



Results Of Minimally Invasive Thoracic Aortic Surgery In Obese Patients

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The authors declare no relevant conflict of interests regarding this poster



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Introduction

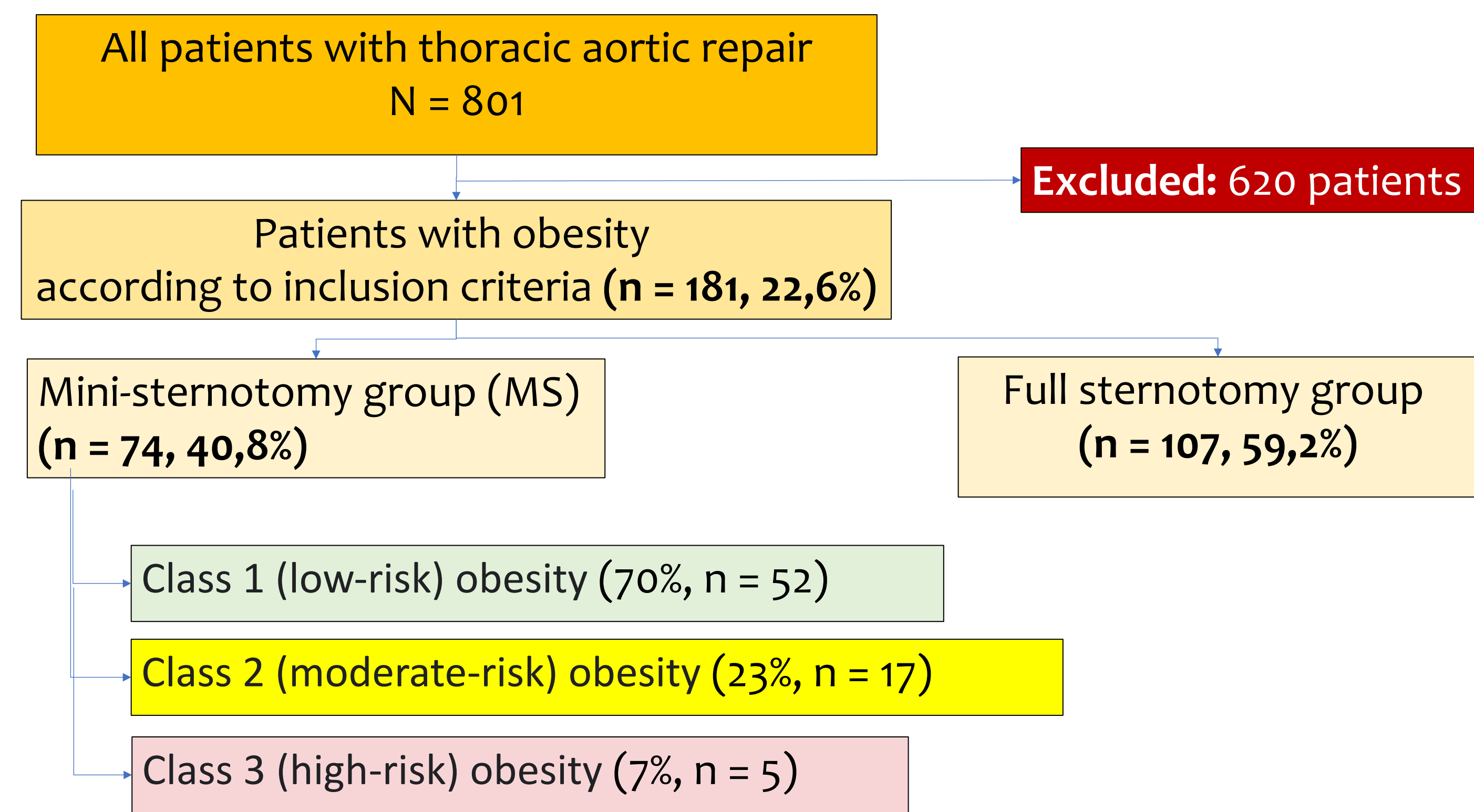
- ✓ There is no consensus on the effect of obesity on the outcomes of cardiac surgery
- ✓ Despite the fact that mortality does not increase in patients with obesity, many authors consider obesity to be a serious risk factor for complications such as RF, AKI, and wound infection (N Atalan, 2012)
- ✓ The authors also discuss the paradox of obesity as a factor reducing perioperative complications (ME Sabatino, 2022)
- ✓ Most of the studies are related to aortic valve surgery...

