Abstract id: 000986

Quality of Life during Five-Years of Follow-up after Minimally Invasive and Conventional Surgical Aortic Valve Replacement: Results from a Randomized Controlled Trial

Background / Study Objective

- Surgical aortic valve replacement through conventional median sternotomy is safe and associated with both an improvement in survival and quality of life.

- Minimally invasive aortic valve replacement is an equally safe alternative and associated with potential additional advantages because of the reduced surgical trauma. It is unclear what the impact of both procedures on longer-term quality of life is and what the predictors for improvement or deterioration in quality of life are.

- This randomized controlled trial aimed to compare postoperative improvement in cardiac-related quality of life during five years of follow-up after surgical aortic valve replacement by upper hemisternotomy and conventional median sternotomy.

Patients

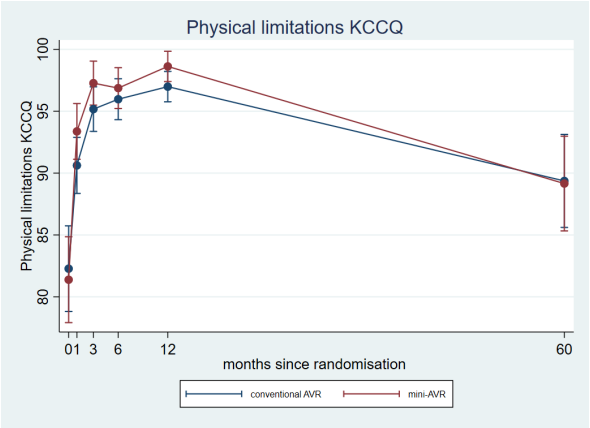
	Total group N=161	UHS N=80	Conventional SAVR N=81	P-value UHS *vs* conventional SAVR
Age	71.6±6.1	72.1±5.9	71.1±6.4	.31
Range, years	57–85	57–85	58–84	
Female sex	79 (49.1)	42 (52.5)	37 (45.7)	.39
Body mass index	28.1±3.9	28.1±4.2	28.1±3.7	> .99
Previous PCI	7 (4.3)	1 (1.3)	6 (7.4)	.06
Diabetes	34 (21.1)	18 (22.5)	16 (19.8)	.67
IDDM	1 (0.6)	0 (0)	1 (1.2)	
NIDDM	33 (20.5)	18 (22.5)	15 (18.5)	
Previous stroke	2 (1.2)	0 (0)	2 (2.5)	.16
Previous TIA	12 (7.5)	4 (5.0)	8 (9.9)	.24
Active smoker	16 (9.9)	10 (12.5)	6 (7.4)	.28
COPD	18 (11.2)	9 (11.3)	9 (11.1)	.79
Hypertension	91 (56.5)	44 (55.0)	47 (58.0)	.70
Severe pulmonary hypertension	2 (1.2)	2 (2.5)	0 (0)	
Severe kidney dysfunction	9 (5.6)	4 (5.0)	5 (6.2)	.84
NYHA III	40 (24.8)	18 (22.5)	22 (27.2)	.53
NYHA IV	3 (1.9)	3 (3.8)	0 (0)	.14
EuroSCORE II	1.38±0.7	1.41±0.8	1.35±0.6	.60

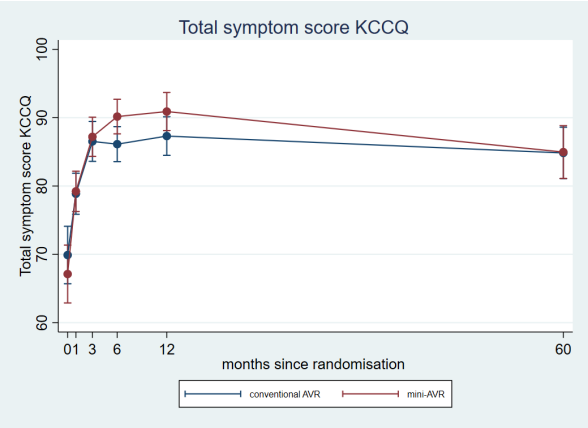
Patients were randomized 1:1 to surgical aortic valve replacement through either upper hemisternotomy or conventional sternotomy.

