ISTITUTO CLINICO HUMANITAS

Istituto di Ricovero e Cura a Carattere Scientifico

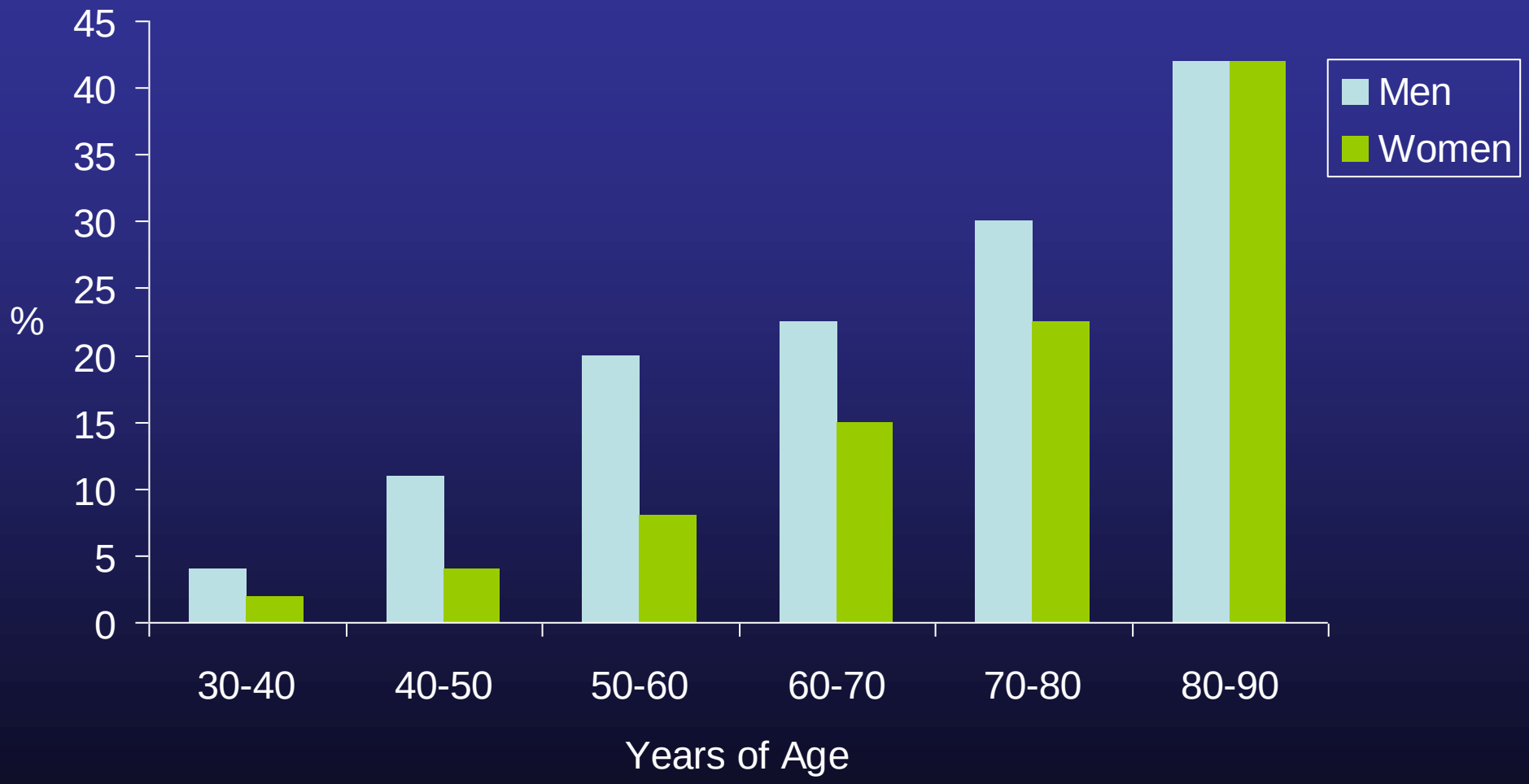
Patrizia Presbitero

CAD and stent in women

XXIV Giornate Cardiologiche Torinesi

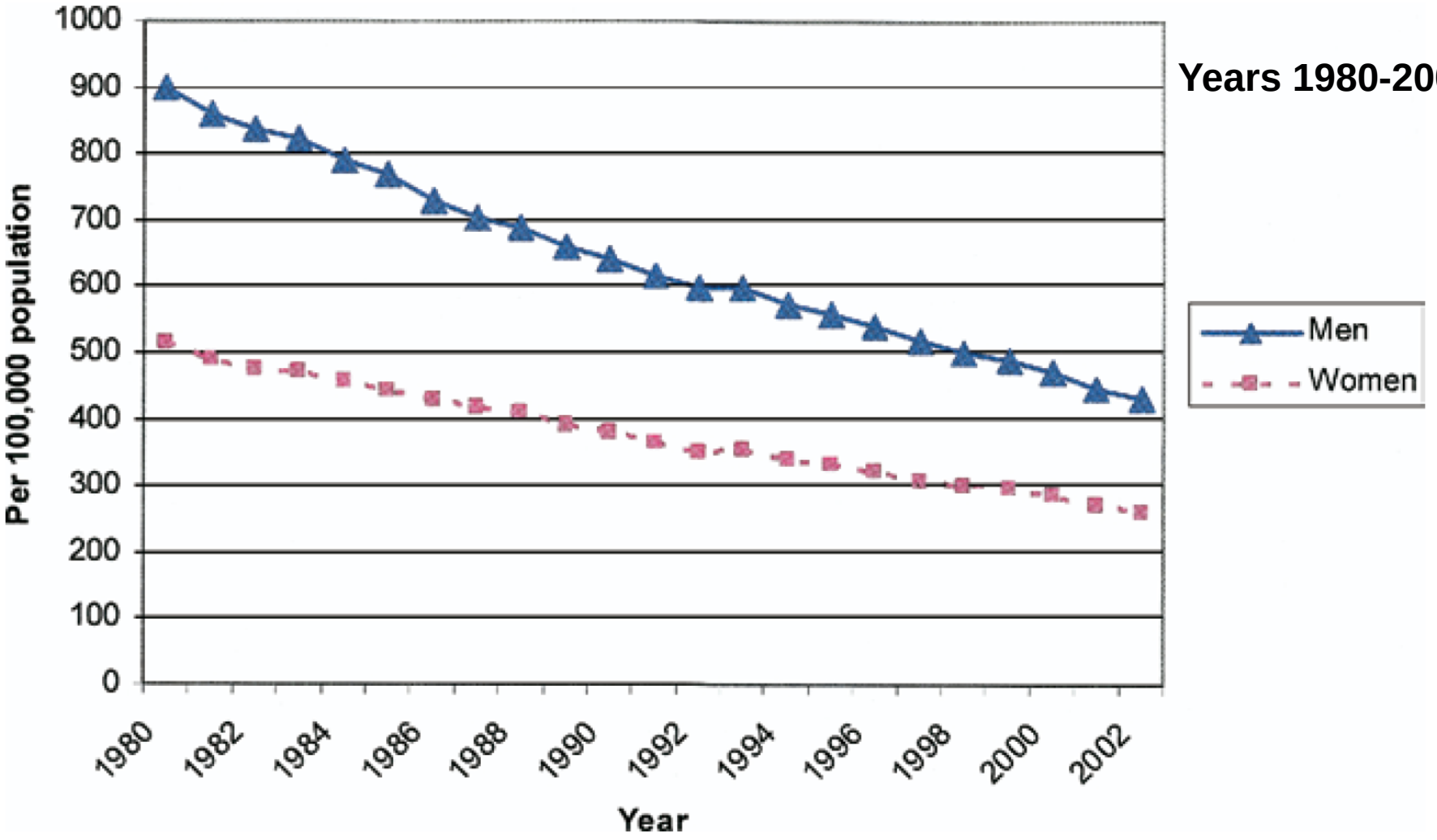
Torino, 20 Ottobre 2011

Incidence of CAD by Decade



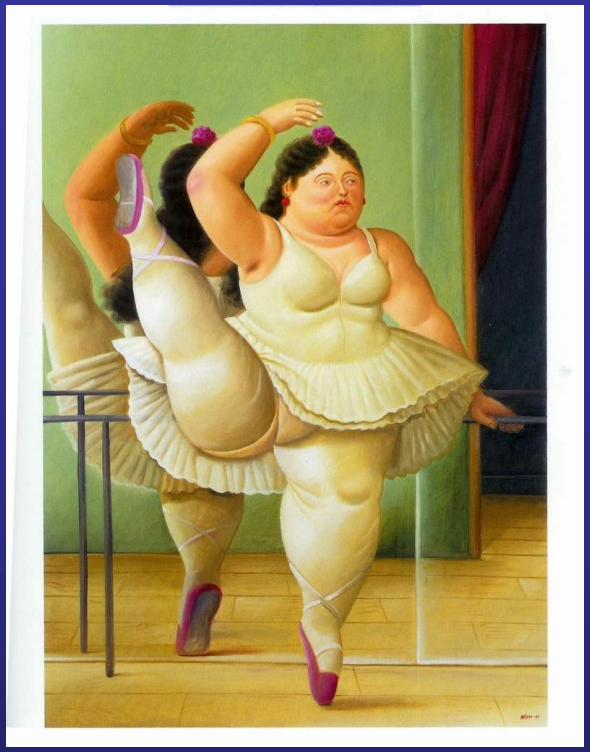
Adapted from Castelli et al. Am J Obstet Gynecol 1988;158:1554.

