



Totally Endoscopic Aortic Valve Replacement-Rheumatic Subset

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Background

- Totally endoscopic aortic valve replacement (TEAVR)
- Innovative
 - Minimally invasive surgical technique
 - Eliminates the need for a traditional sternotomy

Potential Benefits

- Reduced postoperative pain
- Shorter recovery time
- Improved cosmesis
- Similar Postoperative Cardiac Outcomes

Methods

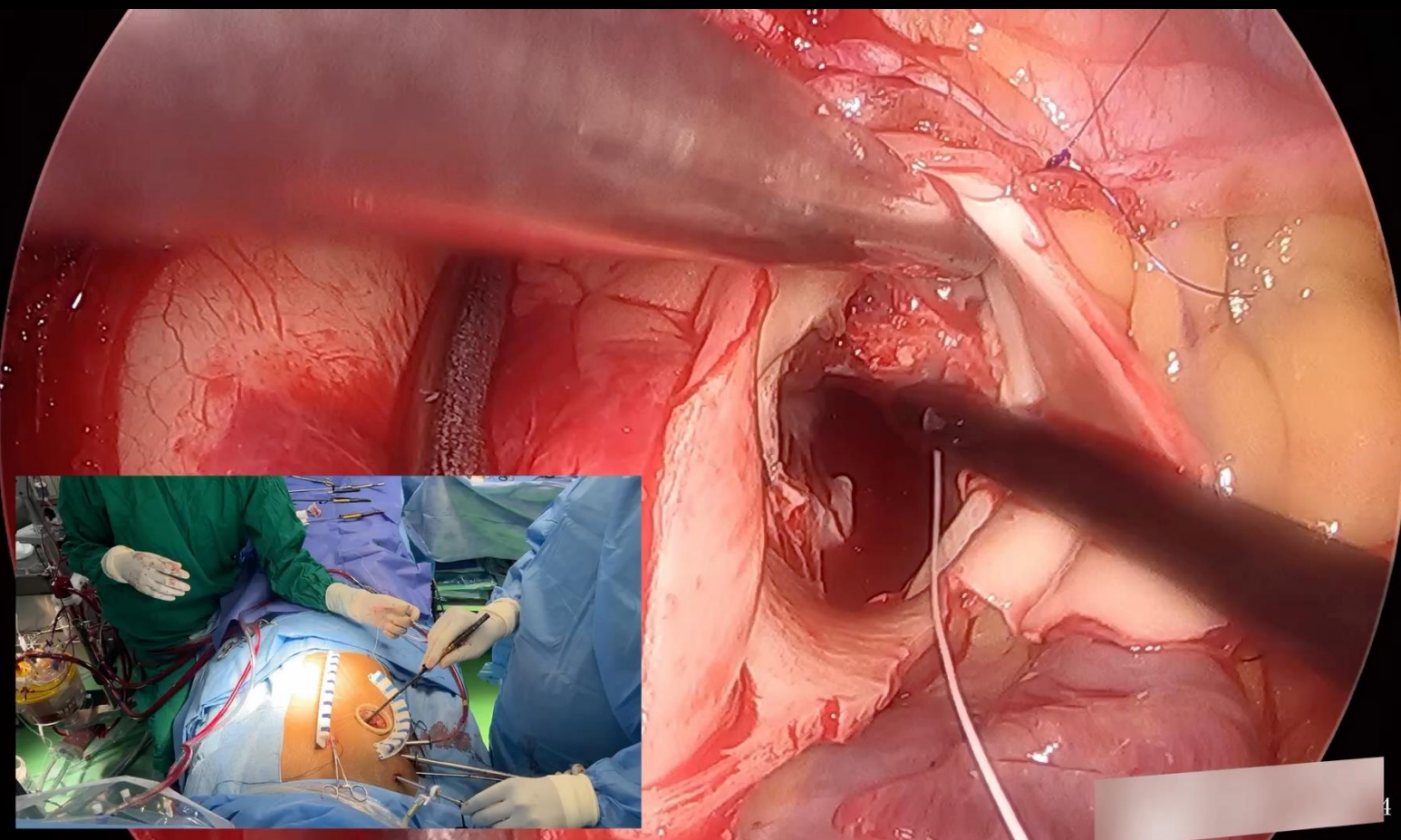
- Retrospective analysis
- 200 patients
- Age :18- 75 years
- Elective TEAVR
- April 2022 to March 2024
- Diagnosis of severe aortic stenosis or regurgitation
- Performed using a totally endoscopic approach, facilitated by 2 D imaging technique (1920 x1080 pixel)

