

Sex-based Differences in Outcomes after Robotic Minimally Invasive Direct Coronary Artery Bypass: A Single Center Retrospective Review

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Introduction	Results*							
Following coronary artery bypass grafting (CABG) women experience: Higher 30-day mortality Higher complication rates Longer length of stay	Baseline Characteristics	Male (n=987)	Female (n=538)	p-value	Outcomes & Hospital Course	Male	Female	p-value
	Age (years)	67 ± 11	67 ± 11	0.516	Mortality (30-day)	15 (1.5%)	9 (1.7%)	0.818
	White	872/939 (93%)	471/525 (90%)	0.036	Readmission (30-day)	104 (11%)	75 (14%)	0.049
	Black	44/939 (5%)	48/525 (9%)	0.001	Total Hospital LOS (days)	7.5 ± 5.3	8.0 ± 5.0	0.062
The aim of this study was to determine whether the disparities observed in traditional sternotomy CABG persist in robotic minimally invasive direct coronary artery bypass (MIDCAB).	Hispanic/Latino	18/940 (2%)	7/513 (1%)	0.441	Postoperative LOS (days)	5.5 ± 3.9	6.0 ± 3.9	0.018
	BMI (kg/m²)	29.6 ± 5.9	30.5 ± 7.0	0.006	Initial ICU Hours	57.2 ± 64.7	53.2 ± 50.1	0.222
	Diabetes	459 (47%)	254 (47%)	0.791	ICU Readmission	22 (2%)	15 (3%)	0.498
	Hypertension	917 (93%)	507 (94%)	0.318	Total ICU Hours	59.6 ± 72.9	55.5 ± 54.5	0.261
	Dialysis	32 (3%)	14 (3%)	0.485	Total Ventilator Hours	7.5 ± 43.6	7.0 ± 31.2	0.788
	Liver Disease	25 (3%)	10 (2%)	0.401	Surgical Site Complications (30-day)	0 (0%)	5 (1%)	0.005
	Chronic Lung Disease	451 (46%)	234 (43%)	0.409	Plan for Postoperative PCI	81 (8%)	38 (7%)	0.426
	Home Oxygen	19 (2%)	16 (3%)	0.191	In-Hospital Complications			
	Current/Former Smoker	594 (60%)	250 (46%)	<0.001	Cardiac Arrest	9 (1%)	3 (1%)	0.454
	Peripheral Artery Disease	142 (14%)	66 (12%)	0.249	New Atrial Fibrillation	195/850 (23%)	95/487 (20%)	0.143
	Cerebrovascular Disease	238 (24%)	181 (34%)	<0.001	Prolonged Ventilation	32 (3%)	13 (2%)	0.363
	Prior Cerebrovascular Accident	83 (8%)	64 (12%)	0.028	Pneumonia	19 (2%)	11 (2%)	0.872
	Prior Myocardial Infarction	443 (45%)	234 (43%)	0.602	Pleural Effusion Requiring Drainage	48 (5%)	57 (11%)	< 0.001
	Cardiac Arrhythmia	179 (18%)	60 (11%)	<0.001	Pneumothorax Requiring Intervention	9 (1%)	7 (1%)	0.476
	Atrial Fibrillation	137 (14%)	51 (9%)	0.013	Blood Use During/After Procedure	74 (7%)	50 (9%)	0.220
	Ejection Fraction < 50%	261/979 (27%)	90/532 (17%)	<0.001	Sepsis	5 (1%)	0 (0%)	0.169
	Ejection Fraction < 30%	53/979 (5%)	13/532 (2%)	0.007	Stroke	12 (1%)	3 (1%)	0.213
	Multivessel Disease	729 (74%)	361 (67%)	0.005	Renal Failure	21 (2%)	9 (2%)	0.541
	Prior PCI	321 (33%)	139 (26%)	0.007	New Dialysis	9 (1%)	5 (1%)	0.973
	Primary Presentation				Cardiac Reoperations	23 (2%)	12 (2%)	0.901
STEMI, NSTEMI, or Unstable Angina	526 (53%)	302 (56%)	0.287	Non-Cardiac Reoperations	4 (<1%)	4 (1%)	0.382	
Stable Angina or Equivalent	380 (39%)	212 (39%)	0.729	Unplanned PCI	8 (1%)	4 (1%)	0.887	
No Coronary Symptoms	63 (6%)	18 (3%)	0.012	Discharge Status & Location				
Other	18 (2%)	6 (1%)	0.288	Died in Hospital	7 (1%)	6 (1%)	0.410	
Operative Variables				Discharged Home	896 (91%)	464 (86%)	0.006	
Elective Surgery	508 (51%)	252 (47%)	0.084	Discharged to SNF or IRF	76 (8%)	68 (13%)	0.002	
Urgent Surgery	479 (49%)	286 (53%)	0.084	Discharged to Hospice	2 (<1%)	0 (0%)	0.543	
OR Time (hours)	4.2 ± 0.8	4.2 ± 0.9	0.153	Discharged to Other	2 (<1%)	0 (0%)	0.543	
*Count (%) or mean ± standard deviation. <i>Abbreviations:</i> BMI = body mass index; ICU = intensive care unit; IRF = inpatient rehabilitation facility; LOS = length of stay; MIDCAB = minimally invasive direct coronary artery bypass; NSTEMI = non-ST-elevation myocardial infarction; OR = operating room; PCI = percutaneous coronary intervention; SNF = skilled nursing facility; STEMI = ST-elevation myocardial infarction.				Left Against Medical Advice	4 (<1%)	0 (0%)	0.304	

References: 1. The Society of Thoracic Surgeons and Duke Clinical Research Institute. *The Society of Thoracic Surgeons Adult Cardiac Surgery Database, Version 4.20*. Durham, NC: Duke University Medical Center; 2021.