TEMPORAL TREND IN AGE-ADJUSTED MORTALITY FROM CHD



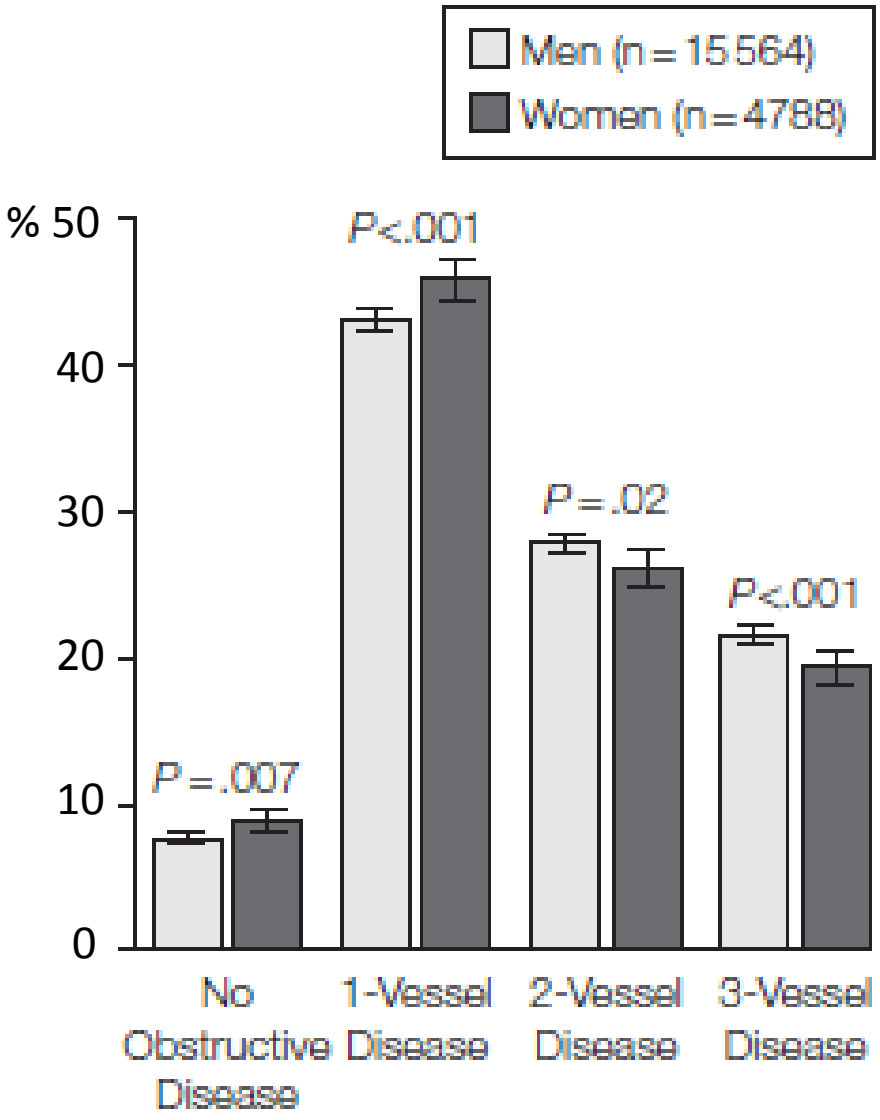
Ford et al., JACC 2007; 50:2128-32

GENDER DIFFERENCES in pts undergoing PCI



1. Older age
2. Co-morbidity
3. Presentation more often with unstable angina
4. Less previous infarction and revascularisation
5. Better LV function
6. Small, more calcified and tortuous vessels

Extent of coronary atherosclerosis



Berger et al., JAMA 2009;302:874-882

Gender Differences

PCI in women is associated with a gender-related higher periprocedural hazard, diminished by contemporary widespread coronary stenting

In-Hospital Outcome	Stent Era: Early (1994–6/95)	Stent Era: Provisional (7/95–1997)	Stent Era: Current (1998–1999)	P_{trend}
Clinical success (%)				
Women	89.03	91.45	93.45	< 0.001
Men	88.25	91.23	94.20	< 0.001
MI (%)				
Women	2.44	1.76	1.71	0.378
Men	2.18	2.09	1.36	0.009
Any CABG (%)				
Women	3.39	2.10	0.94	< 0.001
Men	3.32	1.66	0.83	< 0.001
Emergent CABG				
Women	2.20	1.54	0.60	< 0.001
Men	2.15	1.14	0.55	< 0.001
Nonemergent CABG				
Women	1.08	0.50	0.38	< 0.001
Men	1.04	0.52	0.28	< 0.001
Death (%)				
Women	1.36	1.30	1.04	0.846
Men	1.14	1.27	0.79	0.273

Malenka DJ, ***J Am Coll Cardiol*** 2002

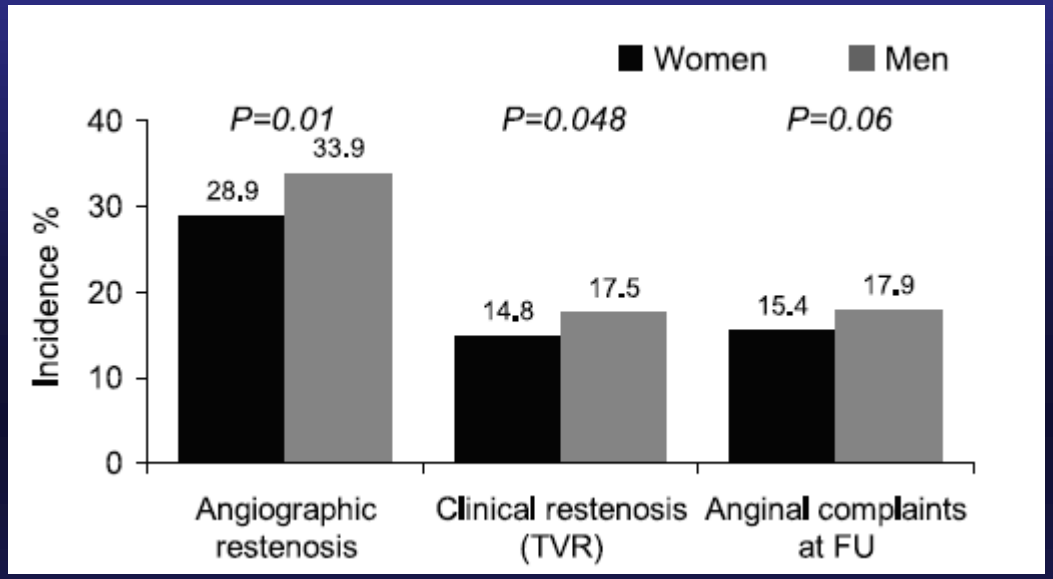
Gender and restenosis after coronary artery stenting

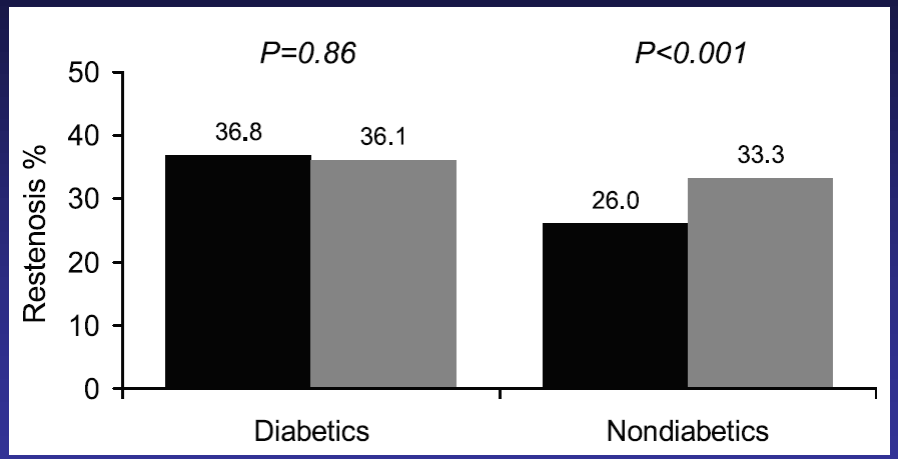
Julinda Mehilli, Adnan Kastrati*, Hildegard Bollwein, Alban Dibra, Helmut Schühlen, Josef Dirschinger, Albert Schömig

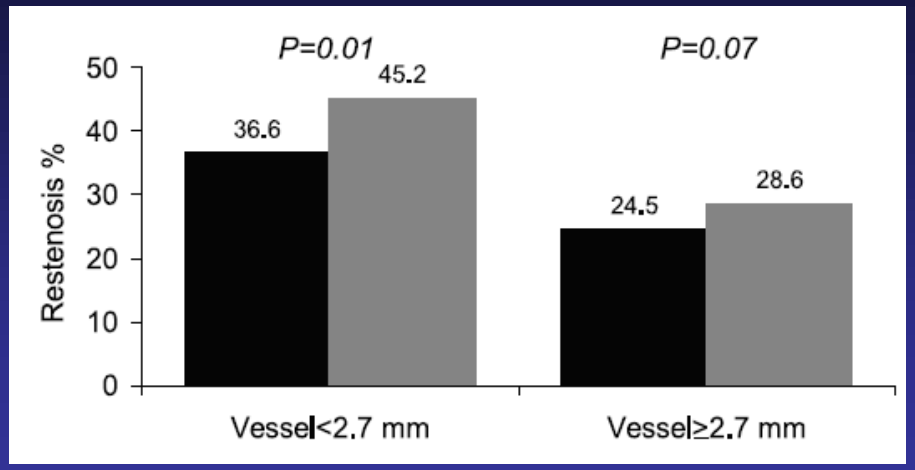
Deutsches Herzzentrum and 1. Medizinische Klinik rechts der Isar der Technischen Universität, Munich, Germany

