Is there gender difference in the prognosis of IHD ? : Nope !

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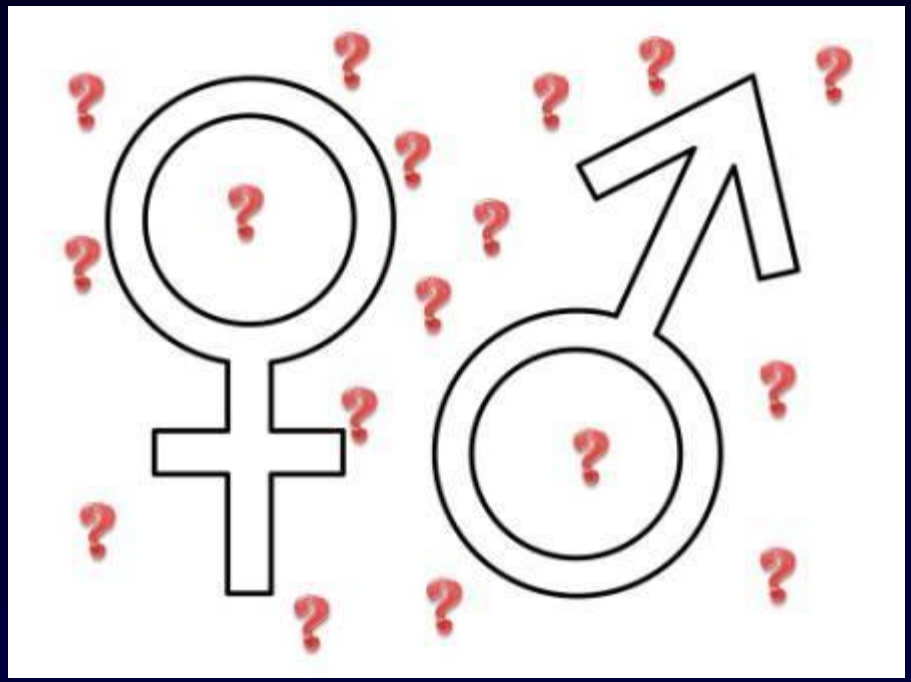
편파 중계석

Same features in women and men



Sex

vs.

Gender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Contents

- Characteristics of women vs. men in IHD
- No sex difference evidences of clinical outcomes

  In terms of

  - ACS vs. Stable IHD
  - STEMI vs. NSTEMI

Pre-thrombolytic era

30 – day mortality after AMI

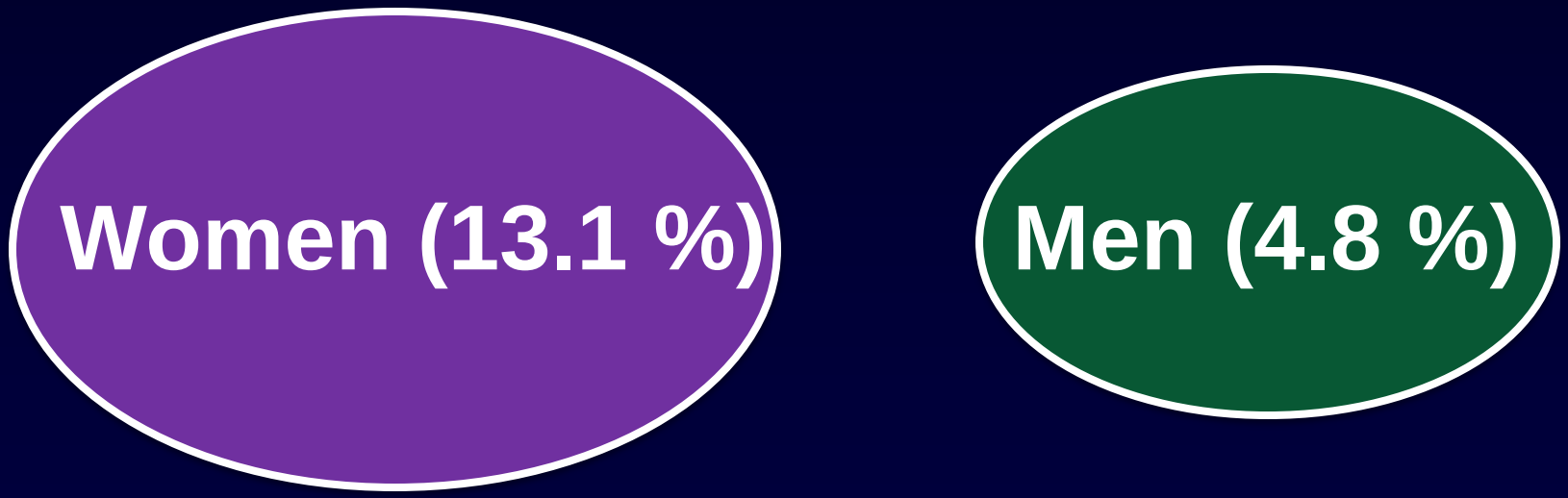
Women (28 %)

Men (16 %)

Kannel WB, et al. Am J Cardiol. 1979;44:53-9.

GUSTO-I trial

30 – day mortality after AMI



Woodfield SL, et al. JACC. 1997;29:35-42.

Characteristics of women vs. men in IHD

- Longer wait than men before going to the hospital
- Less likely to be given a diagnosis of AMI at admission
- Less frequently receive thrombolytic therapy

  or undergo PCI or CABG
- Less receive evidence-based medical Tx and cardiac rehab.

