

Minimal Invasive And Standard Approach For Surgical Treatment Of Patients With Isolated Aortic Stenosis.

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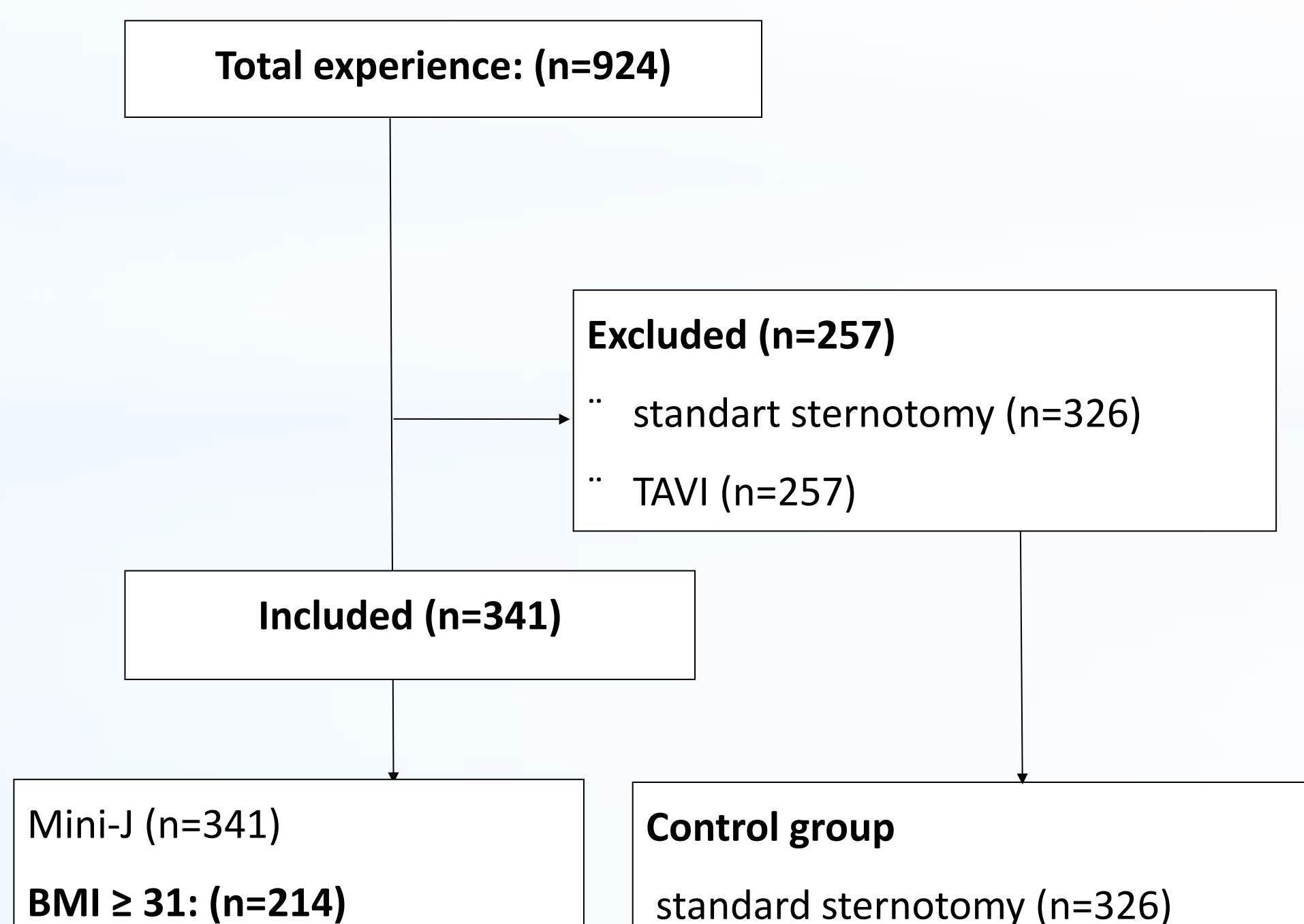
- Last 40 years aortic valve replacement the most common operation to treatment patients with isolated degenerative disease of aortic valve. So, today in world practice aortic valve replacement is performed by median sternotomy and different minimally invasive approaches. But each technique has limitations and advantages, and impossible to generalize one technique for all patients, considering individual surgical features in each patient.