PCI with BMS

N men =3349
N women=1025







Mehilli J et al, Eur heart J 2003;24: 1523-1530

Clinical characteristics of pts: BMS vs PES

ICH-PCI-database (1999 - 2005)

	BMS			PES		
	Men	Women	p	Men	Women	p
N°	2811	704		642	168	
Age (years±SD)	63.2±10.5	70±9.7	<0.001	63.4±10	68±10.3	<0.001
Diabetes (%)	22.1	28.5	<0.001	29.7	39.9	0.01
Hypertension (%)	59.0	70.3	<0.001	69.8	76.2	0.10
Hyperlipidemia (%)	59.9	63.2	0.11	73.2	65.4	0.05
Smoking (%)	73.4	28.9	<0.001	74.3	34.5	<0.001
Previous MI (%)	46.2	37.5	<0.001	41.7	34.5	0.09
Previous revascul. (%)	31.0	23.1	<0.001	49.7	36.2	0.001
Angina (%)	61.8	70.3	<0.001	51.7	65.5	0.004
Silent Ischemia (%)	11.4	5.1	<0.001	16.5	10.1	0.06
AMI (%)	6.3	8.8	0.01	8.1	8.6	0.83

Long term outcomes of pts, BMS and PES according to gender

ICH-PCI-database (1999 - 2005)

	BMS			PES		
N°	M 2811	W 704	p	M 642	W 168	p
Death (%)	2.9	4.9	0.04	2.1	2.0	1.0
AMI (%)	4.8	4.2	0.78	3.2	3.7	0.79
Angina (%)	31.4	35.0	0.13	22.8	25.5	0.49
Stent thrombosis (%)	0.7	0	0.13	1.2	0	0.18
TLR (%)	20.9	16.7	0.05	11.8	8.3	0.36
All repeat PCI (%)	38.3	28.5	<0.001	28.4	23.5	0.23

EuroIntervention

The gender paradox

Patrizia Presbitero, MD

Operative Unit of Invasive Cardiology, Humanitas Clinical Institute, IRCCS, Rozzano, Milan, Italy

WORST BASIC CONDITIONS

BETTER LONG TERM RESULTS

Presbitero P, EuroInterv 2008;4: 415-417.

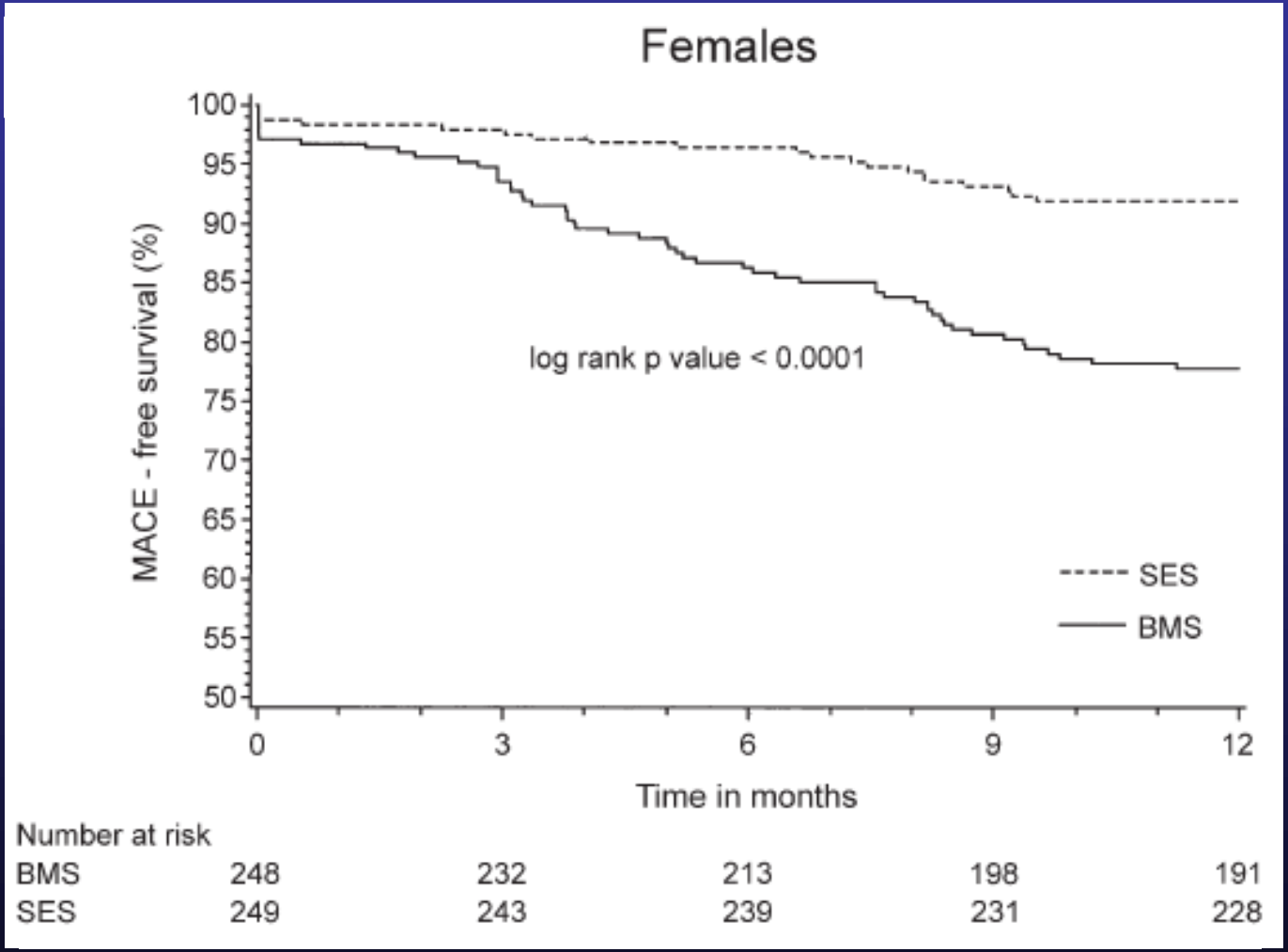
Clinical outcomes after PES implantation

TAXUS IV (1314 pts, 1 year follow up)

	TAXUS Stent			Control Stent			TAXUS vs. Control	
	W	M	p	W	M	p	W p	M p
	187	475		180	472			
MACE	13.5	9.9	0.24	22.7	19.0	0.35	0.02	<0.0001
TV fail	13.0	8.8	0.15	21.6	18.6	0.45	0.03	<0.0001
Death	0.5	1.7	0.25	1.8	1.1	0.53	0.30	0.41
MI	2.7	3.8	0.48	7.9	3.4	0.02	0.03	0.73
TLR	7.6	3.2	0.03	14.9	15.2	0.88	0.02	<0.0001
TVR	10.8	5.7	0.03	17.5	17.0	0.95	0.07	<0.0001
PCI	9.2	4.1	0.02	15.2	13.4	0.69	0.08	<0.0001
CABG	2.2	1.6	0.54	2.2	4.7	0.15	0.95	0.0044
Late ST	0.0	0.8	0.21	0.0	1.1	0.17	—	0.73

