

SUPPLEMENTARY MATERIAL

Sex and Gender Disparities in the Management and Outcomes of Acute Myocardial

Infarction-Cardiogenic Shock in Older Adults

Saraschandra Vallabhajosyula, MD; Saarwaani Vallabhajosyula, MBBS; Shannon M Dunlay, MD MS; Sharonne N Hayes, MD; Patricia JM Best, MD; Jorge A Brenes-Salazar, MD; Amir Lerman, MD; Bernard J Gersh, MBChB DPhil; Allan S Jaffe, MD; Malcolm R Bell, MD; David R Holmes, Jr., MD; Gregory W Barsness, MD

Supplementary Table 1. Administrative codes used for identification of diagnoses and procedures

Comorbidity	International Classification of Diseases 9.0 Clinical Modification Codes
Cardiac arrest	427.5
Coronary angiography	37.22, 37.23, 88.53-88.56
Percutaneous coronary intervention	00.66, 36.01, 36.02, 36.05, 36.06, 36.07, 88.57
Invasive hemodynamic assessment	37.21, 37.23, 204 (Clinical Classification Software)
Mechanical circulatory support	37.61, 37.68, 39.65
Invasive mechanical ventilation	96.7, 96.70, 96.71, 96.72
Non-invasive mechanical ventilation	93.90
Hemodialysis	39.95
Hepatic failure	570.0, 572.2, 573.3, 573.4
Respiratory failure	518.81, 518.82, 518.85, 786.09, 799.1, 96.7, 96.70, 96.71, 96.72
Renal failure	584, 584.5, 584.6, 584.7, 584.8, 584.9
Hematologic failure	286.6-286.9, 287.4, 287.5
Neurological failure	293, 293.0, 293.1, 293.8, 293.81-293.84, 293.89, 293.9, 348.1, 348.3, 348.30, 348.81, 348.39, 780.01, 780.09, 89.14

Supplementary Table 2. Classification of hospitals by bedsize by the Healthcare Cost and Utilization Project

Location and teaching status		Hospital bedsize		
		Small	Medium	Large
Northeast	Rural	1-49	50-99	100+
	Urban non-teaching	1-124	125-199	200+
	Urban teaching	1-249	250-424	425+
Midwest	Rural	1-29	30-49	50+
	Urban non-teaching	1-74	75-174	175+
	Urban teaching	1-249	250-374	375+
South	Rural	1-39	40-74	75+
	Urban non-teaching	1-99	100-199	200+
	Urban teaching	1-249	250-449	450+
West	Rural	1-24	25-44	45+
	Urban non-teaching	1-99	100-174	175+
	Urban teaching	1-199	200-324	325+

Supplementary Table 3. Multivariable regression for in-hospital mortality admissions^a

Total cohort (N = 134,501)		Odds ratio	95% confidence interval		P
			Lower Limit	Upper Limit	
Female sex		1.05	1.02	1.08	<.001
Race	White	Reference category			
	Black	0.97	0.92	1.03	.38
	Hispanic	1.01	0.95	1.07	.76
	Asian	1.00	0.92	1.08	.97
	Native American	1.08	0.84	1.40	.54
	Others	0.88	0.81	0.95	.001
Year of admission	2000	Reference category			
	2001	1.09	1.01	1.17	.03
	2002	0.97	0.90	1.05	.49
	2003	0.93	0.86	1.00	.05
	2004	0.88	0.82	0.95	.001
	2005	0.80	0.75	0.87	<.001
	2006	0.76	0.71	0.82	<.001
	2007	0.76	0.71	0.82	<.001
	2008	0.69	0.64	0.74	<.001
	2009	0.55	0.51	0.59	<.001
	2010	0.58	0.54	0.62	<.001
	2011	0.57	0.53	0.61	<.001
	2012	0.59	0.55	0.64	<.001
	2013	0.57	0.53	0.61	<.001
	2014	0.57	0.53	0.61	<.001

Primary payer	Medicare	Reference category			
	Medicaid	0.90	0.80	1.00	.06
	Private	1.01	0.96	1.07	.66
	Uninsured	1.65	1.39	1.95	<.001
	No Charge	0.85	0.50	1.44	.55
	Others	1.20	1.02	1.41	.02
Quartile of median household income for zip code	0-25th	Reference category			
	26th-50th	1.01	0.97	1.05	.57
	51st-75th	1.00	0.96	1.04	.91
	75th-100th	1.06	1.02	1.11	.003
Hospital teaching status and location	Rural	Reference category			
	Urban Non-Teaching	0.81	0.77	0.86	<.001
	Urban Teaching	0.79	0.75	0.83	<.001
Hospital bed-size	Small	Reference category			
	Medium	0.93	0.88	0.98	.004
	Large	0.94	0.89	0.98	.005
Hospital region	Northeast	Reference category			
	Midwest	0.90	0.86	0.94	<.001
	South	0.87	0.84	0.91	<.001
	West	0.92	0.88	0.96	<.001
Charlson Comorbidity Index	4-6	Reference category			
	≥ 7	0.93	0.90	0.95	<.001
Type of AMI	STEMI	Reference category			
	NSTEMI	0.57	0.56	0.59	<.001
Acute organ failure	Respiratory	1.15	1.12	1.19	<.001

	Renal	1.22	1.19	1.26	<.001
	Hepatic	1.43	1.35	1.51	<.001
	Hematologic	0.75	0.71	0.78	<.001
	Neurologic	0.92	0.88	0.96	<.001
Cardiac arrest		2.38	2.30	2.47	<.001
Coronary angiography		0.40	0.38	0.42	<.001
Percutaneous coronary intervention		0.65	0.62	0.67	<.001
Invasive hemodynamic monitoring		1.05	1.01	1.09	.02
Mechanical circulatory support		1.05	1.01	1.08	.01
Invasive mechanical ventilation		1.95	1.89	2.01	<.001
Hemodialysis		1.27	1.17	1.37	<.001

^aAMI = acute myocardial infarction; NSTEMI = non-ST-elevation myocardial infarction;

STEMI = ST-elevation myocardial infarction

c-statistic of model: 0.89

SUPPLEMENTARY FIGURE LEGENDS

Supplementary Figure. Trends in the prevalence and in-hospital mortality in older AMI-CS admissions stratified by hospital characteristics

Legend: Fifteen-year trends in older men (solid line) and older women (dashed line) in admission stratified by hospital location and teaching status (A), hospital bedsize (B) and hospital region (C); all $p < .001$ for trend over time. All values are percentage of admissions in each sex admitted to the different hospital categories (location/teaching status, bedsize and region).

Abbreviations: AMI: acute myocardial infarction; CS: cardiogenic shock