- The aim of study was to evaluate outcomes of aortic valve replacement performed through mini-J sternotomy compared with full sternotomy.

Methods:

Between 2012 to 2025, in our Center was performed 924 operations - isolated aortic valve replacement.

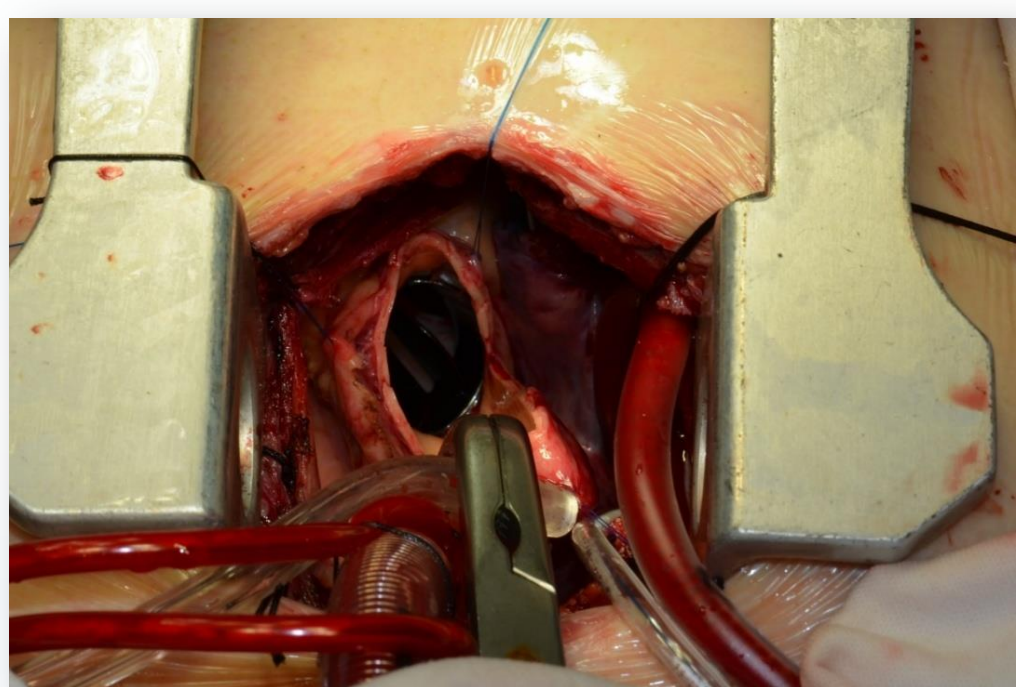
The design of the study



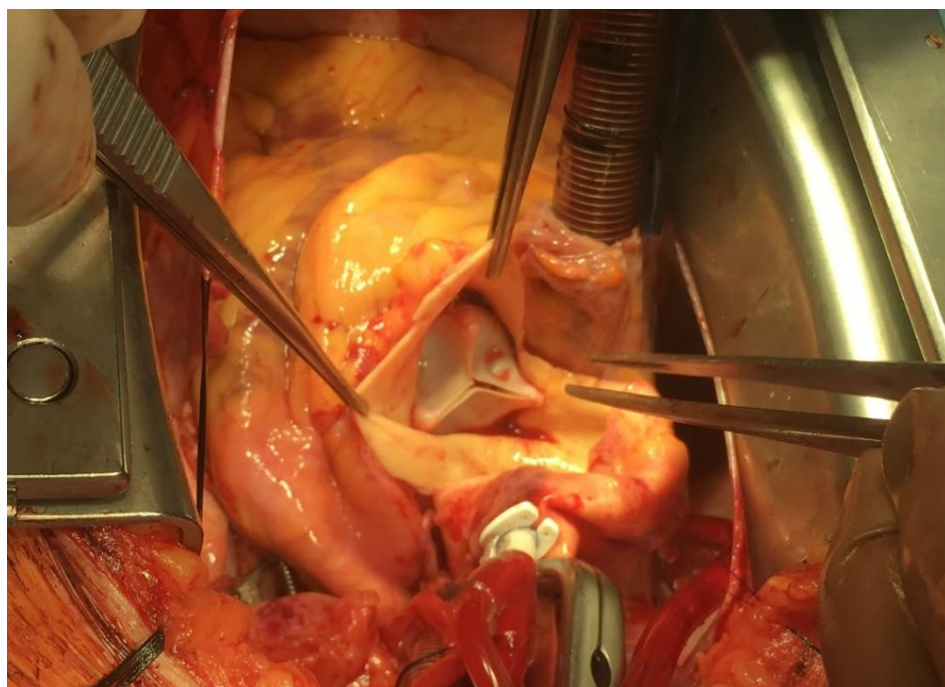
Baseline demographic and clinical characteristics

