

BACKGROUND: THIS STUDY ASSESSED THE OUTCOME OF ENDOSCOPIC MITRAL VALVE SURGERY COMPARED TO CONVENTIONAL STERNOTOMY APPROACH IN ELDERLY PATIENTS

METHODS: retrospective study using prospectively collected data from January 2007 to November 2021, 647 patients underwent isolated mitral valve surgery at our institution (sternotomy, n = 440; minimally invasive, n = 207). Propensity score match analysis to create comparable risk group in the sternotomy and endoscopic mitral was performed. Patients were matched regarding their age, gender, severity of their symptoms (angina and dyspnoea), logistic EuroScore, diabetes, left ventricular ejection fraction, history of stroke, extra cardiac arteriopathy and preoperative atrial fibrillation. The caliper was tightened till the matching set did not display any significant imbalance. Matching was performed using the nearest neighbour algorithm with a caliper distance of 0.1. Clinical outcomes included bypass and cross clamp time, length of hospitalization, morbidity, mortality and discharge location were analysed in the matched data set

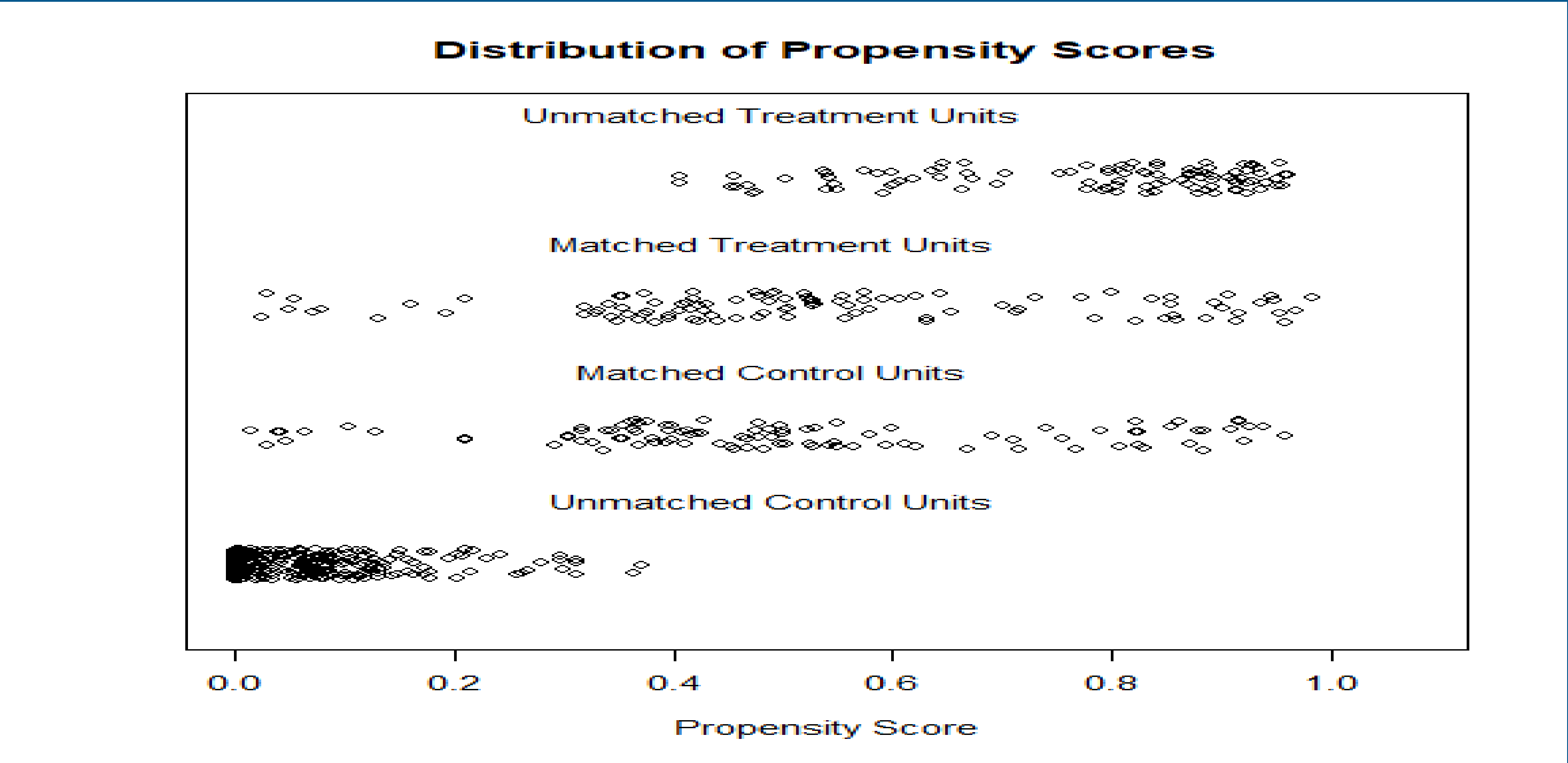


Table 1: patients” characteristics

Variables	Unmatched Sternotomy(n=440)	matched Minimal invasive (n=207)	P value	sternotomy (n=105)	Minimal invasive (n=105)	P value
Age	76.3 +/- 4.5	76.5 +/- 4.6	P=0.3	75.9 +/-4.4	76.1+/- 4.6	P=0.37
Gender (Female)	254 (57.7%)	103(49.8%)	P=0.047	56 (53.3%)	48 (45.7%)	P=0.27
BMI	26.6+/- 7.7	25.8+/-4.9	P=0.05	25.3 +/- 4.1	25.6 +/- 4	P=0.29
CCS grade III/IV	29 (6.6%)	0 (0%)	P<0.001	0 (0%)	0 (0%)	P=1
NYHA grad III/IV	272 (61.8%)	0 (0%)	P<0.001	6 (5.7%)	0(0%)	P=0.014
HTN	283 (64.3%)	133 (64.3%)	P=0.98	68 (64.8%)	68 (64.8%)	P=1
CVA	22 (5%)	11 (5.3%)	P=0.39	4 (3.8%)	5 (4.8%)	P=0.69
COPD	53 (12%)	26 (12.6%)	P=0.85	11 (10.5%)	14 (13.3%)	P=0.52
Hx of MI	36 (8.2%)	26 (12.6%)	P=0.078	7 (6.7%)	14 (13.3%)	P=0.1
Prior cardiac surgery	46 (10.5%)	36 (17.4%)	P=0.013	11 (10.5%)	20 (19%)	P=0.08
Renal function/dialys is	13 (3%)	4 (1.9%)	P=0.44	1 (1%)	2 (1.9%)	P=0.56
Extracardiac arteriopathy	27 (6.1%)	12 (5.8%)	P=0.86	8 (7.6%)	6 (5.7%)	P=0.58