Data Analysis

- SPSS 26
- Patient demographics
- Procedural details
- Immediate postoperative findings
- Short term postoperative outcomes at 1 week, 1 month, 3 month, 6 month, 9 month and 12 month

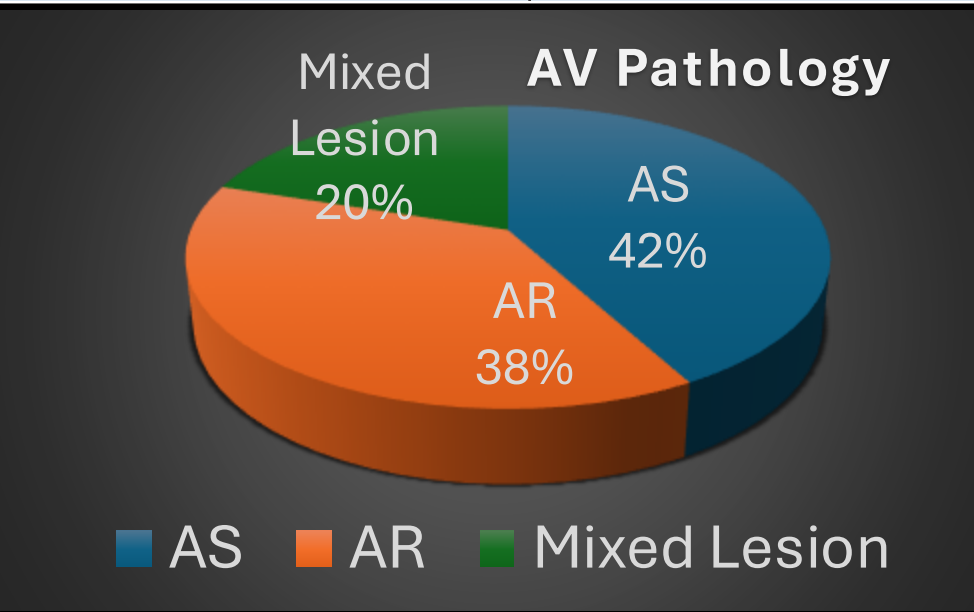
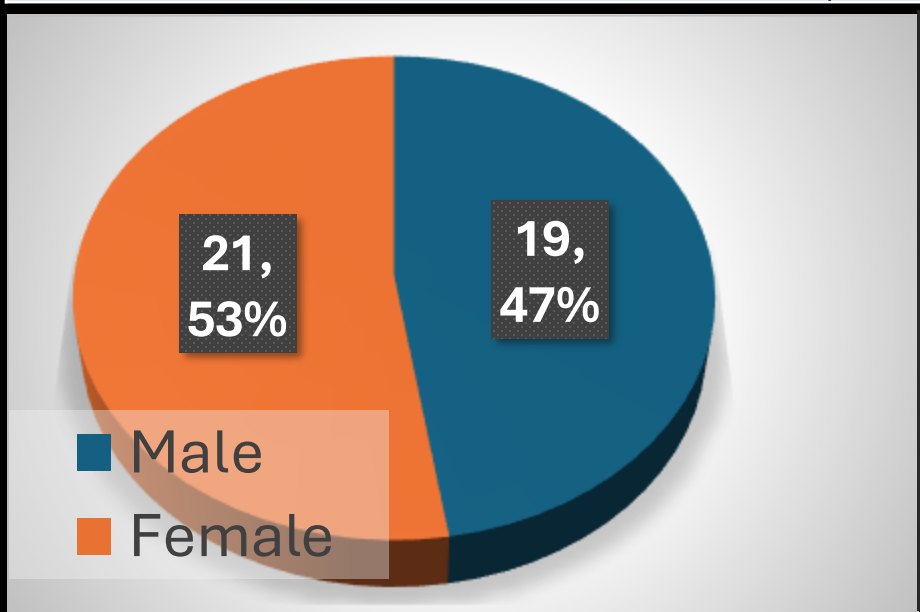
SURGICAL TECHNIQUES