Variable	Mini J (n – 341)	Control group standard sternotomy (n – 326)	p Value
Age, years, means ± SD	68,1±11,4	67,8±12,4	p = 0,107
Patients older 70 years, no	120 (35,2%)	114 (34,9%)	p = 0,147
Male, no, %	126 (36,4%)	118 (36,2%)	p = 0,248
Mean BMI, m ± SD	31,2 ± 5,7	29,2 ± 1,7	p < 0,001
BMI more 35, no, %	126 (36,9%)	93 (28,5%)	p = 0,001
EuroSCORE II, means ± SD,	2,7 ± 0,8%	2,5 ± 0,5%	p = 0,058
NYHA functional class, no, %			
I	0	0	
II	71 (20,8%)	68 (20,9%)	p = 0,086
III	250 (73,3%)	240 (73,6%)	p = 0,134
IV	20 (5,9%)	18 (5,5%)	p = 0,189
Peak gradient on AV mm Hg. Art.	74,2±19,8	73,9±19,4	p = 0,862
Δ P mean 40 – 59 mm Hg. Art., no, %	226 (66,3%)	213(65,3%)	p = 0,401
End Diastolic volume, mean ± SD, ml	89,3 ± 31,7	80,2 ± 24,4	p < 0,001
Ejection fraction, mean ± SD, %	58,5 ± 5,1	58,3 ± 5,6	p = 0,252
Interventricular septum, mean ± SD, mm	1,9 ± 0,3	1,8 ± 0,4	p = 0,685
Concomitant disease			
Chronic lung disease, no, %	43 (12,6%)	38 (11,6%)	p = 0,315
Chronic renal disease, no, %	19 (5,6%)	18 (5,5%)	p = 0,204
Diabetes, disease, no, %	75 (21,9%)	68 (20,8%)	p = 0,144

Mini J



SAVR



Intraoperative results:

Variable	Mini J (n – 341)	Control group standard sternotomy (n – 326)	p Value
Operation time	209,9 ± 20,9	204,6 ± 22,7	p = 0,068
On pump time	65,5 ± 12,5	64,7 ± 13,1	p = 0,729
interventricular septum defect	0	0	p = 1,0
Complete AV block	5 (1,5%)	4 (1,2%)	p = 0,191
Conversion to full sternotomy	4 (1,2%)	0	p = 0,086