Lansky et al. JACC 2005;45:1180-5

Gender-Specific Outcomes After Sirolimus-Eluting Stent Implantation

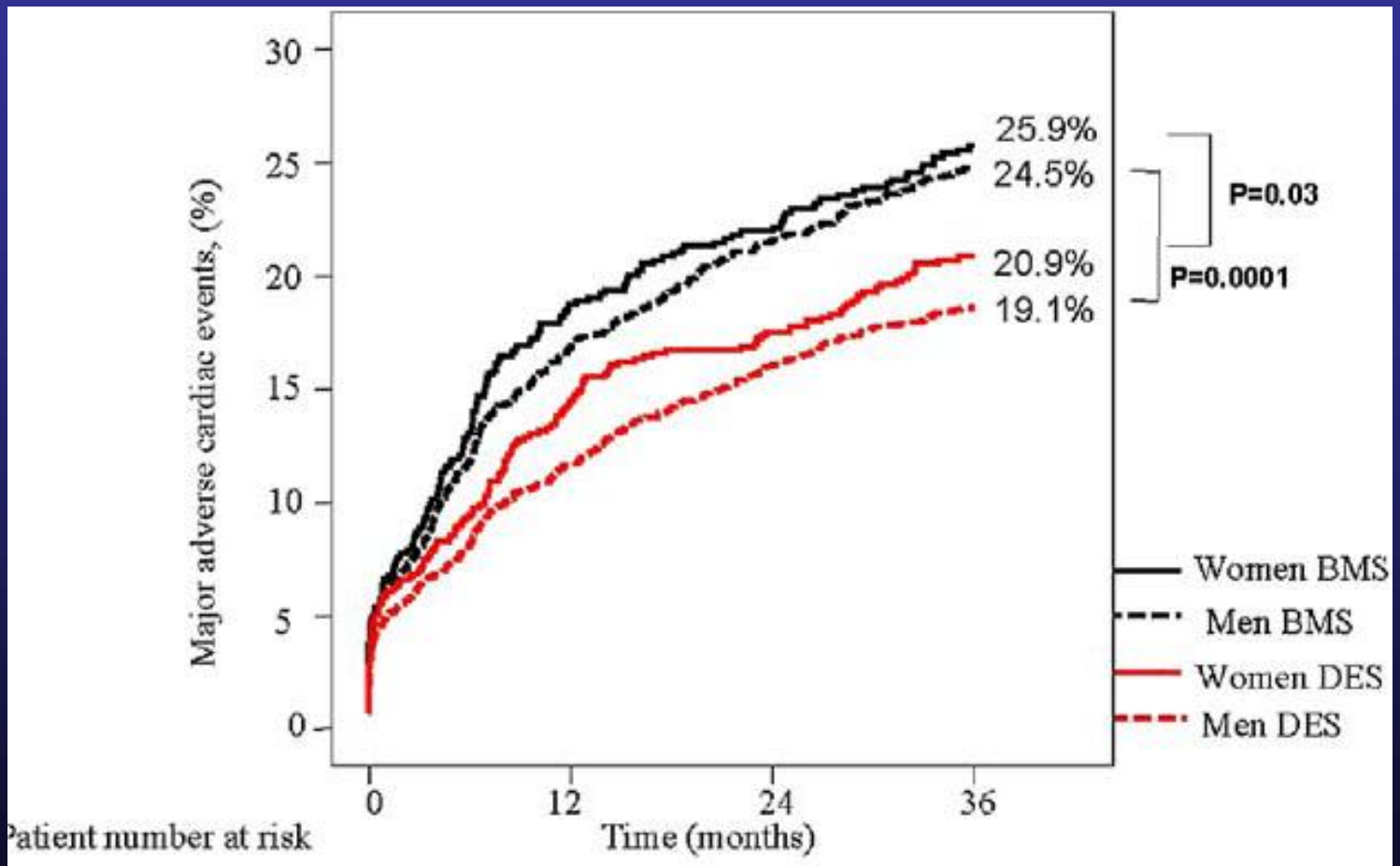


N men =1251
N women=497

Solinas et al. JACC 2007; 22: 2111-6

Impact of Sex on 3-Year Outcome After Percutaneous Coronary Intervention Using Bare-Metal and Drug-Eluting Stents in Previously Untreated Coronary Artery Disease

Insights From the RESEARCH (Rapamycin-Eluting Stent Evaluated at Rotterdam Cardiology Hospital) and T-SEARCH (Taxus-Stent Evaluated at Rotterdam Cardiology Hospital) Registries



Patient number at risk

Women BMS	616	501	480	453
Women DES	797	648	615	440
Men BMS	1530	1318	1228	1174
Men DES	2006	1666	1557	1139

Onuma et al. JACC Cardiovasc Interv 2009; 7: 603-610

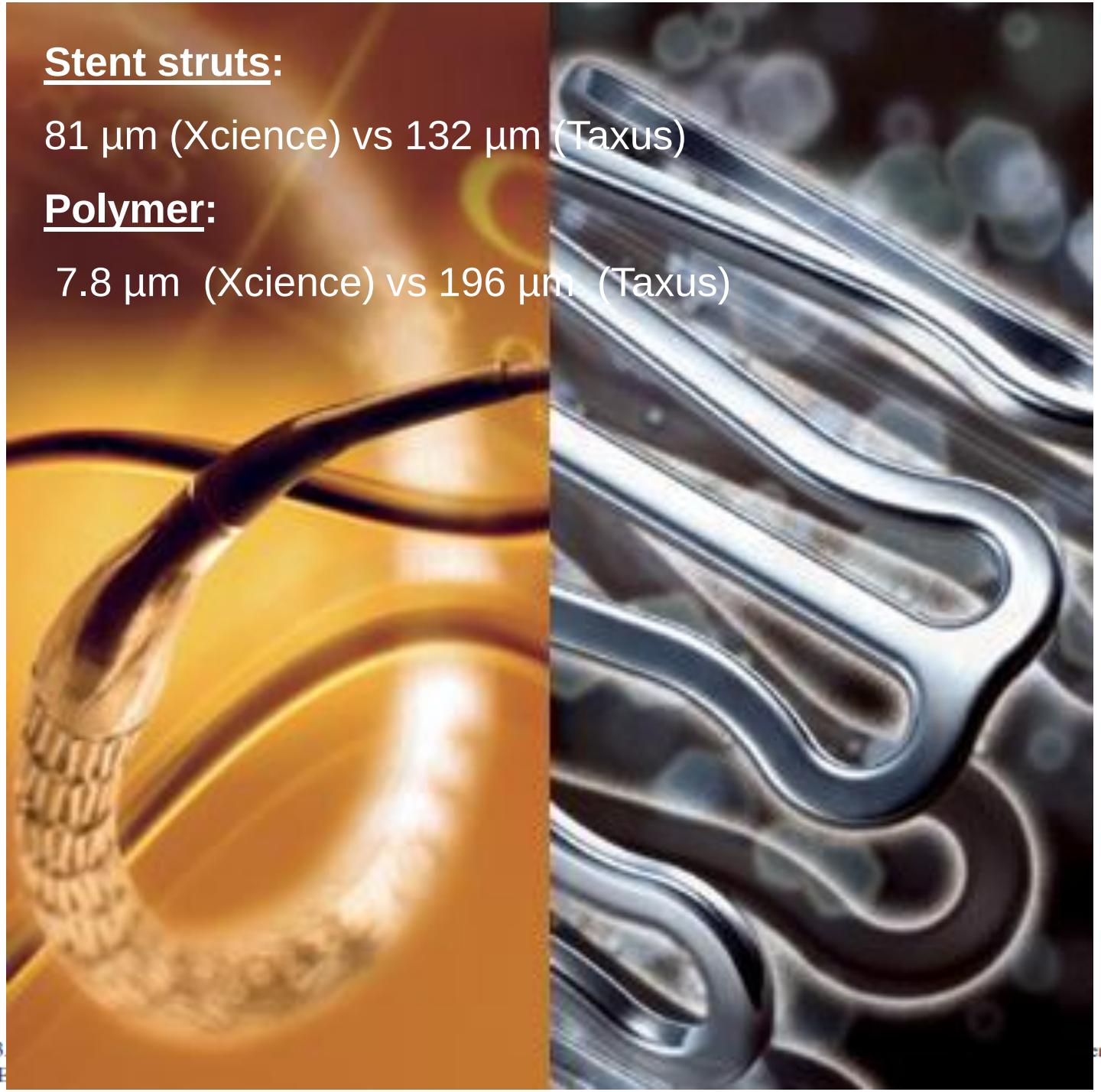


Figure 3 ... ention using XIENCE

SPIRIT WOMEN

Clinical Investigation Title	A Clinical Evaluation of the XIENCE V Everolimus Eluting Coronary Stent System in the Treatment of Women with *de novo* Coronary Artery Lesions

Single Arm Study (SAS) 1600 pts
Randomized Control Trial (RCT) 455 pts
2:1 randomization Xcience vs Cypher

Mean Age	69 yrs
Diabetes	34%
Requiring insulin	8%
Lesions class B2/C	72%
Multivessel treatment	32%
Mean n° lesions treated/pt	1.4

SPIRIT WOMEN:
SINGLE ARM STUDY (SAS)

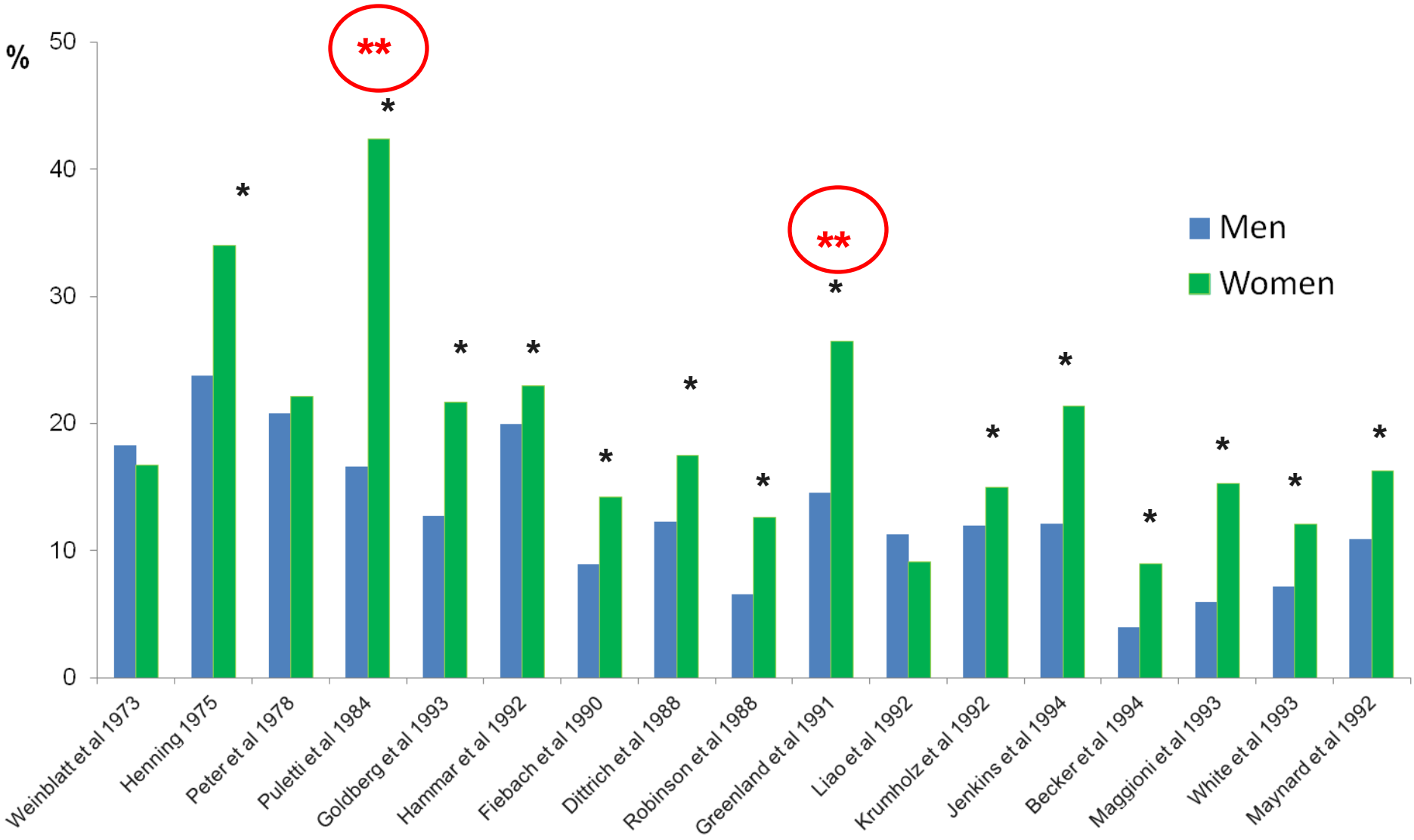
	1 YEAR	2 YEAR
Primary end point (death, MI, TVR)	12.1% (MI 9%)	14.8
TLR	2.3%	3.57%
TVR	3.08%	4.81%
Any revascularization	7%	8.12%
Definite/probable stent thrombosis	0.59%	0.73%