- Multi-portal
- Peri-areolar Utility Port
- Peripheral CPB Access



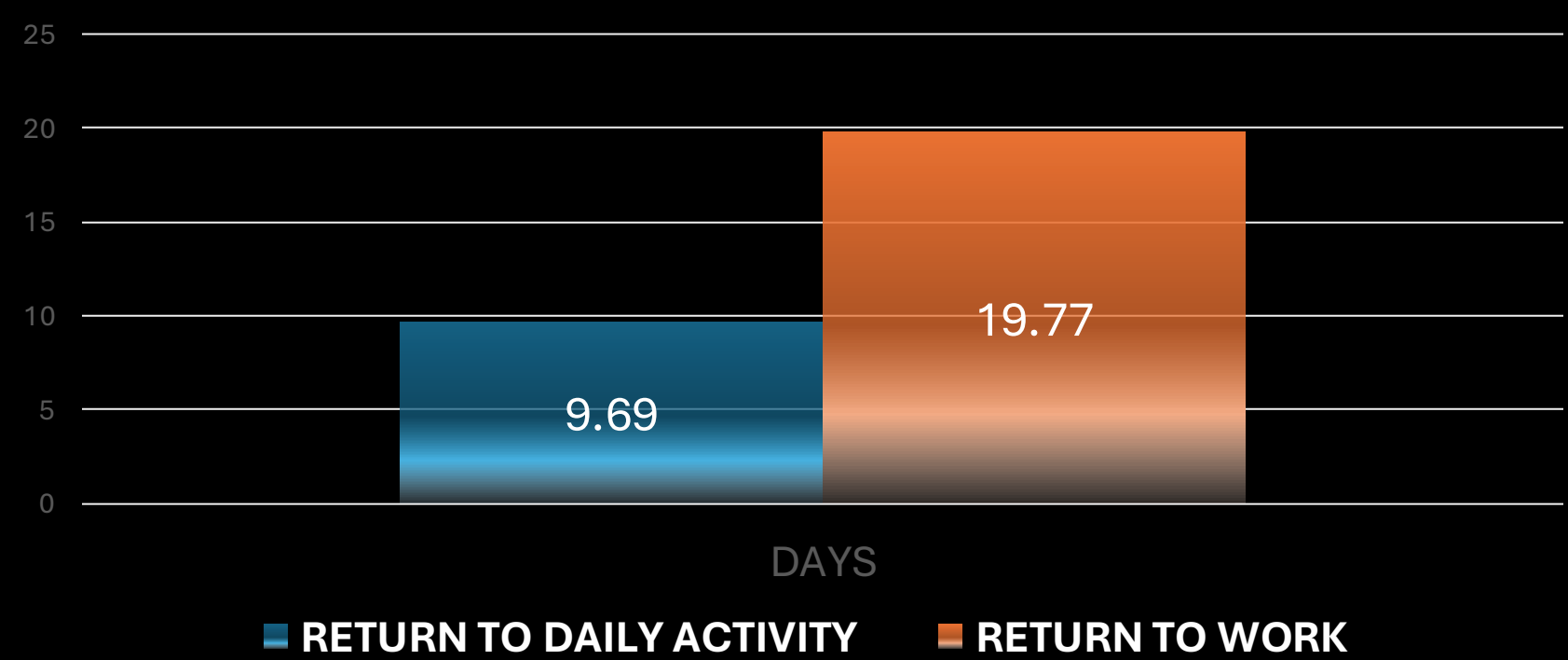
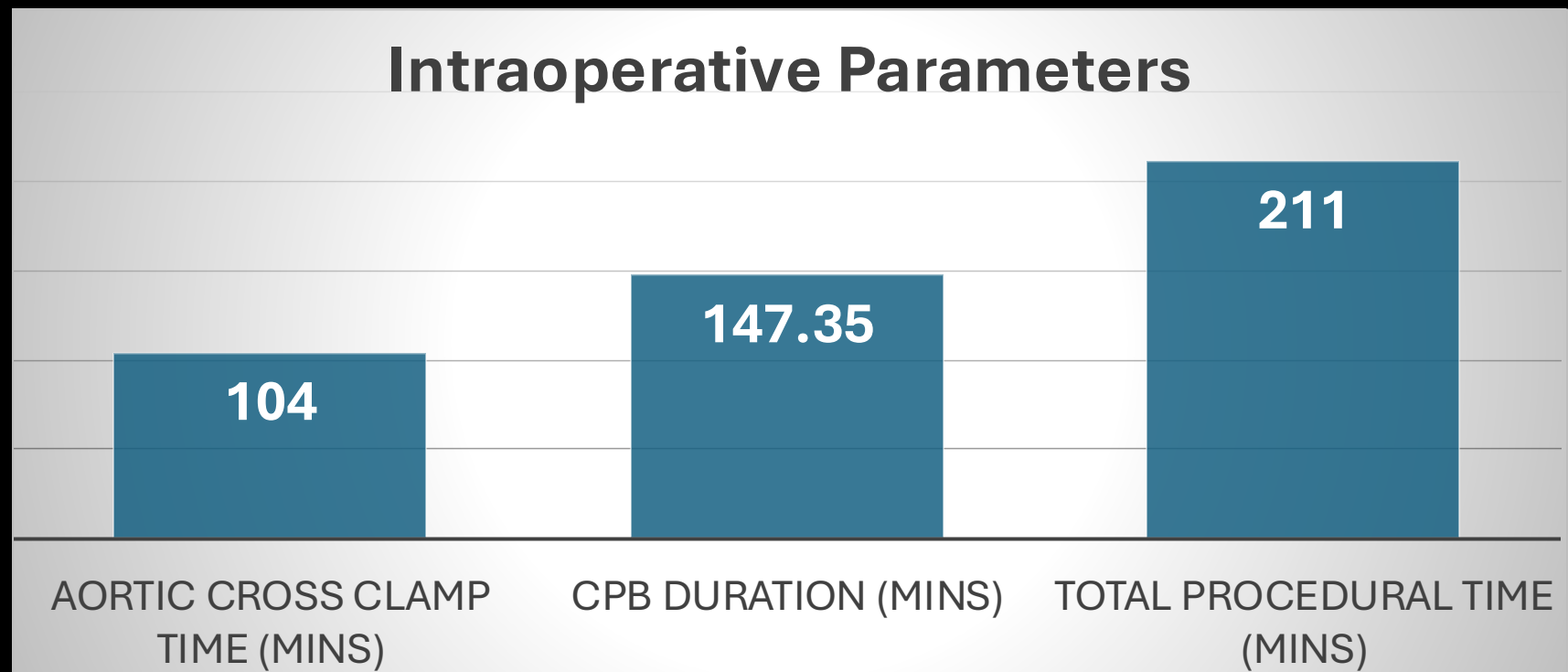
DEMOGRAPHIC PARAMETERS