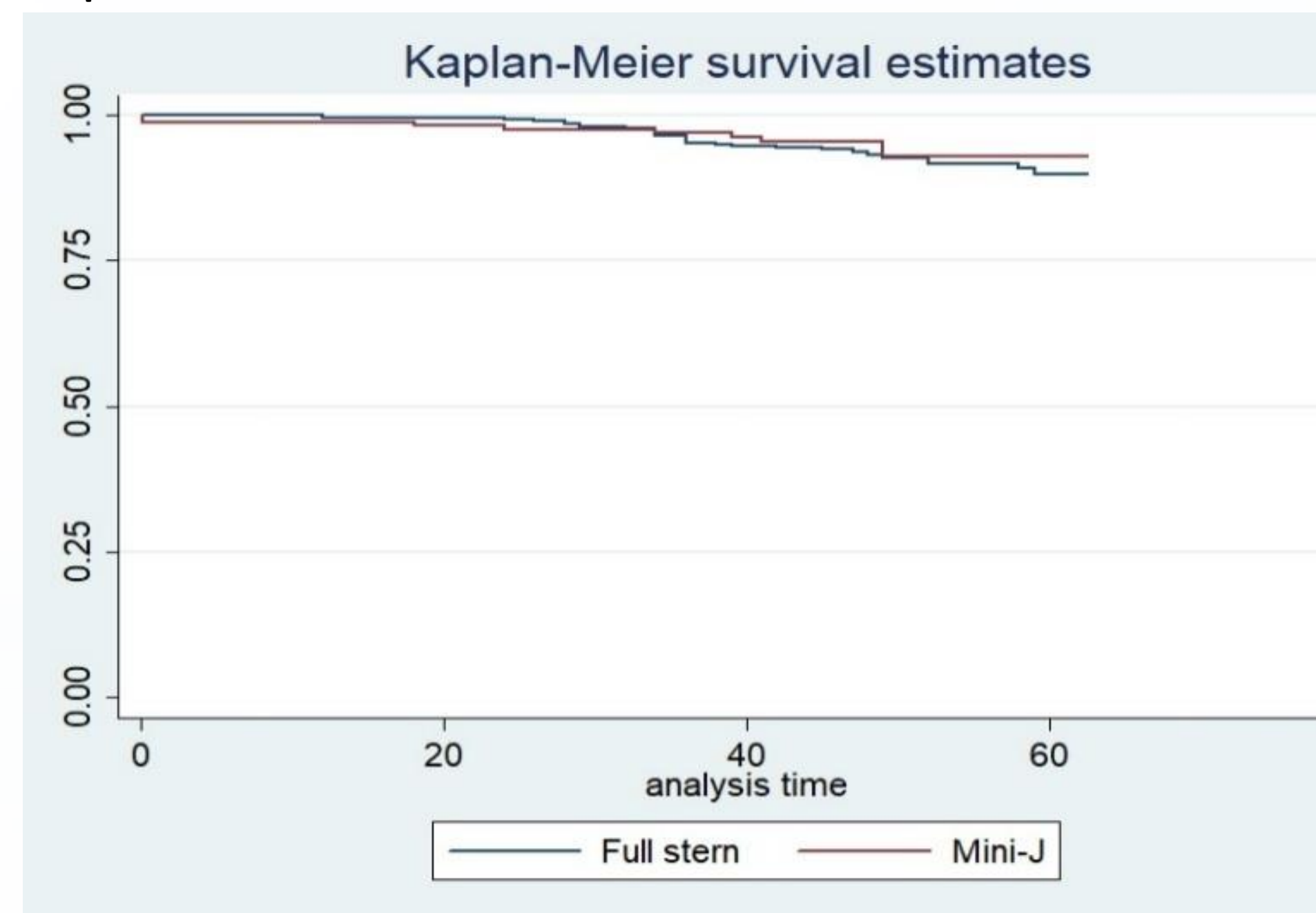
Hospital results:

Variable	Mini J (n – 341)	Control group standard sternotomy (n – 326)	p Value
Myocardial infarction	4 (1,2%)	5 (1,5%)	p = 0,582
Cerebrovascular accident	4 (1,2%)	6 (1,8%)	p = 0,204
Hemotransfusion	6 (1,7%)	29 (8,9%)	p = 0,007
Postoperative bleeding	3 (0,9%)	17 (5,2%)	p = 0,024
Wound infection	1 (0,3%)	3 (0,9%)	p = 0,544
Intensive care	1,3	1,3	p = 0,598
Hospitalization	7,4	9,8	p = 0,046
Hospital mortality	4 (1,2%)	5 (1,5%)	p = 0,242

Follow-up:

	Mini J	Control group standard sternotomy
Mean Follow-up	61,1 months (95% CI 51,6 – 66,4)	64,1 months (95% CI 54,6 – 67,4)

Kaplan-Meier survival curves for all-cause mortality



Mini J

36 months – 94,4% (95% CI 91,2–98,4)