SPIRIT WOMEN: RANDOMIZED CONTROL TRIAL (RCT)

270 days angiographic follow up

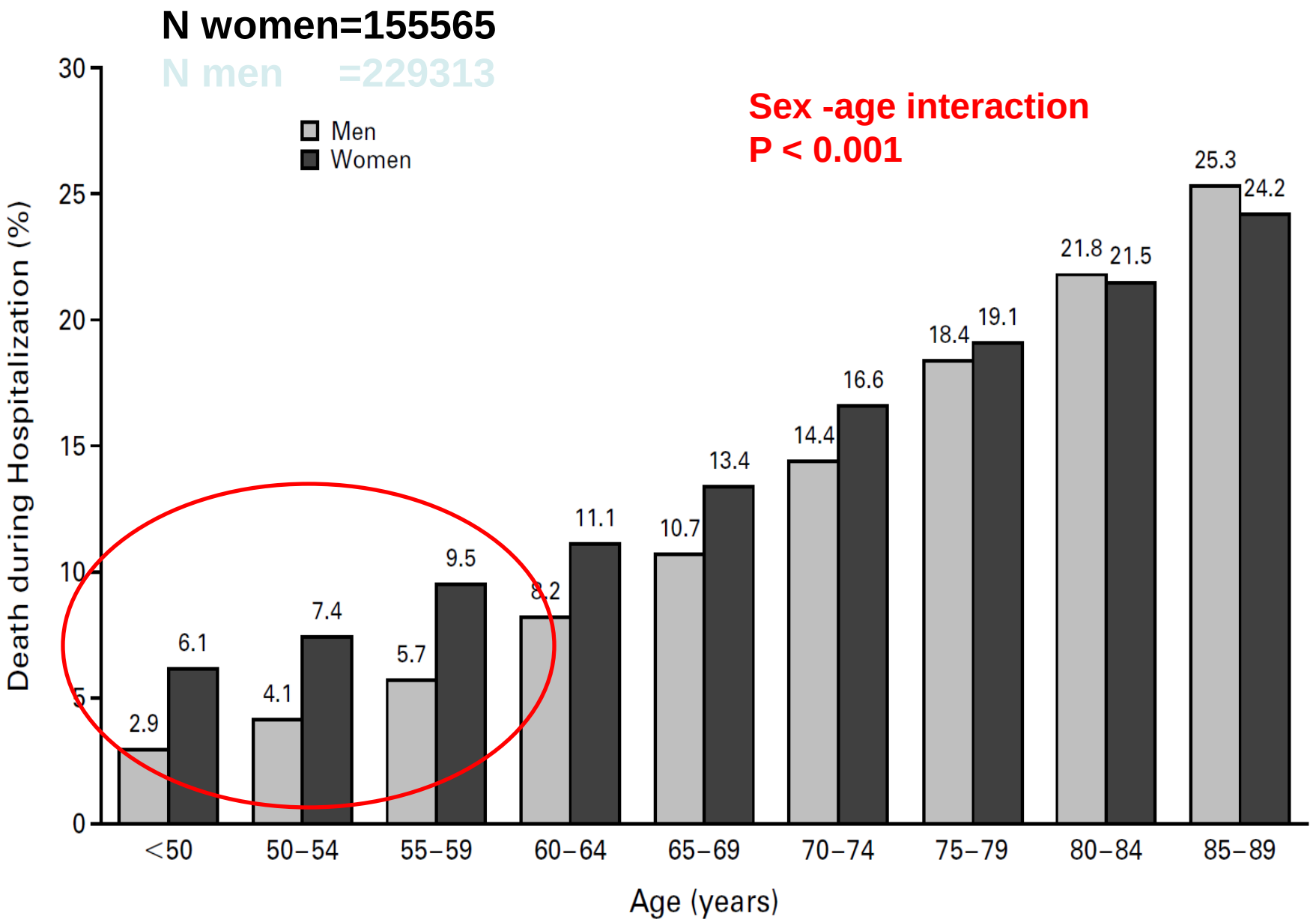
	XCIENCE (EES)	CYPHER (SES)
In stent LL (mm)	0.20	0.12
In stent % angiographic binary ristenosis	3.2%	0.7%
1 year stent thrombosis	0.0%	1.39%
Any revascularization	18.7%	19%
TLR	7.8%	7.3%
TVR	9.5%	10.6%
All MACE	28%	30%

Early Mortality (In-Hospital or First Month) After Myocardial Infarction



Vaccarino et al., *Circulation.* 1995;91:1861-1871

NATIONAL REGISTRY OF MYOCARDIAL INFARCTION 2

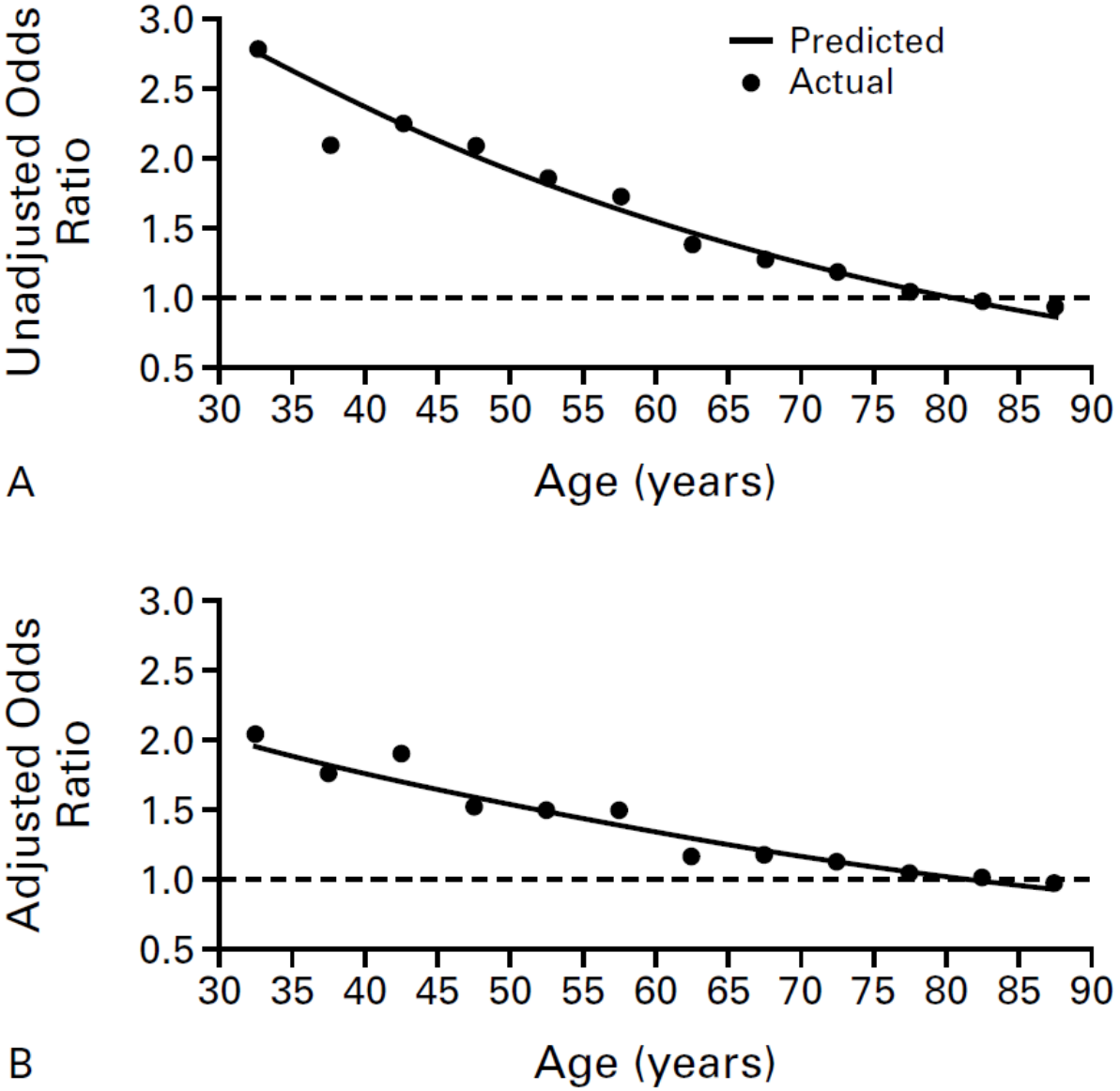


Vaccarino et al., NEJM; 1999;341(4):217-225

NATIONAL REGISTRY OF MYOCARDIAL INFARCTION 2

Women vs. Men

In-hospital death



Race, medical hystory, clinical abnormalities, management in the first 24h, time to presentation