Characteristics of women vs. men in IHD

- Relatively older when diagnosed with IHD
- More have comorbidities (ex. DM, HTN, MS..)
- More likely to have normal coronary arteries

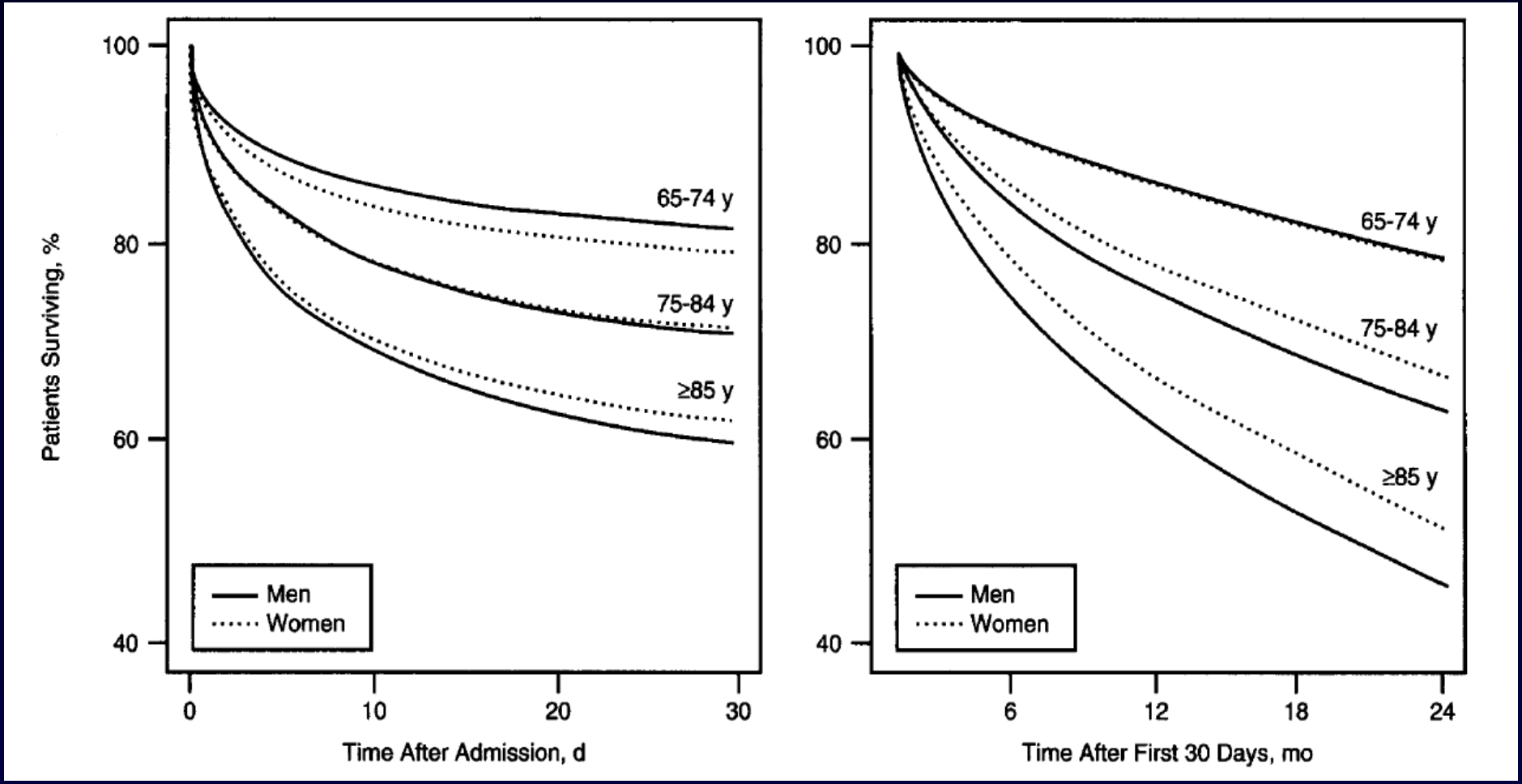
30-day mortality after AMI

TABLE 5. 30-DAY MORTALITY AND HAZARD RATIO FOR DEATH AMONG WOMEN AND MEN WITH ACUTE MYOCARDIAL INFARCTION.*

VARIABLE	WOMEN (N=68,108)	MEN (N=70,848)
30-Day mortality — % (no.)	21.0 (14,274)	17.2 (12,211)
Unadjusted HR (95% CI)	1.24 (1.21–1.28)	1.00
Adjusted HR (95% CI) in model not including treatments†	1.04 (1.01–1.07)	1.00
Adjusted HR (95% CI) in model including early treatments‡	1.02 (0.99–1.04)	1.00

Gan SC, et al. NEJM. 2000:343:8-15.