Age (M+/- SD)	39.08+/-9.31	
BMI (Kg /m2) (M+/- SD)	21.02+/- 1.77	
CO-MORBIDITIES		
- HTN	89	45%
- DM (T2)	28	14%
- AF	22	11%
TYPES OF VALVES USED		
- MILTONIA	70	35%
- CARBOMEDICS	57	28%
- BICARBON	43	22%
- FLOMERO	15	7.5%
- PERIMOUNT MAGNA	11	06%
- RESILIA INSPIRIS	04	02%

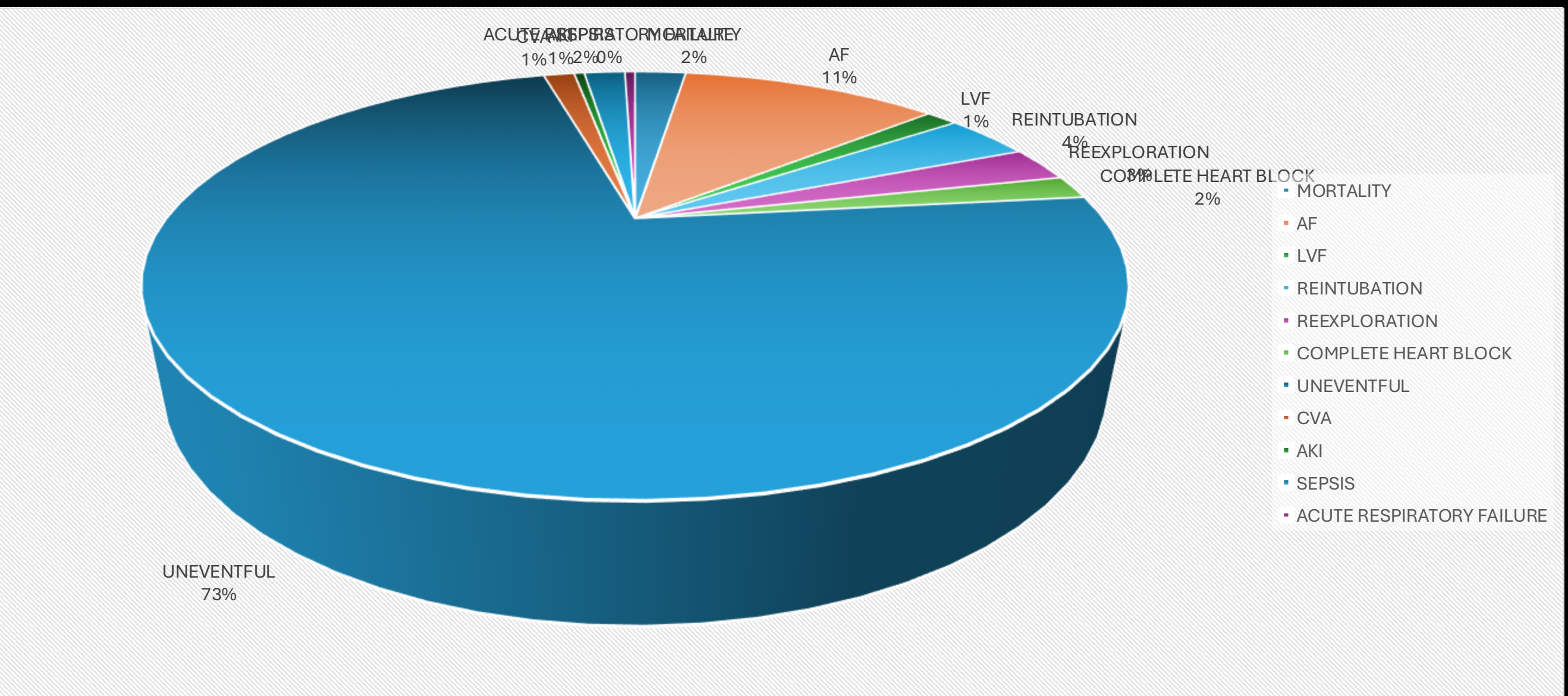


IMMEDIATE POST-OPERATIVE PARAMETERS

Ventilation Time (Hours)	6.67+/- 2.92
Length of ITU Stay (Days)	1.41+/-0.59
Length of Hospital Stay (Days)	2.90+/-0.80