Pre op AF	239 (69.5%)	105 (50.7%)	P=0.39	54 (51.4%)	49 (46.7%)	P=0.52
Urgent surgery	65 (14.8%)	13 (6.3%)	P=0.002	9 (8.6%)	7 (6.7%)	P=0.6
Diabetes	56 (12.37%)	19 (9.2%)	P=0.18	12 (11.5%)	11 (10.5%)	P=0.825
Poor LVEF (EF<30%r)	22 (5%)	0 (0%)	P=0.003	0 (0%)	0 (0%)	P=1
Logistic EuroScore	13.4 +/- 12.6	10.5+/-10.	P<0.001	10.47 +/-9.6	11.9 +/- 10.2	P=0.14

Table 2: operative and post operative characteristics

Variables	Sternotomy(n=105)	Minimal invasive (n=105)	P value
CPB time	160.37 +/-58.9	162.7 +/- 39.6	P=0.36
Cross clamp time	114.5 +/- 42.9	86.23 +/- 49	P<0.001
Mitral valve repair	67 (63.8%)	75 (71.4%)	P=0.23
AF ablation	25 (23.8%)	25 (23.8%)	P=1
Intubation >12 hours	52 (49.5%)	15 (14.3%)	P<0.001
ICU LoS	2.65 +/- 9.3	1.45 +/- 2.8	P=0.1
LoS post op	15.3 +/- 16.3	8.7 +/- 8.3	P<0.001
GI complications	5 (4.8%)	1 (1%)	P=0.09
Respiratory complications	14 (13.3%)	10 (9.5%)	P=0.38
Neurological complications	6 (5.7%)	4 (3.8%)	P=0.51
MI	0 (0%)	0 (0%)	P=1
Arrhythmias	37 (35.3%)	14 (13.3%)	P<0.001
Renal failure (new dialysis)	3 (2.9%)	1 (1%)	P=0.31
Return to theatre	9 (8.6%)	3 (2.9%)	P=0.12
mortality	3 (2.9%)	2 (1.9%)	P=0.65
Discharge distention (convalescence/ other acute care)	10 (9.5%)	4 (3.8%)	P=0.09

RESULTS: Although there was no significant different in bypass time between the two groups, cross clamp was significantly lower in endoscopic mitral patients (P <0.001), and this attributed to the present of patients group who were operated on beating heart. Endoscopic mitral surgery was associated with shorter ventilation time (P<0.001) shorter hospitalisation (P<0.001), and post operative arrhythmia (P<0.001). There were no significant differences in rate of other major postoperative complications or mortality rate (P =0.65).

CONCLUSIONS: Endoscopic approach in mitral valve surgery in elderly patients group associated with less post operative arrhythmia, shorter ventilation time, shorter hospitalization, and less post operative arrhythmia with no increased risk in other major post operative morbidity and mortality