Gender- and age-specific survival after AMI



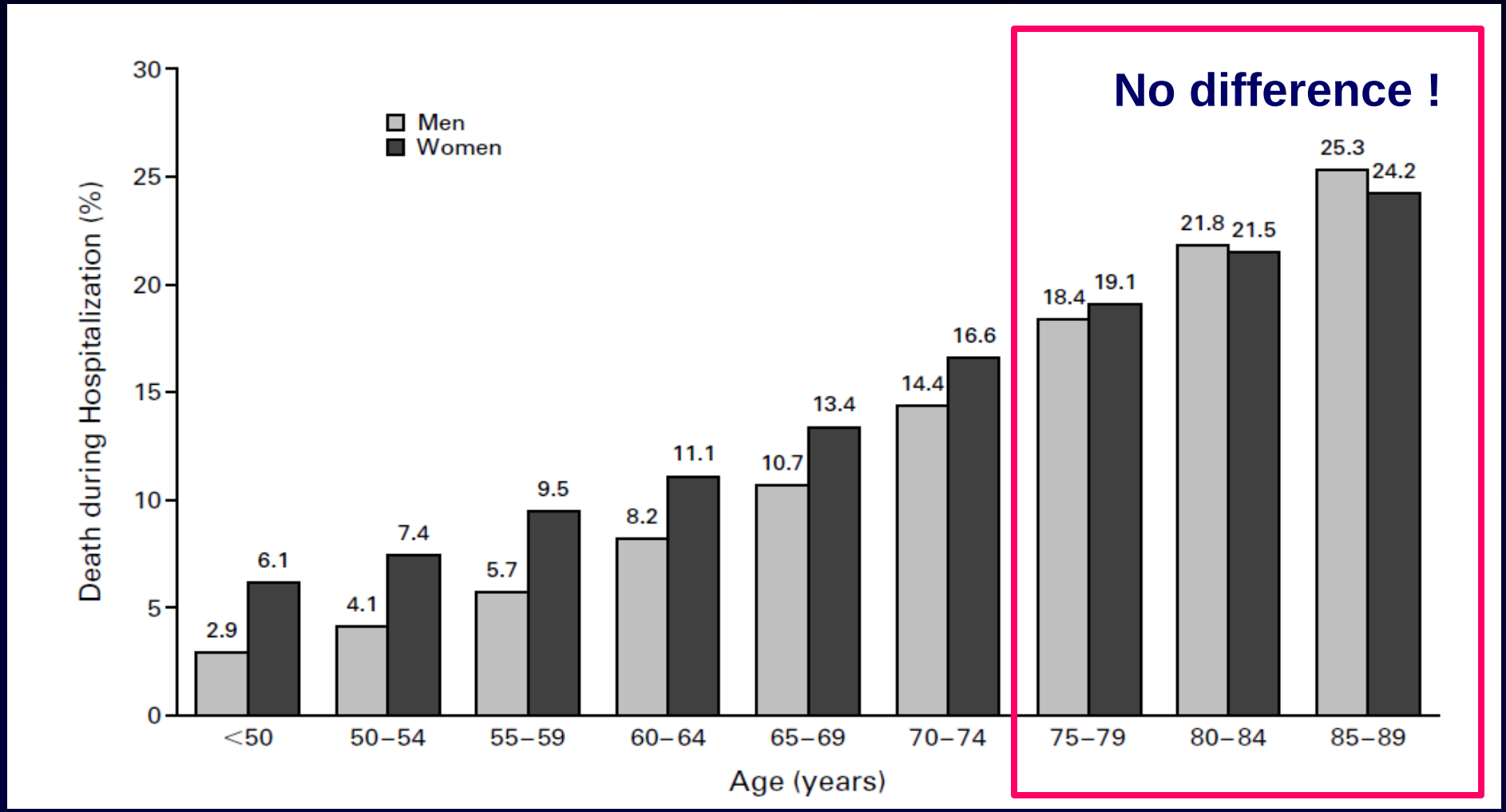
Udvarhelyi IS, et al. JAMA. 1992;268:2530-6.

Sex Differences in Medical Care and Early Death After Acute Myocardial Infarction

Measure/Treatment/Outcome	n	Adjusted OR (95% CI) (Women vs Men)	*P*
Early medical therapy			
Aspirin within 24 h	70 360	0.86 (0.81–0.90)	<0.0001
β-Blocker within 24 h	64 681	0.90 (0.86–0.93)	<0.0001
Invasive procedures			
Cardiac catheterization	74 769	0.91 (0.88–0.94)	<0.0001
PCI	67 477	0.78 (0.74–0.81)	<0.0001
CABG	67 477	0.60 (0.55–0.65)	<0.0001
Revascularization	67 477	0.68 (0.65–0.71)	<0.0001
Acute reperfusion and timeliness of reperfusion†			
DTN ≤30 min	2807	0.78 (0.65–0.92)	0.004
DTB ≤90 min	7673	0.87 (0.79–0.95)	0.004
Reperfusion therapy	24 742	0.75 (0.70–0.80)	<0.0001
Primary PCI	24 742	0.83 (0.78–0.87)	<0.0001
Fibrinolytic therapy	24 742	0.87 (0.81–0.93)	<0.0001
In-hospital death			
Overall AMI cohort	70 105	1.04 (0.99–1.10)	0.1
STEMI subpopulation	23 015	1.12 (1.02–1.23)	0.015

Jneid H, et al. Circulation. 2008;118:2803-10.

In-hospital mortality after AMI (N=384,878) according to age



Vaccarion V, et al. NEJM. 1999:341:217-25.

Procedural outcomes in overall post PCI population with OR for men vs. women : Acute coronary syndrome