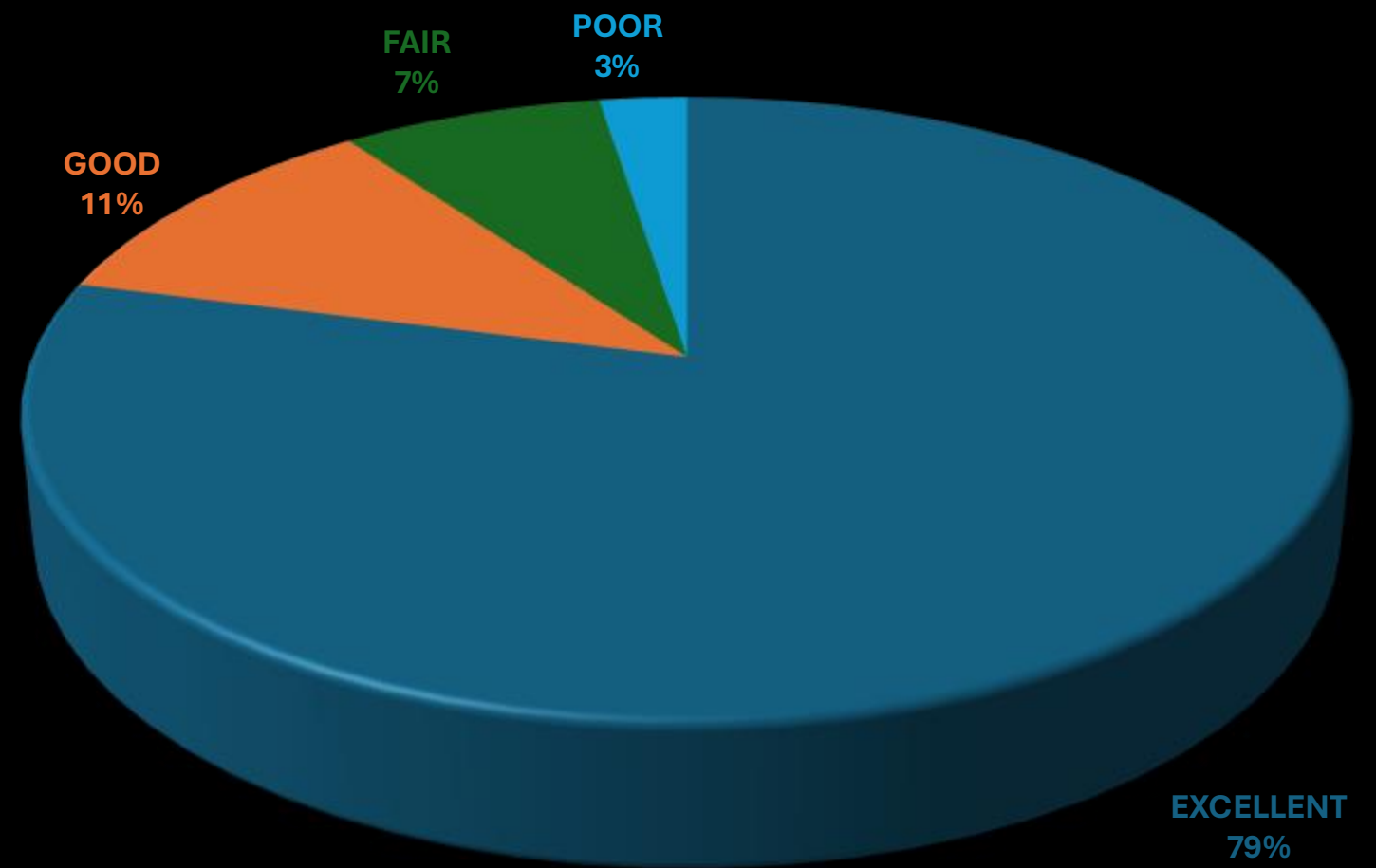
IMMEDIATE POSTOPERATIVE COMPLICATIONS



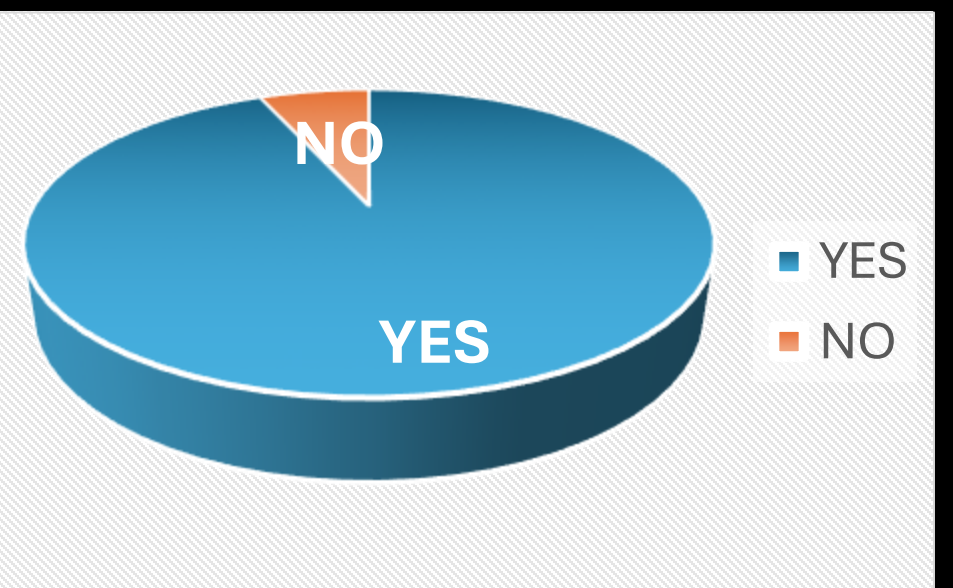
POSTOPERATIVE OUTCOMES

	1 WEEK	1 MONTH	3 MONTHS	6 MONTHS	9 MONTHS	12 MONTHS
LVEF	60.05 +/- 9.40	61.33+/- 9.32	62.45_/- 8.92	58.51+/- 8.90	61.51+/- 7.89	63.43+/- 6.78
Valve Thrombosis	NIL	NIL	NIL	NIL	1	NIL
Paravalvular Leakage	NIL	NIL	NIL	NIL	NIL	NIL
Mortality	1.5%	NIL	NIL	NIL	1.2%	1.7%
Major Adverse Cardiovascul ar Events	NIL	NIL	1.9%	NIL	2.6%	1.1%

ACCEPTABILITY OF COSMESIS



FEELING OF MYSELF



DISCUSSION

- TEAVR in Rheumatic cohort poses several surgical and anesthetic challenges
- Valves – fibrotic
 - commissural fusion -
 - demanding meticulous excision and sizing
- Only four conversions to sternotomy due to anatomical limitations or intraoperative complications
- Most notable observations
 - Early recovery profile
 - Short Mean ventilation time
 - Short ICU stay, and hospital length of stay
- Our 30-day mortality rate (1.5%) and stroke rate (1%) were comparable or better than large national registries of surgical AVR [3]
- Early echocardiographic data at discharge and follow-up confirmed adequate prosthesis function

CONCLUSION

- ✓TEAVR is a safe, feasible, and effective surgical option for patients with rheumatic aortic valve disease