Aim

- ✓To evaluate the early results of minimally invasive thoracic aorta repair in obese patients in comparison with the conventional approach and depending on the degree of obesity

Patients

- ✓A total of 801 patients undergoing thoracic aortic repair
- ✓**Study period:** from 2016 to 2023 at single center experience
- ✓**Inclusion criteria:** obesity (BMI > 30 kg/m²)
- ✓**Exclusion criteria:** aortic arch and redo surgery, aortic dissection, AAS



Methods

✓Minimally invasive surgical approach included J-ministernotomy via 4th intercostal space and peripheral cannulation (femoral or right subclavian artery and femoral vein) or central cannulation

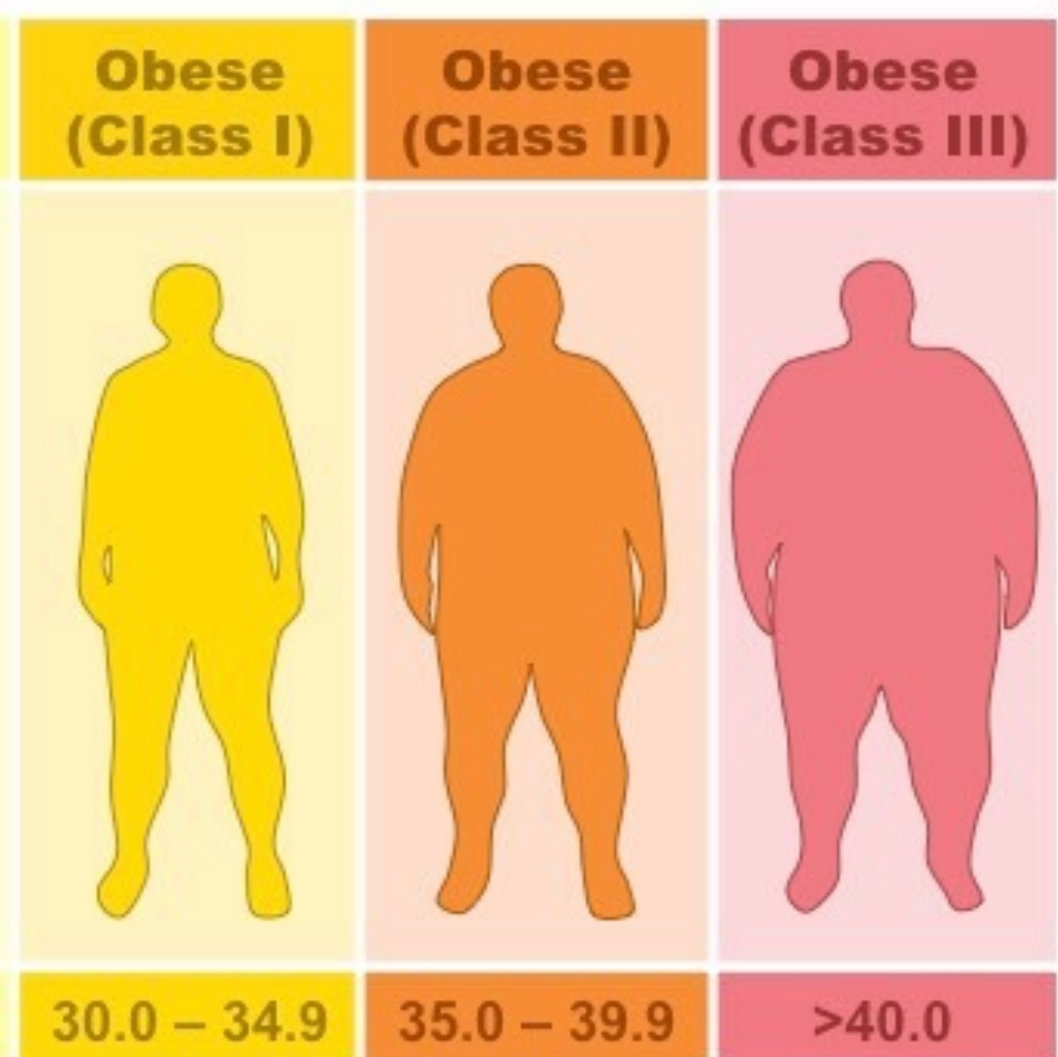
We compared

Full sternotomy vs mini-sternotomy

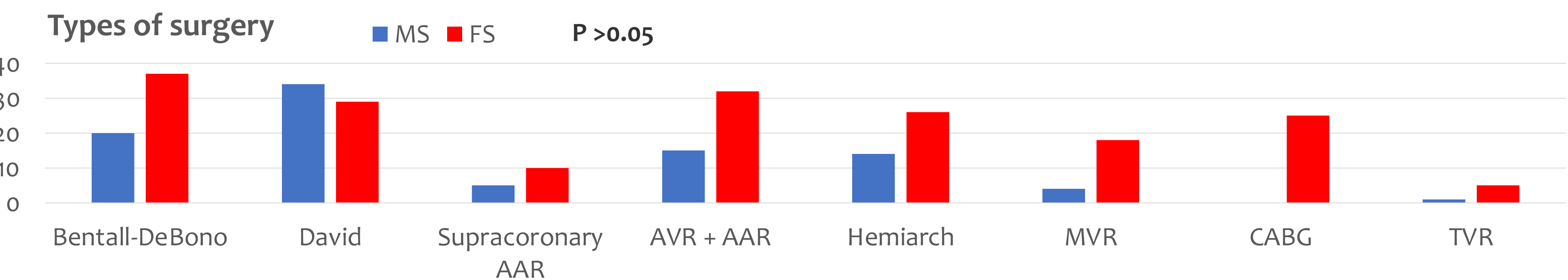


and

Results between different classes



Results