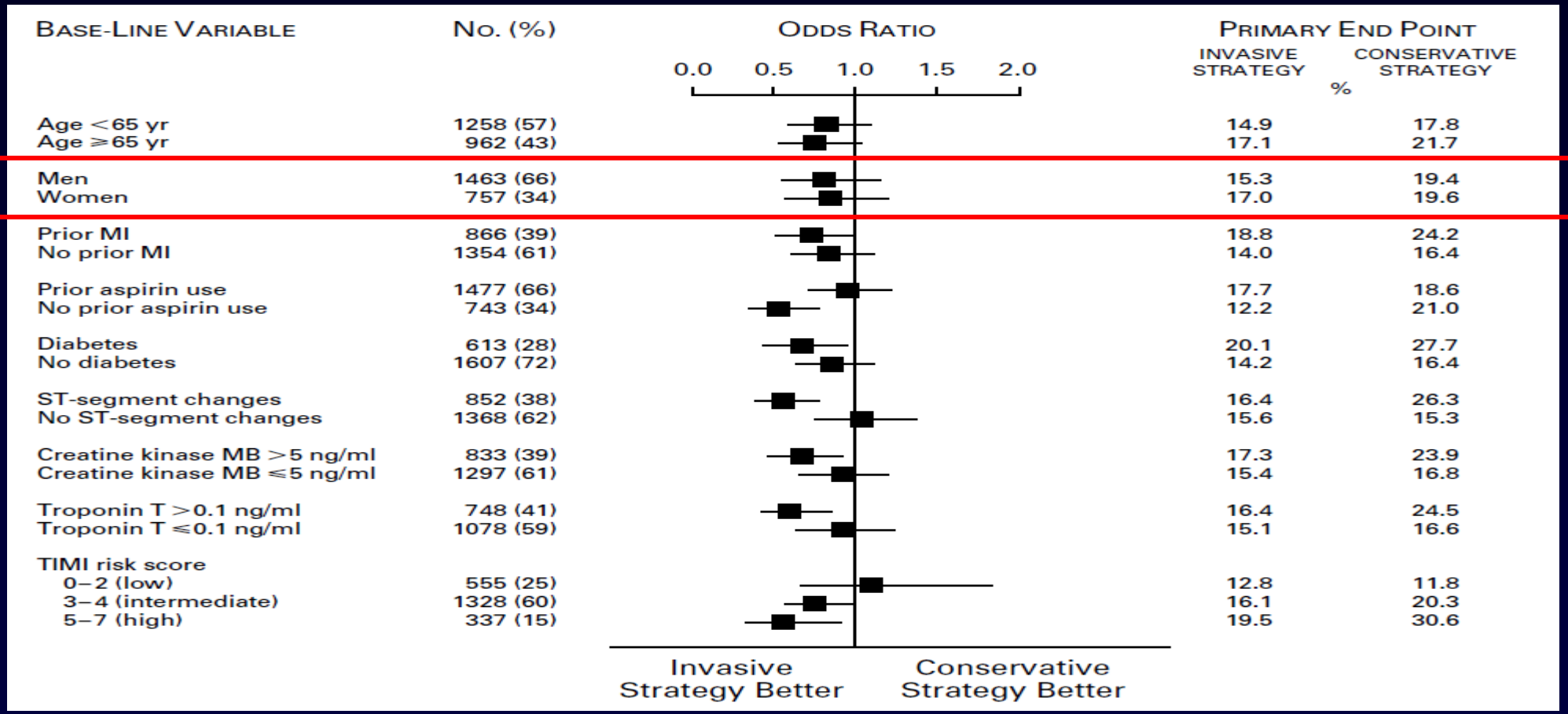
	Men (n = 131 664)	Women (n = 68 026)	Unadjusted OR	Adjusted OR (95% CI)	Adjusted P value
In-hospital					
Mortality	1.4	2.2	0.65	0.97 (0.88-1.07)*	.52
Cardiogenic shock	1.2	1.6	0.73	0.82 (0.75-0.89)†	<.01
CVA	0.6	0.7	0.74	0.83 (0.65-1.06)‡	.13
CHF	1.3	1.8	0.71	0.80 (0.69-0.92)§	.002
Renal failure	0.6	1.1	0.57	1.13 (0.99-1.29)*	.07
Any bleeding event	2.1	4.4	0.46	0.55 (0.52-0.58)*	<.01
Any vascular event	0.7	0.9	0.70	0.69 (0.51-0.93)‡	.02

Akhter N, et al. Am Heart J. 2009:157:141-8.

COMPARISON OF EARLY INVASIVE AND CONSERVATIVE STRATEGIES IN PATIENTS WITH UNSTABLE CORONARY SYNDROMES TREATED WITH THE GLYCOPROTEIN IIb/IIIa INHIBITOR TIROFIBAN

(TACTICS TIMI-18)

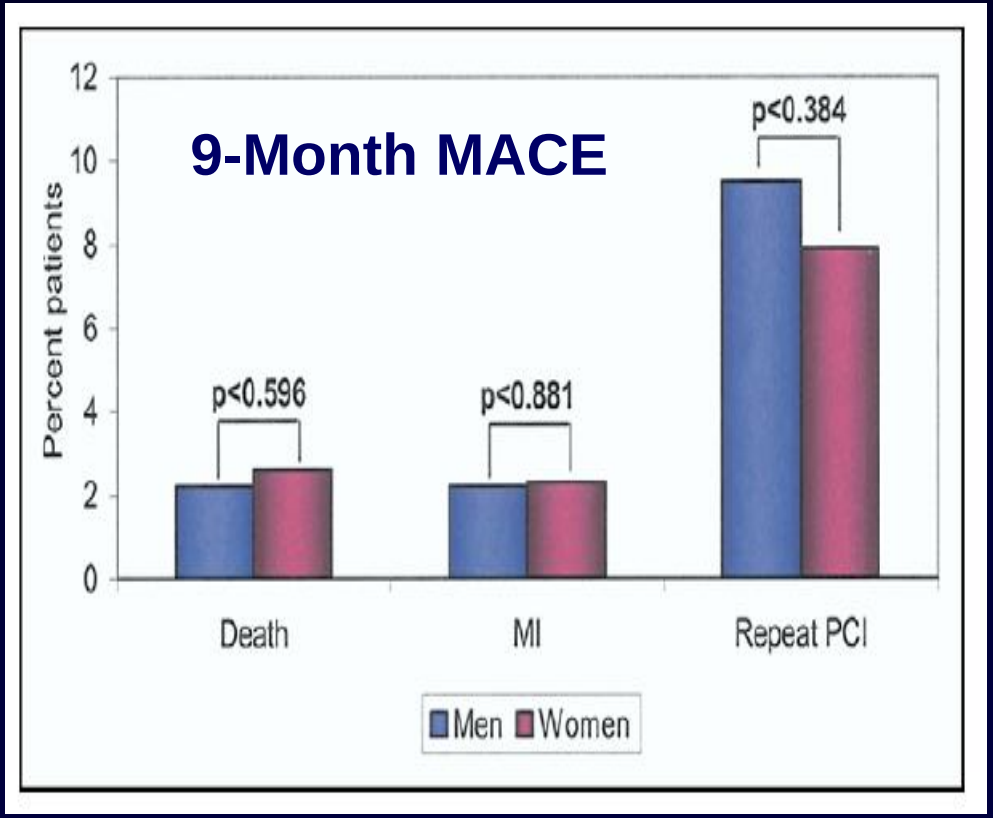
6 month Death, non-fatal MI, Rehospitalization d/t ACS (NSTEMI)