- ✓ Despite the anatomical and pathological complexities associated with rheumatic valves, excellent perioperative outcomes were achieved with low rates of mortality, stroke, and surgical conversion
- ✓Substantial benefits of this approach in resource-constrained settings where rheumatic disease remains endemic
- ✓Our experience with 200 patients supports the integration of TEAVR into routine clinical practice for appropriately selected patients with rheumatic aortic pathology

References

1. Glauber M, Miceli A, Canarutto D, Murzi M. Minimally invasive aortic valve surgery: state of the art and future directions. Ann Cardiothorac Surg. 2015;4(1):26–32.
2. Dutta N, Vasudevan R, Bahuleyan S, Mohapatra R, Subramaniam G. Early outcomes of minimally invasive aortic valve replacement in a developing country: a single-centre experience. Indian J Thorac Cardiovasc Surg. 2021;37(1):71–77.
3. Brown ML, McKellar SH, Sundt TM III, Schaff HV. Ministernotomy versus conventional sternotomy for aortic valve replacement: a systematic review and meta-analysis. J Thorac Cardiovasc Surg. 2009;137(3):670–679.e5.
4. Carrel T, Englberger L, Schmidli J. Surgical treatment of rheumatic aortic valve disease: is there still a place in the era of transcatheter therapy? Eur J Cardiothorac Surg. 2016;49(5):1321–1327.