Vaccarino et al., NEJM; 1999;341(4):217-225

TEMPORAL TREND IN SEX-AGE INTERACTION

N women=285735
N men =270715

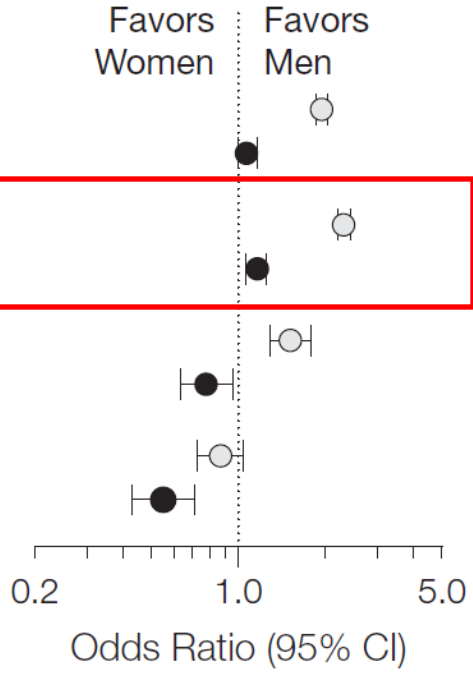
Table 3. Hospital Mortality Rates in Patients Classified According to Sex, Age, and Admission Year

Variable	Hospital Mortality Rate, %[a]						Total Reduction, %	Absolute Rate Reduction	Ratio (1994-1995 vs 2004-2006)[b]
	1994-1995	1996-1997	1998-1999	2000-2001	2002-2003	2004-2006			
Men, y									
<55	2.7	2.6	2.5	2.4	2.2	1.8	33.3	0.9	3.00[c]
55-64	5.7	5.3	4.7	4.4	4.0	3.3	42.1	2.4	1.71[d]
65-74	10.5	9.6	9.4	8.8	7.3	5.9	43.8	4.6	1.54[e]
75-84	18.1	16.1	15.3	14.3	12.6	10.9	39.8	7.2	1.17[f]
≥85	24.7	23.1	21.6	19.6	18.6	16.0	35.2	8.7	1.24[g]
Women, y									
<55	5.1	4.9	3.7	3.6	3.3	2.4	52.9	2.7	NA
55-64	8.0	7.9	7.1	6.4	5.6	3.9	51.3	4.1	NA
65-74	13.6	12.3	11.1	9.8	8.5	6.5	52.2	7.1	NA
75-84	19.7	17.7	16.3	14.6	13.1	11.3	42.6	8.4	NA
≥85	25.8	23.5	21.0	19.7	17.9	15.0	41.9	10.8	NA

Vaccarino et al., Arch Intern Med. 2009;169(1767-1774)

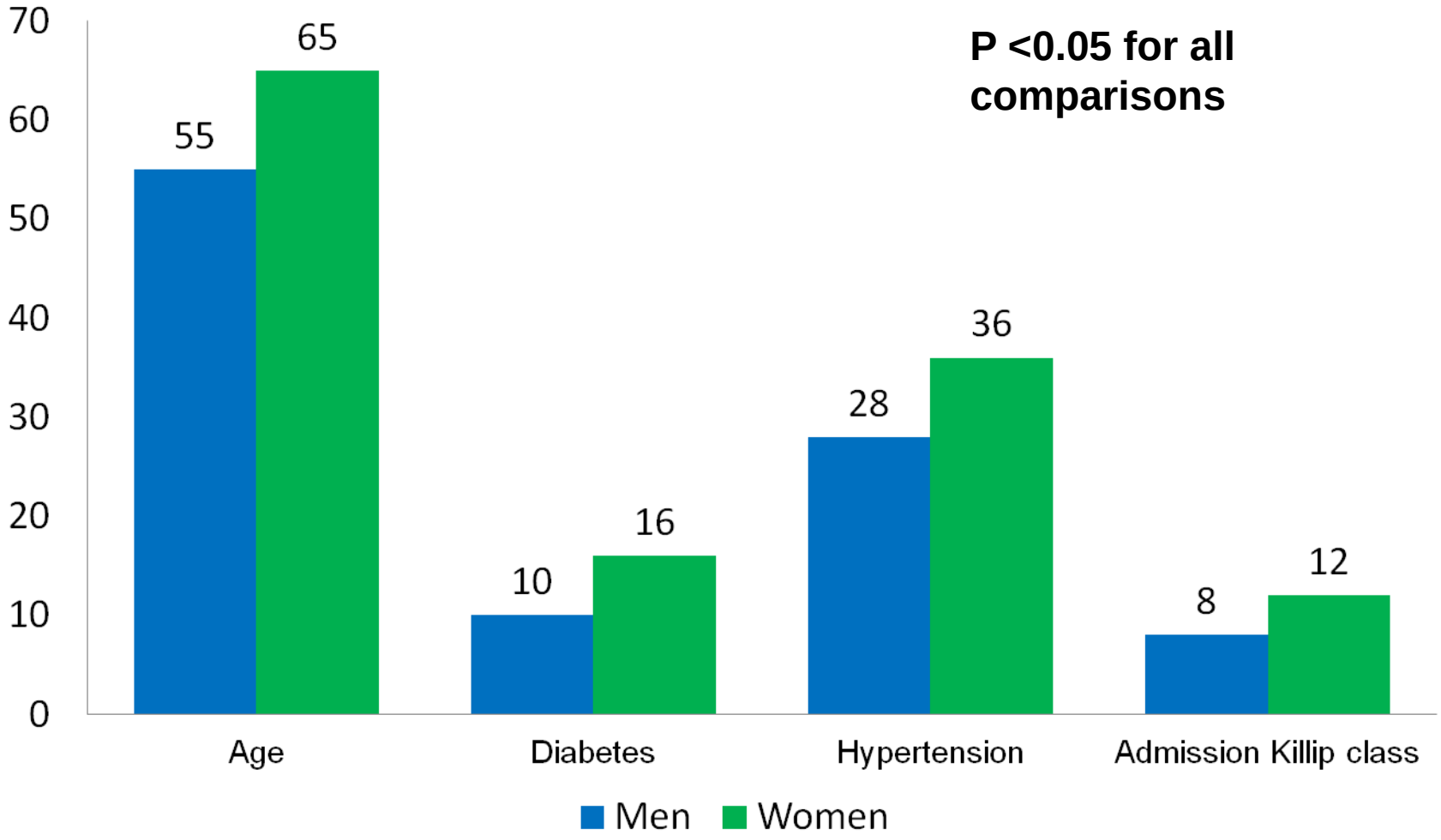
Pooled analysis 11 RCT, years 1993-2006

	Sample Size, No.		30-d Mortality, No. (%)		
	Women	Men	Women	Men	Odds Ratio (95% CI)
All ACS	37 904	97 768	3654 (9.6)	5166 (5.3)	Unadjusted 1.91 (1.83-2.00)
					Adjusted 1.06 (0.99-1.15)
STEMI	25 903	75 577	3198 (12.3)	4385 (5.8)	Unadjusted 2.29 (2.18-2.40)
					Adjusted 1.15 (1.06-1.24)
NSTEMI	4156	10 297	265 (6.4)	447 (4.3)	Unadjusted 1.50 (1.28-1.75)
					Adjusted 0.77 (0.63-0.95)
Unstable angina	7845	11 894	191 (2.4)	334 (2.8)	Unadjusted 0.86 (0.72-1.03)
					Adjusted 0.55 (0.43-0.70)