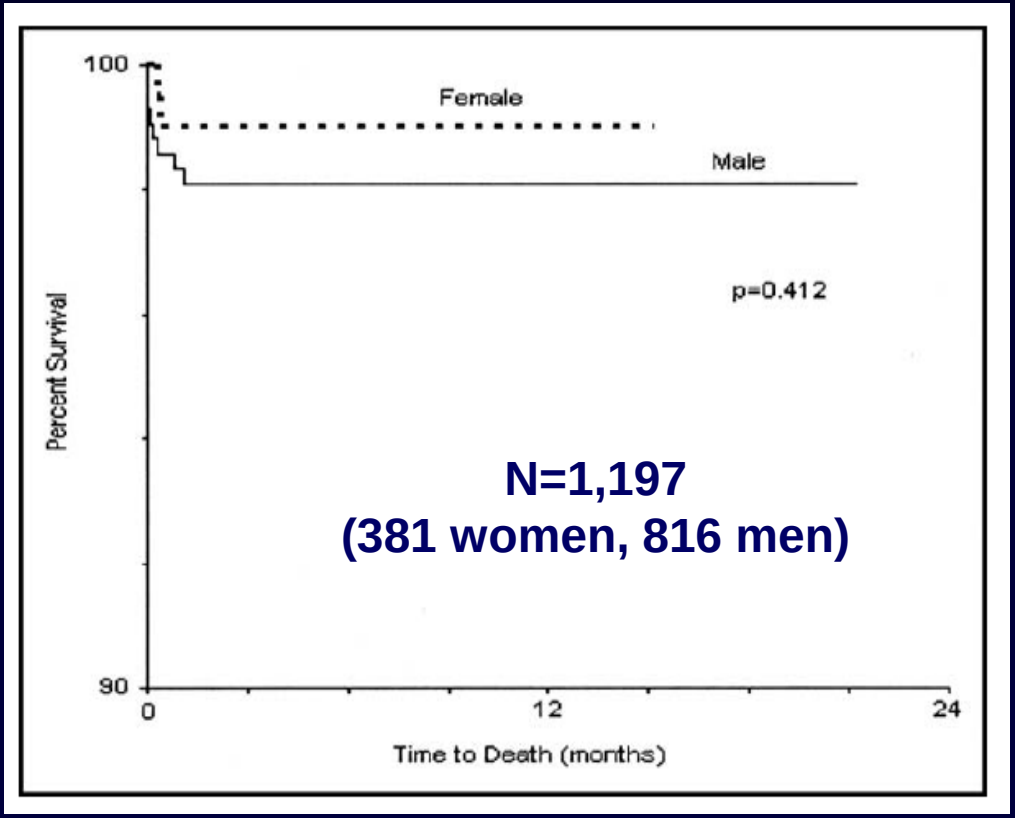


Cannon CP, et al. NEJM. 2001;344:1879-97.

Comparison of Results of Percutaneous Coronary Intervention for Non–ST-Elevation Acute Myocardial Infarction or Unstable Angina Pectoris in Men Versus Women

Single-site, retrospective observational study





Elkoustaf R, et al. Am J Cardiol. 2006;98:182-6.

