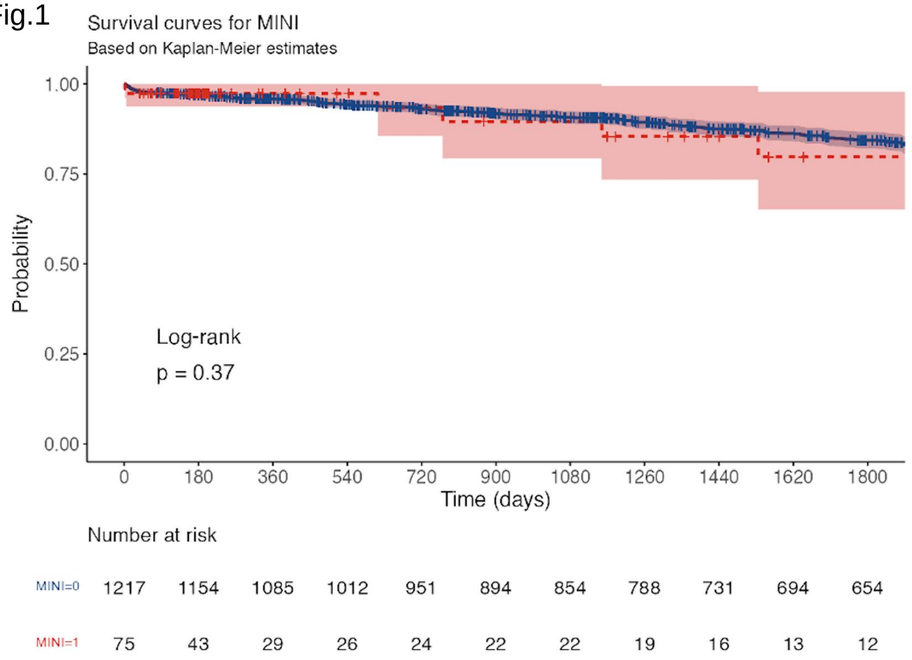
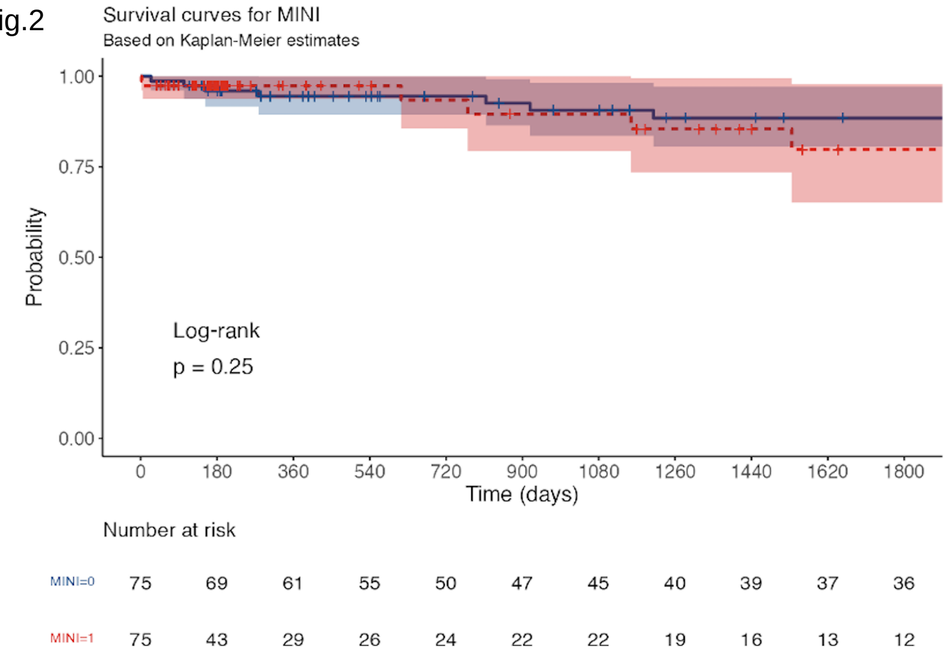


Fig.2



- The 5-years survival was without differences in both group pre PSM (HR 1.35 95% CI [0.69-2,64]; p=0.375;), (Fig.1) vs. post PSM (HR 1.71, 95% CI [0.68-4.26]; p=0.252), (Fig.2).

CONCLUSIONS

- Minimal invasive AVR as compared with full sternotomy surgery is a safe and cost-effective option with similar 5-year outcomes.

- Consider to results less invasive alterative should be first choice option for patients with aortic valve diseases.

EUROVALVE
& STRUCTURAL CARDIOMYOPATHIES
NH PALERMO

OCTOBER
24&25 2024

THANK YOU