



Comparing minimal access and sternotomy approaches to surgical aortic valve replacement in Octogenarians in the TAVI era

M.Karuppannan, G.Laskawski, D.Rose, A.Walker, A.Bose, C.Raimondo, M.N. Bittar, J.Zacharias
Lancashire Cardiac centre, Blackpool Victoria Hospital, Blackpool, United Kingdom



Aims: As more people survive into their ninth decade, there is an increasing prevalence of aortic valve disease requiring intervention. This study sought to identify early and long term outcomes of minimally invasive surgical aortic valve replacement (MIS) in this selected patient group during the period of a TAVI option and compare it to the conventional sternotomy approach

Methods: A retrospective review of prospectively collected data from all patients aged 80-99 who underwent surgical aortic valve replacement between January 2010 and December 2021 were analysed.

Exclusion criteria: redo operations, concomitant aortic replacement or multi valve procedures were excluded.

Primary outcomes : 30-day mortality and morbidity

Secondary outcomes : one & 5-year survival.

Results: Out of the 355 patients (mean age 83.0 ± 2.7 years, Females 50.8%) who underwent surgical aortic valve replacement, 63 (18%) were done through minimal access approach (Hemisternotomy in 55.5% and right anterior mini-thoracotomy in 45.5%)

Characteristics	Sternotomy (292)	Hemi - Sternotomy (35)	ART (28)
Postoperative ICU stay (median)	1 (IQR 0)	1 (IQR 0)	1 (IQR 0)
Postoperative hospital stay (median)	9 (IQR 7)	8 (IQR 9)	7 (IQR 3)
30 day mortality	1.8%	5.7%	0
Wound infection	1.7 %	0	0
Reoperation for bleeding/tamponade	5.8%	2.8%	0
Stroke	2%	2.8%	0
Renal failure hemofiltration	3.7%	2.8%	0
Respiratory failure tracheostomy	2.7%	5.7%	0
Bowel ischemia	0.3%	2.8%	0
PPM implantation	4.40%	0	0

Subgroup analysis of patients who underwent AVR by ART approach showed no significant morbidities with nil in-hospital deaths although more numbers are required to extrapolate these findings.

Survival	Sternotomy	MIS
1 year	91.4 %	89 %
5 years	64.3 %	73 %

Conclusion: This study confirms surgical AVR by minimal access approach is safe in selected octogenarians with excellent outcomes comparable to the conventional sternotomy approach. There is a very acceptable mortality rate in the years after this procedure. In our experience the anterior right mini- thoracotomy approach is better tolerated by octogenarians but needs further evaluation.