Impact of gender on clinical outcomes at 1 yr in patients with NSTEMI

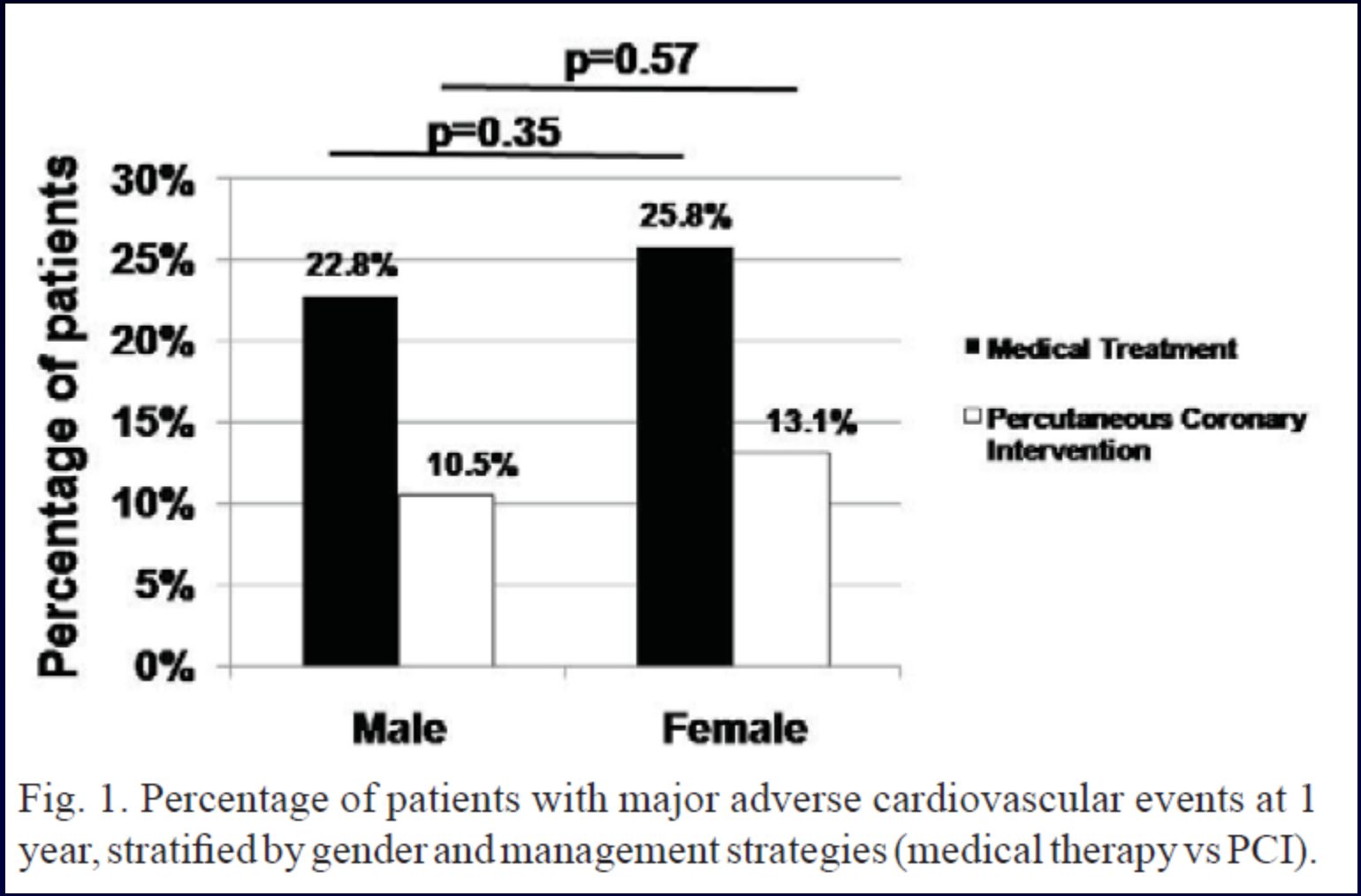


Fig. 1. Percentage of patients with major adverse cardiovascular events at 1 year, stratified by gender and management strategies (medical therapy vs PCI).

Lee LC, et al. Ann Acad Med Singapore. 2010:39:168-72.

Editorial

Is there a gender paradox in the early invasive strategy for non ST-segment elevation acute coronary syndromes?

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The University of Connecticut School of Medicine, Farmington, CT, USA

Elkoustaf RA, Boden WE. Eur Heart J. 2004;25:1559-61.

Impact of female gender and transradial coronary stenting with maximal antiplatelet therapy on bleeding and ischemic outcomes

Table IV. Major adverse cardiac events

	Gender		
	Women (n = 298; 22%)	Men (n = 1050; 78%)	*P*
MACE			
30 d	10 (3.4%)	41 (3.9%)	.86
6 m	34 (11.5%)	82 (7.8%)	.06
1 y	42 (14.1%)	132 (12.6%)	.49
Death			
6 m	2 (0.7%)	2 (0.2%)	.21
1 y	3 (1.0%)	8 (0.8%)	.72
MI			
6 m	12 (4.0%)	38 (3.6%)	.73
1 y	13 (4.4%)	44 (4.2%)	.87
TVR			
6 m	23 (7.7%)	49 (4.7%)	.056
1 y	31 (10.4%)	89 (8.5%)	.30

Subjects : ACS patients (n=1,348)

Female gender **was NOT a predictor of adverse clinical outcomes after PCI with maximal antiplatelet therapy**

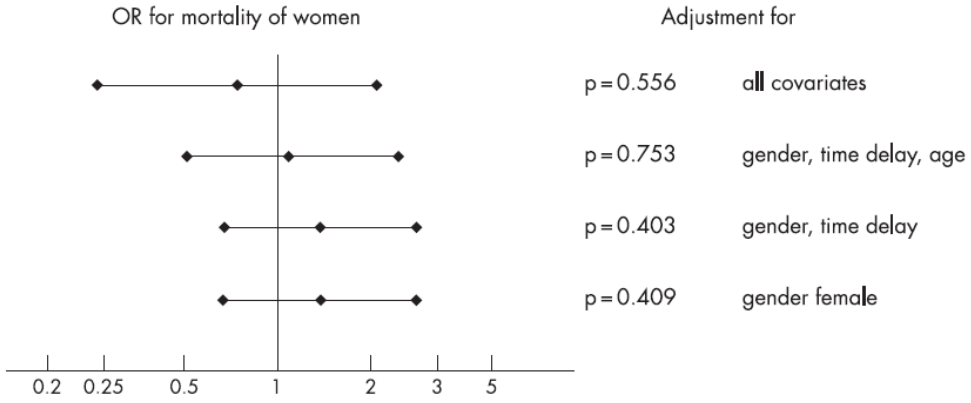
Tizon-Marcos H, et al. Am Heart J. 2009:157;40-5.

The impact of gender on outcomes of patients with ST elevation myocardial infarction transported for percutaneous coronary intervention: analysis of the PRAGUE-1 and 2 studies

Table 4 Clinical end points at 30 days

	Thrombolysis				Percutaneous coronary intervention			
	Women (n = 153)	Men (n = 367)	p Value	Univariate OR (95% CI)	Women (n = 159)	Men (n = 371)	p Value	Univariate OR (95% CI)
Mortality, n (%)	23 (15.0%)	33 (9.0%)	0.043	1.791 (1.01 to 3.17)	13 (8.2%)	23 (6.2%)	0.409	1.347 (0.66 to 2.73)
Reinfarction, n (%)	8 (5.2%)	23 (6.3%)	0.410	0.825 (0.36 to 1.89)	2 (1.3%)	7 (1.9%)	0.462	0.662 (0.14 to 3.22)
Stroke, n (%)	7 (5.2%)	4 (1.2%)	0.015	4.57 (1.32 to 15.8)	1 (0.6%)	1 (0.3%)	–	

OR, odds ratio; CI, confidence interval.