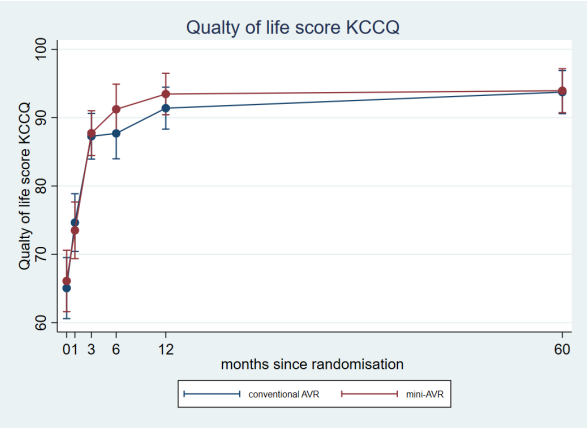
Methods

- Single-centre, open-label, investigator-initiated clinical trial randomized patients to upper hemisternotomy or conventional median sternotomy.
- Primary outcome was cardiac specific quality of life, measured with the Kansas City Cardiomyopathy Questionnaire during 5 years of follow-up.
- Secondary outcome were all other domains of the Kansas City Cardiomyopathy Questionnaire and survival.
- Predictors for change in cardiac specific quality of life between one- and five-years of follow-up were evaluated by multivariate linear regression analysis.

Results 1



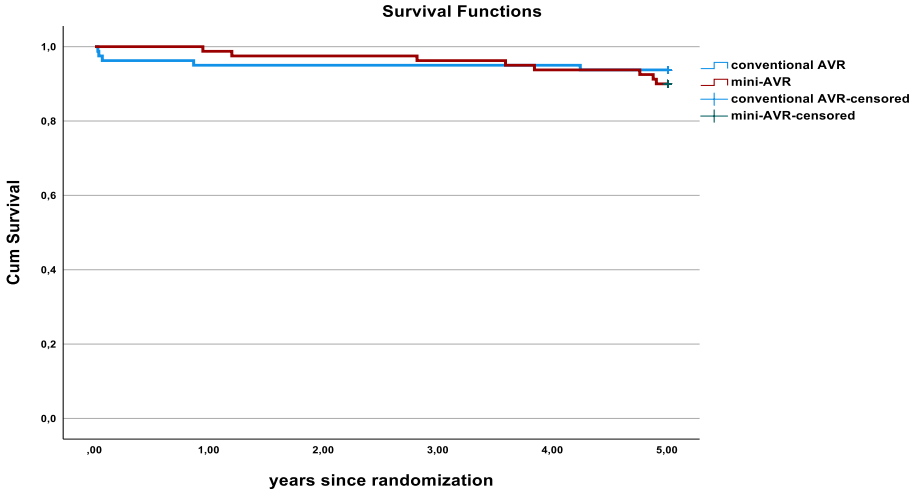




Quality of life sustainably improved after both surgical aortic valve replacement by upper hemisternotomy and conventional median sternotomy during at 5 years of follow-up.

Patients after upper hemisternotomy had significantly higher physical limitations and total symptoms domain scores, indicating better QoL (estimated mean difference respectively 1.72 points; p= .018 and 2.93 points; p=0.033).

Results 2



Overall survival at five years was 91.9% and did not differ between both approaches (p=0.417).

Baseline physical limitations (standardized beta: 0.35, p<.001) and age (standardized beta: -0.25, p=0.007) were significantly related to change in physical limitations domain score.

History of stroke was significantly related to change in total symptom domain score (standardized beta: -0.19, p=0.034).

Conclusions

- Survival and quality of life improvement after surgical aortic valve replacement by both upper hemisternotomy and conventional median sternotomy is excellent and proved sustainable during five years of follow-up.

- Patients after upper hemisternotomy had significantly higher physical limitations and total symptoms domain scores, indicating better quality of life.

- Greater baseline physical condition and younger age are associated with greater improvement in physical limitations up during longer-term follow-up.