N(%), mean ± SD, Me (Q1-Q3)	MS (N = 74)	FS (N = 108)	P value
Age	58(49-66)	60(51-66)	0,62
BMI, kg/m ²	32.8(31.4-35.5)	33(31.2-35.5)	0,97
BSA, m ²	2.2(2-2.2)	2.2(2-2.3)	0,81
Female, n	26(35)	30 (27.7%)	1.00
Obesity (BMI >30)	74 (100)	108 (100)	
• Class 1, n	52(70)	78(72)	0,85
• Class 2, n	17(23)	25(23)	
• Class 3, n	5(7)	5(5)	
CTD, n	1(1,4)	2(1,9)	0,78
CAD, n	3(4)	25(23)	0.0003*
Hypertension, n	53(71,6)	100(92,6)	0.0001*
EF, %	57(54.9 - 61)	58 (54 - 61.8)	1
BAV, n	23(31)	8(7,4)	<0,01*
Peripheral atherosclerosis, n	17(23)	26(24)	0,8
Oncology	6(8,1)	10(9,3)	1
Stroke	2(2,7)	8(7,4)	0.2044
COPD	14(18,9)	32(29,6)	0.1024
Diabetes	8(10,8)	15(13,9)	0.5393
Chronic renal failure, n	17(23)	26(24)	0,8

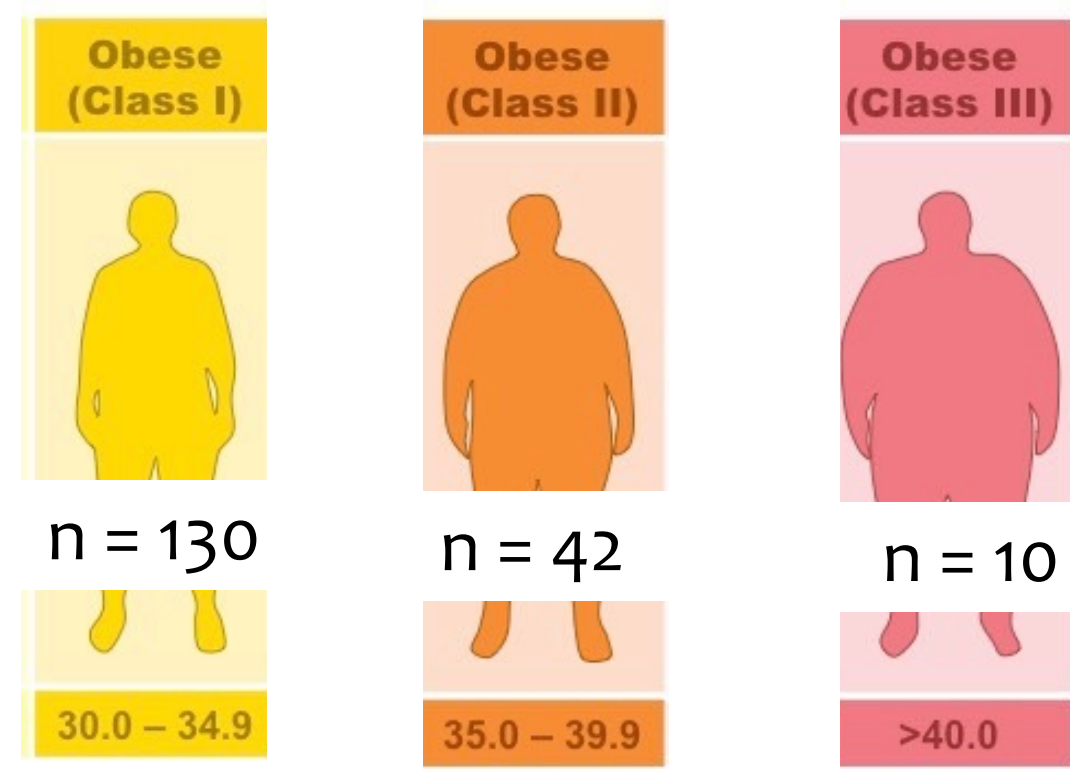
✓Primary endpoints were in-hospital mortality, blood loss, complications, intensive care unit stay, hospital stay, 30-day survival