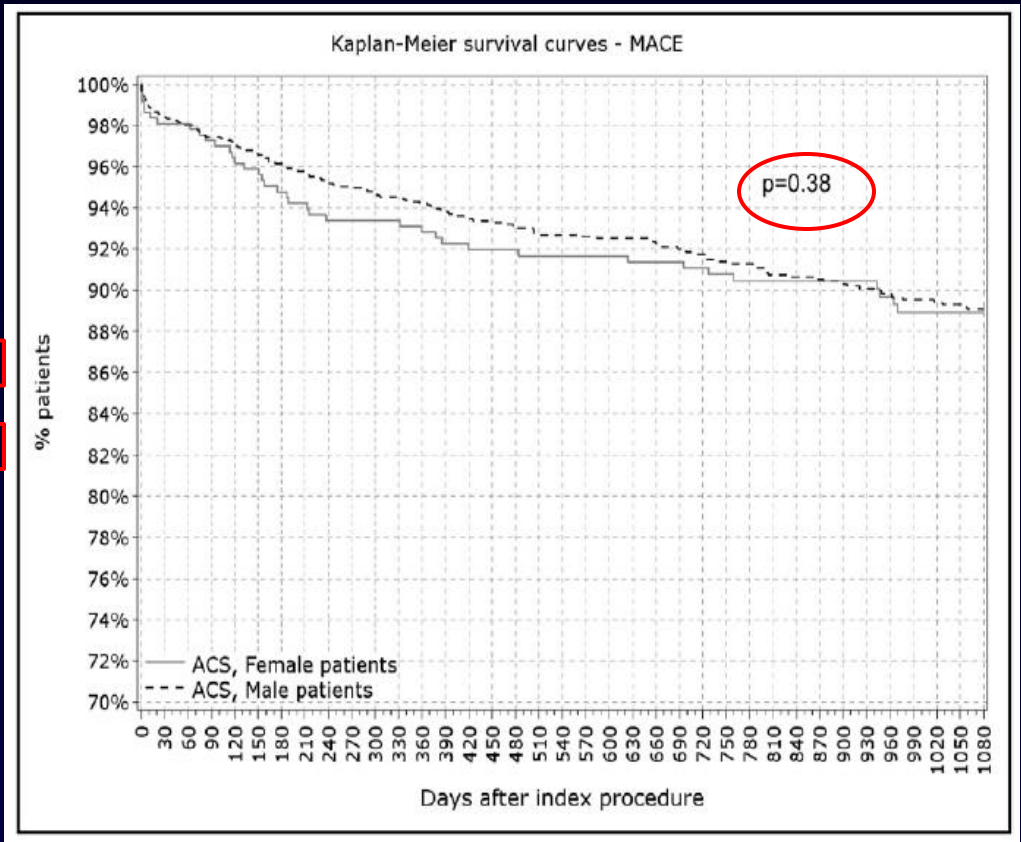


Adjustement for	OR	95% C.I.	p Value
Female gender	1.35	0.66 to 2.73	0.409
Female gender, time delay	1.35	0.67 to 2.75	0.403
Female gender, time delay, age	1.08	0.51 to 2.38	0.753
All covariates	0.74	0.26 to 2.05	0.556

Motovska Z, et al. Heart. 2008;94

Gender Impact on Prognosis of Acute Coronary Syndrome Patients Treated With Drug-Eluting Stents

Multivariate analysis for events at two-year follow-up		
	HR (95% CI)	p Value
Univariate model		
Women vs men	1.05 (0.72–1.52)	0.80
Multivariate model		
Women vs men	0.921 (0.63–1.35)	0.67
Age (per year)	1.031 (1.01–1.05)	0.0002
Diabetes mellitus	1.540 (1.11–2.213)	0.009
Hypertension	1.296 (0.87–1.93)	0.19
2- vs 1-vessel disease	1.110 (0.76–1.62)	0.59
3- vs 1-vessel disease	1.801 (1.22–2.85)	0.003



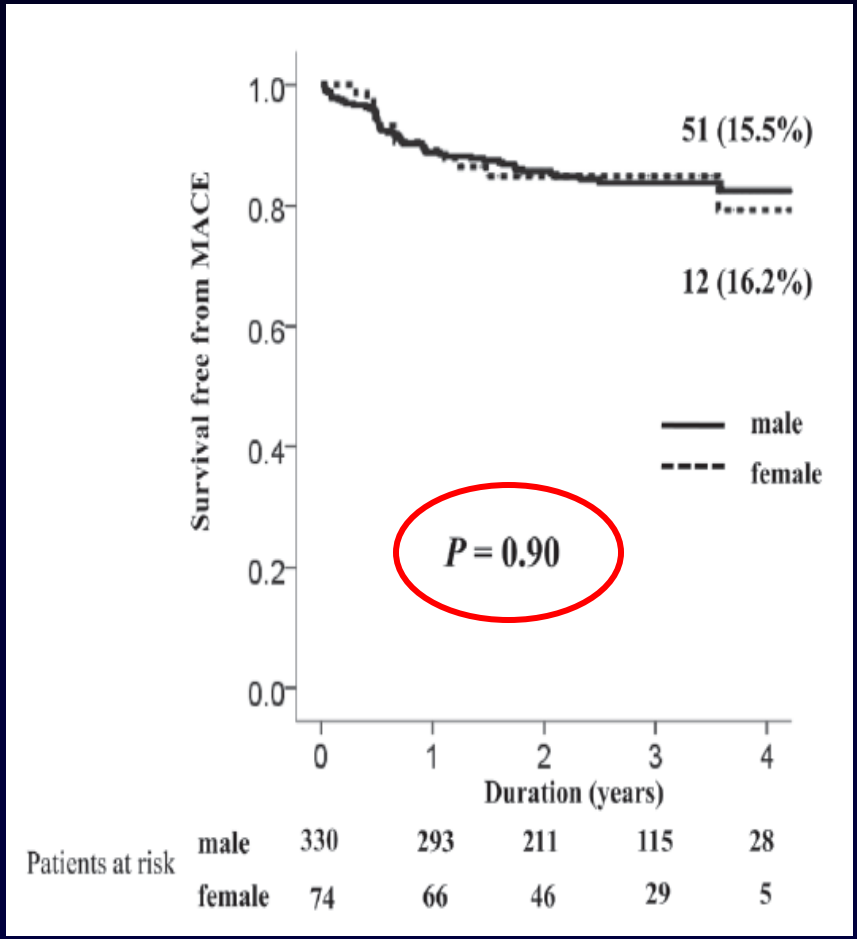
Fath-Ordoubadi F, et al. Am J Cardiol. 2012;110:636-42.