Berger et al., JAMA 2009;302:874-882

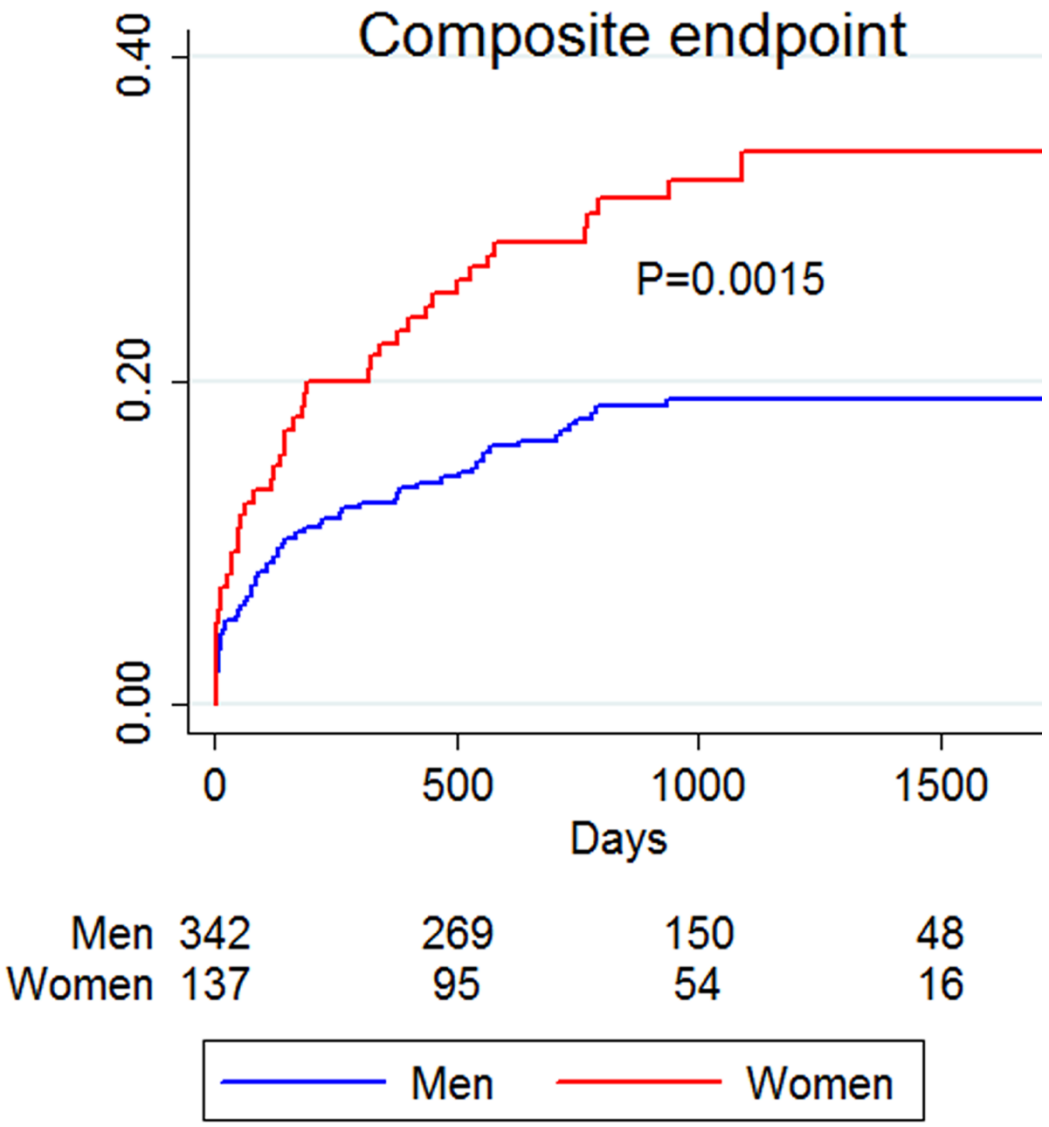
Cardiovascular profile



ICH, Years 2004-2008

N men=343
N women=138

Composite of death, non fatal MI, hospitalization for heart failure



Ferrante G, Presbitero P, et al Can J Cardiol. 2011 Sep 14. [Epub ahead of print]

N men=343
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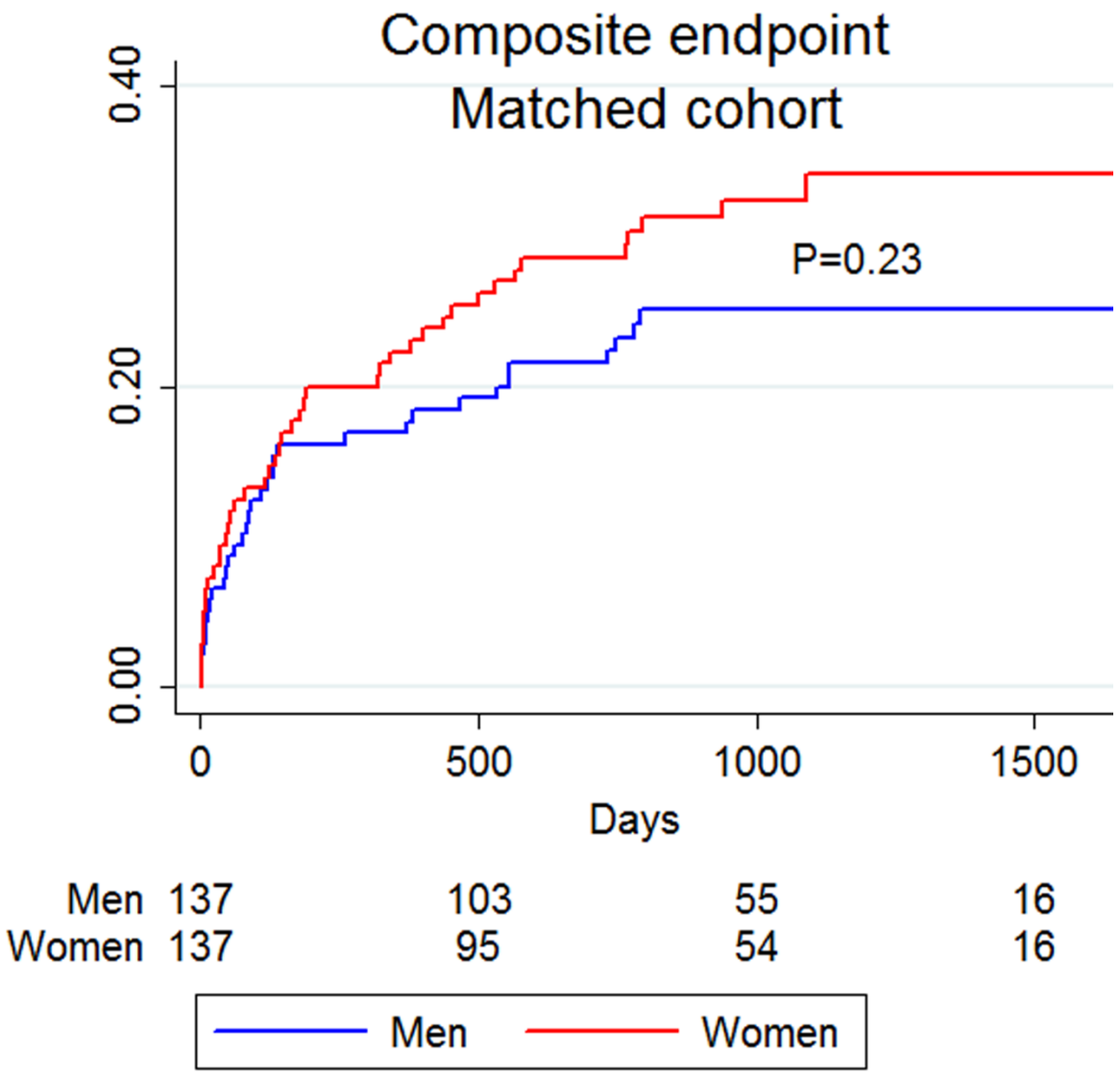
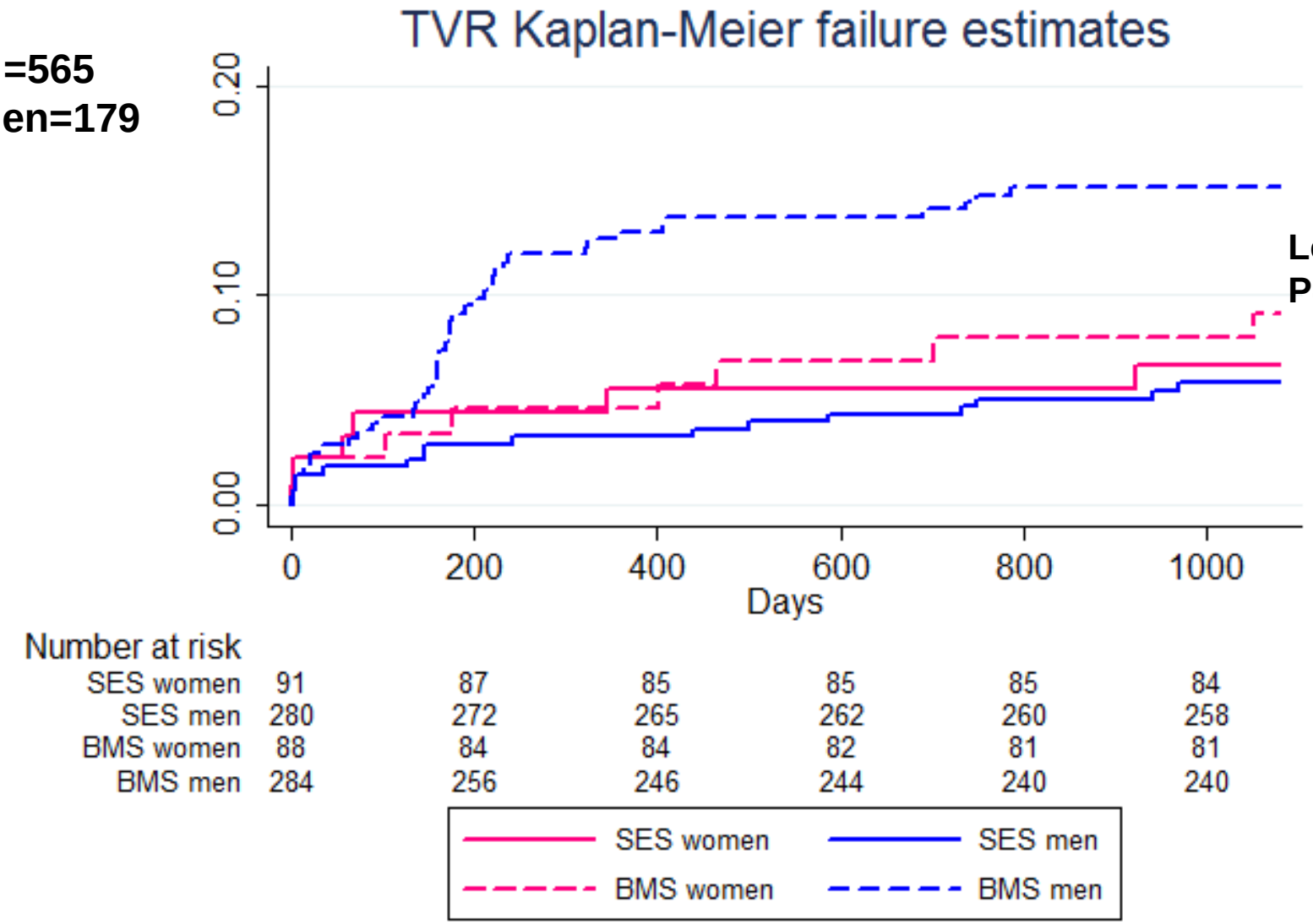


Ferrante G, Presbitero P, et al Can J Cardiol. 2011 Sep 14. [Epub ahead of print]