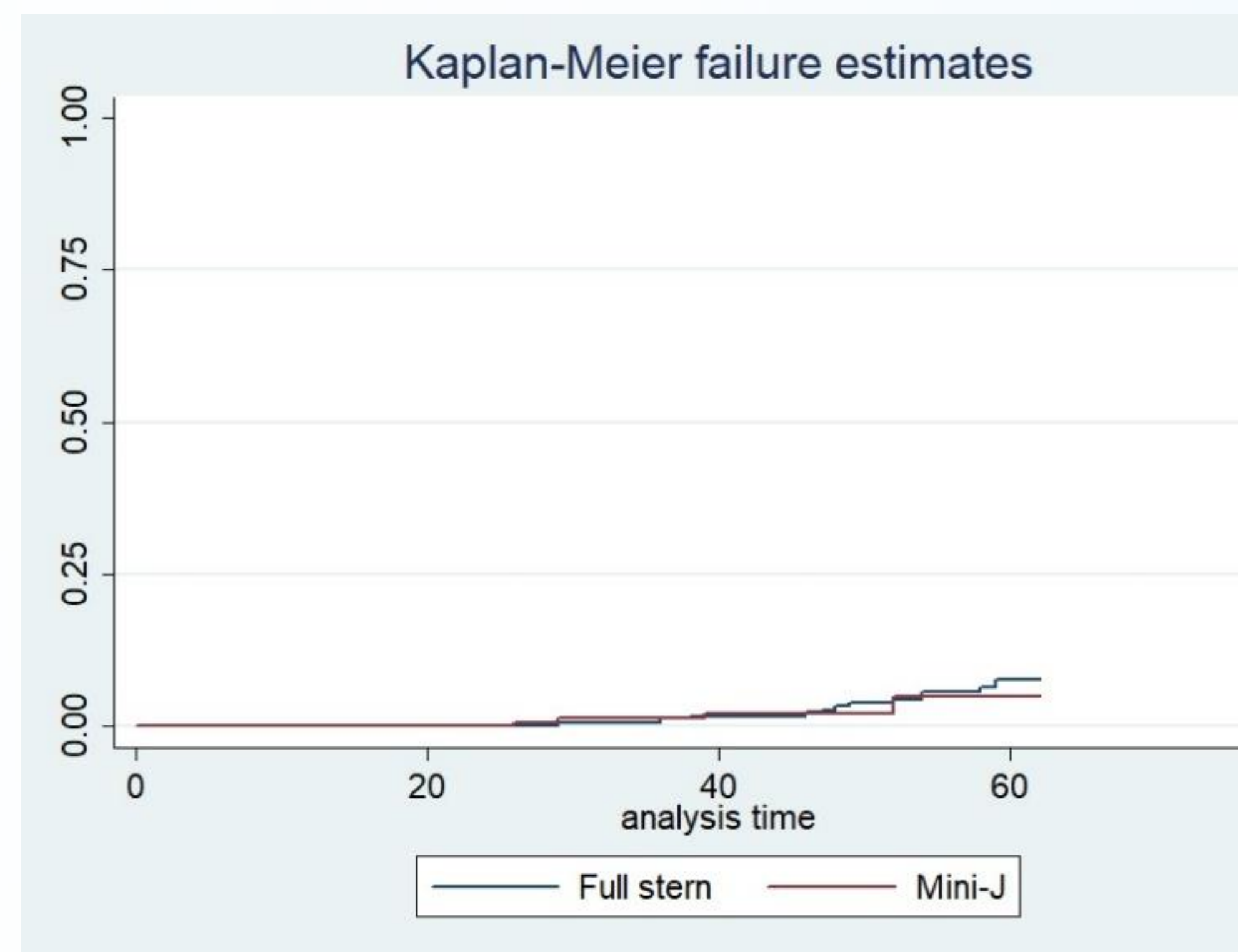
60 months – 89,3% (95% CI 86,9–97,4)

SAVR

36 months – 94,8% (95% CI 84,8–97,7)

60 months – 87,3% (95% CI 80,9–95,4)

Frequency from thromboembolic events.



Mini J

36 months – 1,2% (95% CI 0,8–2,7)

60 months – 7,7% (95% CI 4,8–12)

SAVR

36 months – 1,4% (95% CI 0,7–5,8)

60 months – 8,7% (95% CI 4–18,4)

Conclusion:

•Applying Mini-J sternotomy for surgical treatment isolated aortic valve lesion is safety and effective procedure who demonstrates good immediately and mid-term results.

•Mini-J approach reduced trauma of operation, thereby lower blood transfusions and risks of bleeding, by that shows comparable results of surgical treatment of patients with isolated aortic valve disease through the standard approach.

•Study limitation: retrospective and single center, long-term results are needed