Gender-Based Outcomes Among Patients With Diabetes Mellitus After Percutaneous Coronary Intervention in the Drug-Eluting Stent Era

Table III. Cumulative Incidence of Clinical Events

	Women ($n = 74$)	Men ($n = 330$)	P
MACE, n (%)	12 (16.2)	51 (15.5)	0.90
Death, n (%)	5 (6.8)	10 (3.0)	0.13
Cardiac death, n (%)	2 (40)	4 (40)	
Noncardiac death, n (%)	3 (60)	6 (60)	
ACS, n (%)	1 (1.4)	11 (3.3)	0.36
TLR, n (%)	4 (5.4)	30 (9.1)	0.31

ACS indicates acute coronary syndrome; MACE, major adverse cardiac event, and TLR, target lesion revascularization.



Ogita M, et al. Int Heart J. 2011:52;348-52.

Gender-Based Differences in the Management and Prognosis of Acute Coronary Syndrome in Korea

Table 3. Prognosis Evaluation

	Total n=6,636	Male n=4,394 (66.2%)	Female n=2,242 (33.8%)	*p* value χ^2-test
Cardiovascular disease-related death (n, %)	30 (0.5)	19 (0.4)	11 (0.5)	0.738
Recurrent ACS (n, %)	38 (0.6)	25 (0.6)	13 (0.6)	0.956
Stroke (n, %)	16 (0.2)	8 (0.2)	8 (0.4)	0.170
Refractory angina (n, %)	28 (0.4)	15 (0.3)	13 (0.6)	0.156
Rehospitalization for angina (n, %)	58 (0.9)	37 (0.8)	21 (0.9)	0.695
Coronary artery bypass grafting (n, %)	8 (0.1)	4 (0.1)	4 (0.2)	0.456
Stent	Total n=5,119	Male n=3,450 (67.4%)	Female n=1,669 (32.6%)	*p* value χ^2-test
Restenosis (n, %)	36 (0.7)	23 (0.7)	13 (0.8)	0.652
Stent thrombosis (n, %)	4 (0.1)	3 (0.1)	1 (0.1)	1.000
Repeat percutaneous coronary intervention (n, %)	65 (1.3)	45 (1.3)	20 (1.2)	0.216

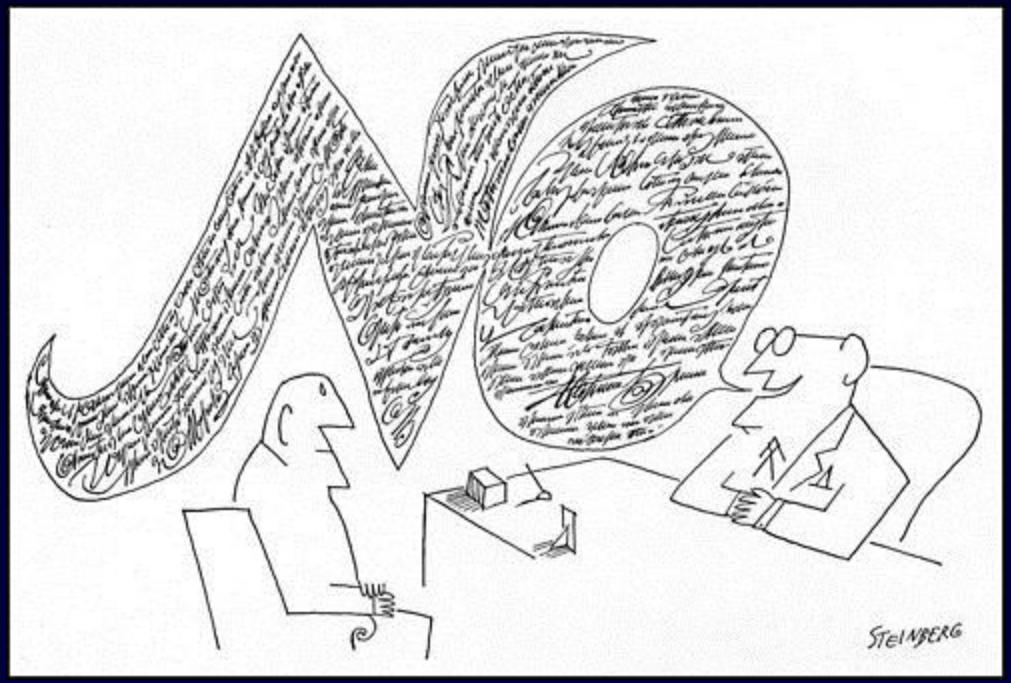
ACS, Acute Coronary Syndrome.
Values are presented as means±SD or percentages.

Yu HT, et al. YMJ. 2011:52;562-8.

The bottom line is……

- Improvements in PCI techniques
- Improvements in peri-procedural anticoagulation
- Improvements in management of CV risk factors
- etc….

Is there sex difference in the prognosis of IHD ? : contemporary era



Appreciate your attention ^^