

Fully-endoscopic mitral valve surgery in obese patients

Background



Figure 1) Surgical setup for EMS

- Obesity may challenge surgeons performing fully-endoscopic mitral valve surgery (EMS) and affect clinical outcomes. Therefore, the aim of this study is to evaluate the outcome of pre-obese and obese patients undergoing EMS at our center.

Methods



Figure 2) BMI study groups

Variable	Group 1 (n=312)	Group 2 (n=226)	Group3 (n=67)	Group 1 vs. 2 p-value	Group 1 vs. 3 p-value
Age (years), mean ± SD	59.6±12.4	60.5±11.1	59.5±10.8	0.34	1.00
Male (%)	60.0	76.8	74.4	<0.01*	0.04*
COPD (%)	2.5	3.5	6.0	0.29	0.22
Prior stroke (%)	3.1	6.2	3.0	0.48	1.00
Dialysis (%)	0.6	0.4	0	1.00	1.00
LVEF (%), mean ± SD	57.8±11.8	56.8±14.9	56.7±9.2	0.39	0.53

Table 1) Baseline characteristics

- From 2015 –2021, 605 patients underwent EMS for mitral valve repair or replacement.
- Patients were stratified by BMI into 3 groups (Figure 2)
- Group 1 was considered control group in a comparative analysis.
- Patients with concomitant atrial ablation and left atrial appendage closure were included.

Results

Variable	Group 1 (n=312)	Group 2 (n=226)	Group3 (n=67)	Group 1 vs. 2 p-value	Group 1 vs. 3 p-value
Mitral valve repair (%)	92.3	93.8	91.0	1.00	0.81
Atrial ablation (%)	18.9	20.6	16.0	0.64	0.36
LAA occlusion (%)	20.5	32.9	26.9	0.25	0.26
CPBT (min), mean ± SD	162.8±45.1	183.2±60.9	178.9±50.9	<0.01*	0.01*
CCT (min), mean ± SD	97.6±34.6	109.1±39.2	107.4±36.8	<0.01*	0.04*
Stay ICU (d), mean ± SD	2.1±1.7	2.8±4.0	3.2±4.9	<0.01*	<0.01*
WHD (%)	0.3	0.04	1.5	0.68	0.58
Stroke (%)	0	0	0	1.00	1.00
Rethoracotomy (%)	5.9	7.1	7.5	0.68	0.58
Mortality (%)	0	0.9	1.5	0.65	0.17

Table 2) Procedural characteristics

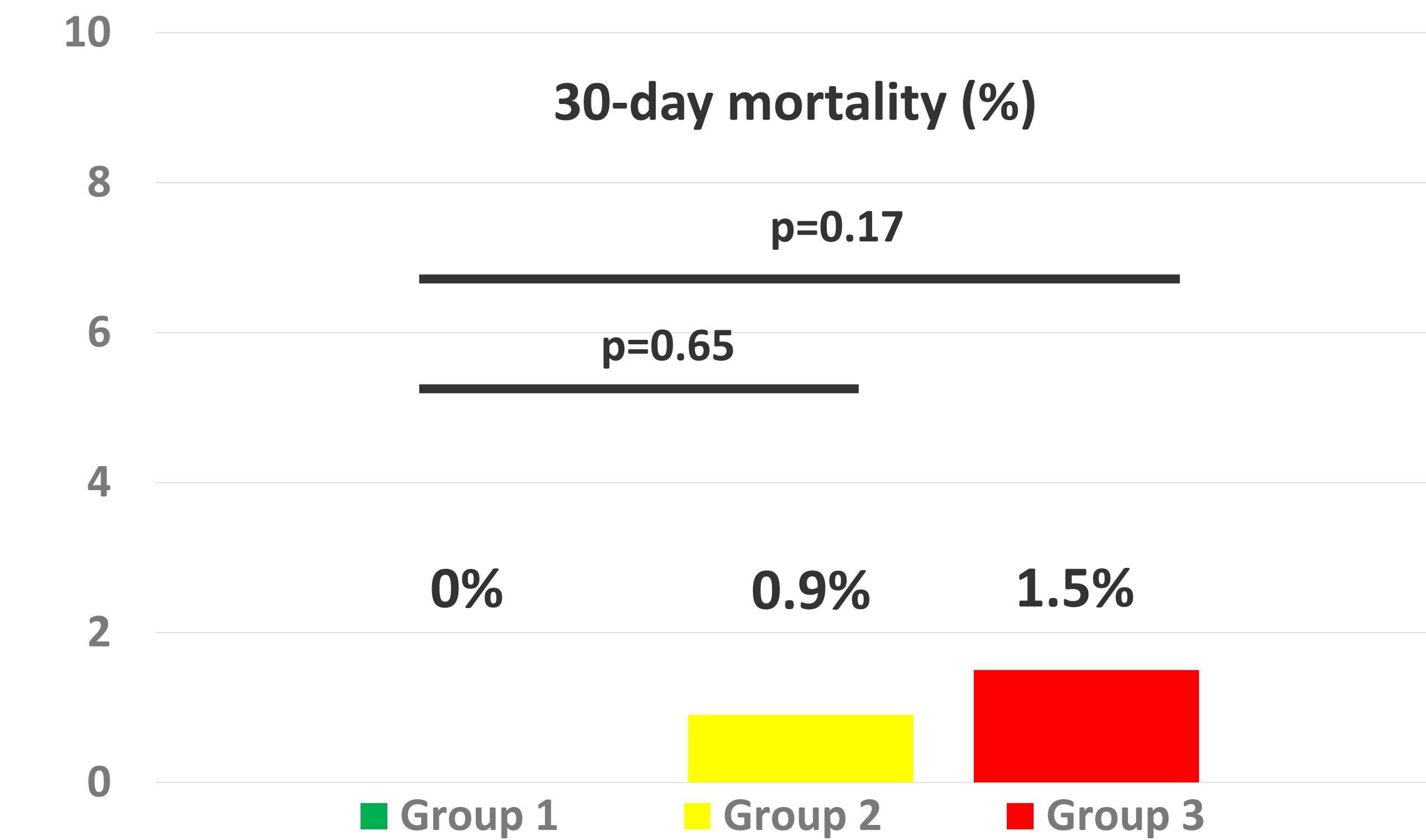


Figure 3) 30-day mortality

Severe mitral regurgitation was the main indication in the overall cohort (99%). There were no differences in the rate of concomitant atrial ablation between groups. Cardiopulmonary bypass time and cross clamp time were significantly lower in group 1 compared to group 2 and 3. ICU length of stay was also significantly longer in group 2 and 3. The overall rate of wound healing disorders was very low with no significant difference between groups. Stroke rate in the overall cohort was 0%. Rate of re-thoracotomy of group 1 showed no significant difference compared to group 2 and 3. Rates of mortality were very low in all groups and showed no significant differences.

Conclusion:

EMS can be safely performed in pre-obese and obese patients with similarly favourable clinical and hemodynamic results despite prolonged cardiopulmonary bypass and aortic cross-clamp times and duration of ICU stay.