Evaluation of patient-centered and clinical outcomes after minimally invasive cardiac surgery: an observational cohort study

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INTRODUCTION

Minimally invasive cardiac surgery (MICS) has grown in popularity in the last decades. It is suggested that minimally invasive cardiac surgery (MICS) facilitates **faster** recovery compared to conventional cardiac surgery. **Quality of recovery (QoR)** is a complex phenomenon covering many dimensions and has rarely been assessed in a broader perspective. Quality of Life (QoL) questionnaires fulfil the requirements for assessing late QoR (1 month to 1 year).

AIM

The primary aim of this study is to investigate **QoR after MICS**.

METHOD

· Prospective, mono-center, observational, cohort study
· All adult patients scheduled for an elective MICS
· Clinical outcomes and QoR were evaluated
  · at baseline
  · 14 days
  · 28 days
  · 90 days after surgery
· QoR was measured with both the **36-item Short Form survey (SF-36)** and **EuroQOL-5D (EQ-5D) questionnaire**

RESULTS

From November 25th, 2020 until October 31st, 2020, 193 patients were included.

Baseline characteristics were presented in table 1.

Clinical outcomes after MICS were shown in table 2.

Thirty days after MICS, QoL, measured with the EQ-5D questionnaire returned to baseline level (0.81 (0.21) vs 0.81 (0.34), p=1.00) after a decline 2 weeks after surgery (0.78 (024) vs 0.81 (0.34),p<0.001).
Moreover, 90 days after surgery, QoL was significantly improved compared to baseline (0.87 (0.21) vs 0.81 (0.34), p=0.04).

This improvement at 90 days after MICS is also observed in the physical and social functioning domains of the SF-36.

Table 1. Baseline characteristics

	Patients undergoing MICS N=193
Age (years)	69.03 ± 9.72
BMI (kg/m²)	27.40 ± 4.17
Gender (male / female)	146 (75.64%) / 47 (24.36%)
Euroscore II	2.19 ± 1.94
Smoking	
No	113 (58.55%)
Active	42 (21.76%)
Ex	38 (19.69%)
Diabetes Mellitus	
Type 1	4 (2.07%)
Type 2	44 (22.80%)
Arterial hypertension	130 (67.36%)
Profession	
Independent contractor	11 (5.70%)
Employed	18 (9.33%)
Unemployed	5 (2.59%)
Unable to work	11 (5.70%)
Retired	148 (76.68%)
Education	
Elementary school	20 (10.36%)
Lower secondary education	28 (14.50%)
Upper secondary education	91 (47.15%)
Higher education (not University)	35 (18.13%)
University	17 (8.80%)
PhD	2 (1.06%)

Data are presented as mean ± SD or frequencies (%)

Table 2. Clinical outcomes after MICS

CPB time (min)	97.12 ± 39.87
Clamping time (min)	59.64 ± 31.29
Ventilation time (min)	11.34 ± 32.70
Early Revision	10 (5.20%)
Late Revision	4 (2.07%)
ICU LOS (hours)	62.91 ± 95.87
Hospital LOS (days)	6.48 ± 7.26
30 day mortality	5 (2.59%)
90 day mortality	8 (4.14%)

Data are presented as mean ± SD or frequencies (%)

CONCLUSIONS

Besides a **good clinical outcome** after MICS, patients are recovering fast with a **return to baseline** levels already **30 days** after surgery and an **improvement in the Quality of Life 90 days** after surgery.