Data are expressed as mean ± standard deviation (SD), or as median and range. The two-tailed unpaired t-test was used to compare continuous values. For categorical variables, the two sided χ^2 -test or Fisher's exact test were used to assess differences between two groups. The threshold of significance was set at P < 0.05

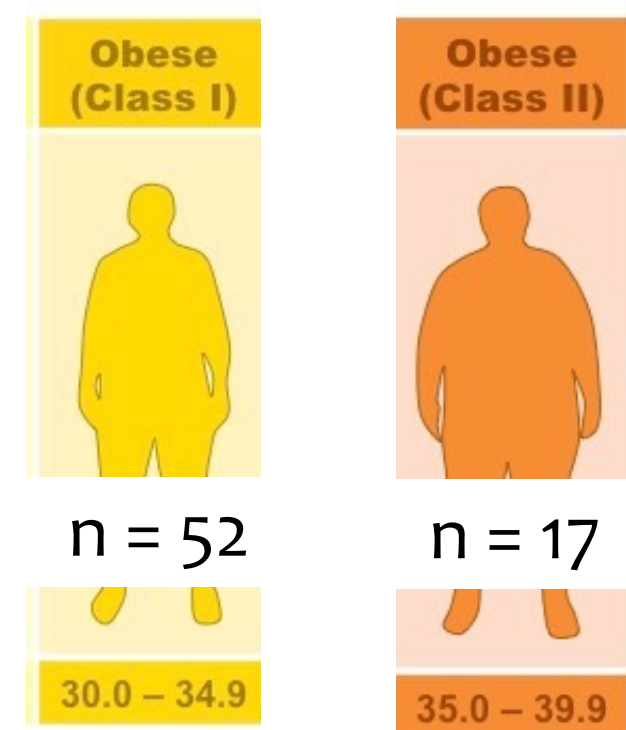
N(%), mean ± SD, Me (Q1-Q3)	MS (N = 74)	FS (N = 108)	P value
CPB, min	133(99 - 168,5)	↓ 114(85,7 - 158,7)	0,01*
Aortic cross clamp, min	92(69,3 - 120)	83(64 - 110)	0,18
Blood loss, ml	↓ 750(600 - 1000)	800 (650 - 1000)	0.05*
Operation time, min	296.5 (242.7 - 331)	↓ 261.5 (235 - 328)	<0,001*
ICU stay, days	1(1 - 1)	1(1 - 3)	0,01*
Hospital stay, days	7(7-7,8)	10,5(9,7-18)	<0,001*
Ventilation, min	6(5 - 9)	7(5 - 10)	0,05*
Drainage loss (2 days), ml	↓ 300(258 - 425)	500(340- 708)	0,05*
Respiratory failure, n	5 (6,7)	12(11,1)	0.4387
Stroke, n	1(1,3)	2(1,9)	1
AKI, n	0	3(3,8)	0.2722
SWI, n	0	2(1,9)	1
DWI, n	1(1,3)	1 (0,9)	1
Prosthesis infection, n	1(1,3)	0	1
Sepsis, n	2(2,6)	3(3,8)	1
Hospital mortality,n	1(1,3)	3(3,8)	0.6471
30-day survival, n	73 (98,6)	103(95,3)	

✓No conversion cases and re-intervention on thoracic aorta

Overall significant effect of obesity class on results



Significant effect of obesity class in MS group



	Obese (Class I)	Obese (Class II)	Obese (Class III)	p
CPB, min	121.5 (92 -160)	126.0 (93-163)	↑ 151 (109 - 212)	0,05*
Blood loss, ml	800(600-1000)	775(600-1000)	↑ 1000 (833-1083)	0,15
ICU, days	1 (1 - 1.6)	1 (1 - 2)	1(1 - 3)	0,83
Hospital, days	12 (10 - 15)	12 (10 - 16)	14 (10 - 15)	0.136
Respiratory failure	7(5,4%)	6(14,2%)	4(40%)	0,02*

	Obese (Class I)	Obese (Class II)	p
CPB, min	109 (85 - 158)	↑ 126 (108 - 158)	0,69
Aortic X-clump, min	84,5 (64 - 110)	92 (70-125)	0,49
Blood loss, ml	750(600 - 908)	750(640-1000)	0,87
Operation time, min	261 (239 - 290)	331 (274-350)	0,18
ICU stay, days	1 (1 - 1.1)	1 (1 - 1.8)	0,13
Hospital stay, days	12 (10 - 15)	12 (10 - 16)	0.13

Conclusions

✓Minimally invasive treatment of thoracic aortic pathology is safe and offers advantages for obese patients compared to traditional techniques

✓In obese patients, minimally invasive treatment should be considered, regardless of the degree of obesity, due to the potential benefits, including faster recovery. however, in the high class obesity results may be worse