POST HOC ANALYSIS OF THE MULTISTRATEGY TRIAL

N men =565
N women=179

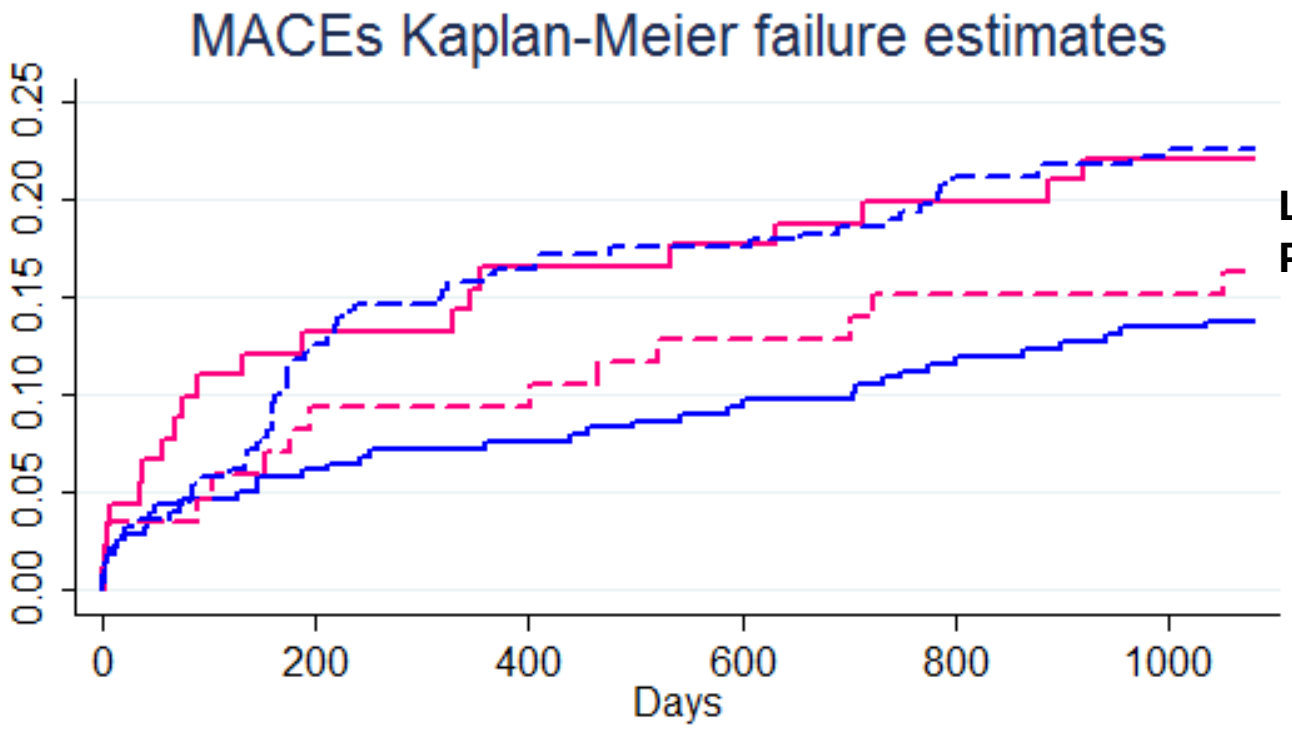


Logrank
P=0.0014

Ferrante G, Presbitero P, Valgimigli M, et al Am Heart J, in press

POST HOC ANALYSIS OF THE MULTISTRATEGY TRIAL

N men =565
N women=179



Logrank P=0.037

Number at risk

SES women	91	79	75	74	72	70
SES men	280	263	253	248	242	237
BMS women	86	78	78	75	73	73
BMS men	280	245	233	230	220	217

SES women — SES men
BMS women — BMS men

Ferrante G, Presbitero P, Valgimigli M, et al Am Heart J, in press

STENT THROMBOSIS ACCORDING TO SEX

	MEN (%)	WOMEN (%)	FUP
Ravel+Sirius:			
SES (Cypher)	0.6	0.4	1 yr
BMS	0.3	1.2	
Research *(registry)*:			
SES+PES (Taxus)	2.6	2	3 yrs
BMS	1.5	1.8	
ENDEAVOR:			
ZES (Endeavor)	0.5	1.3	2 yrs
BMS	1.4	1.4	
SPIRIT III:			
EES (Xcience)	1.1	1.6	3 yrs
PES	2	1	
Multistrategy:			
SES	3.5	5.4	3 yrs
BMS	4.9	3.4	

FACTORS RELATED TO BLEEDING AFTER PCI IN ICH (1997-2010, 7822 pts, 22% women)

	Bleeding	No bleeding	P
Age	68.8±10.9	65.4±11.2	0.014
Creatinine	1.4±1.4	1.2±0.6	0.022
Women	6%	94%	0.01
Men	2.7%	97.3%	
STEMI	7%	93%	0.0001
NSTE-ACS	2%	98%	
GP IIb/IIa Yes	5%	95%	0.026
No	2.6%	97.4%	

PERIPHERAL VASCULAR COMPLICATIONS ACCORDING TO SEX

(ICH: 1997-2010, 7822 pts, 22% women)

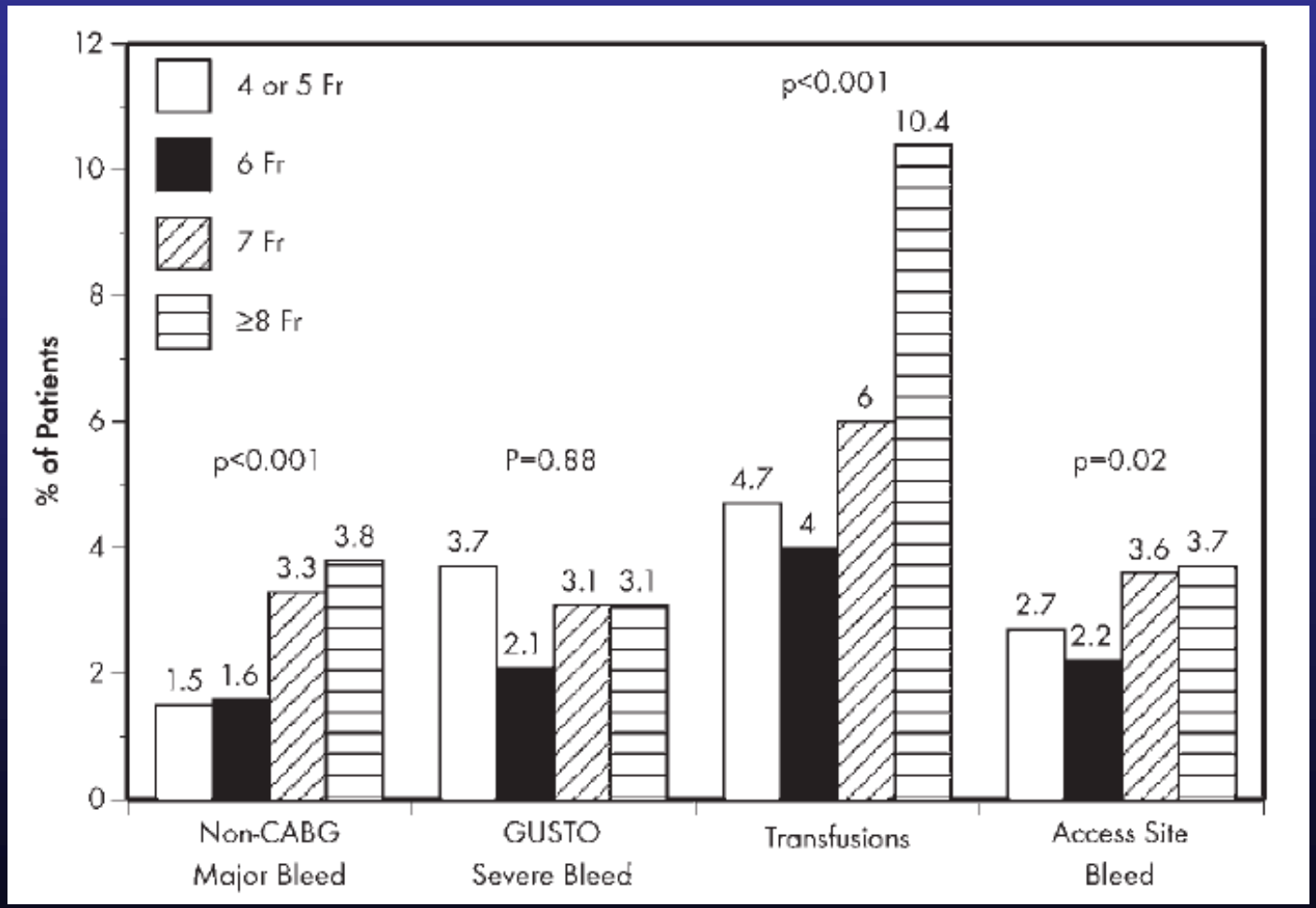
	Men (%)	Women (%)	p
1997-2003	0.8	2.7	<0.001
2003-2006	1.8	2.8	0.37
2006-2010	0.8	1	ns

Bleeding Complications in Patients With Acute Coronary Syndrome Undergoing Early Invasive Management Can Be Reduced With Radial Access, Smaller Sheath Sizes, and Timely Sheath Removal

	Femoral ($n = 8{,}922$) (%)	Radial ($n = 413$) (%)
TIMI major bleeding	8.8	5.8
CABG-related major bleeding	6.8	4.6
Non–CABG-related major bleeding	2.0	1.2
GUSTO severe bleeding	2.5	2.7
Transfusions[b]	4.8	0.9
Access site bleeding	19.3	22.5

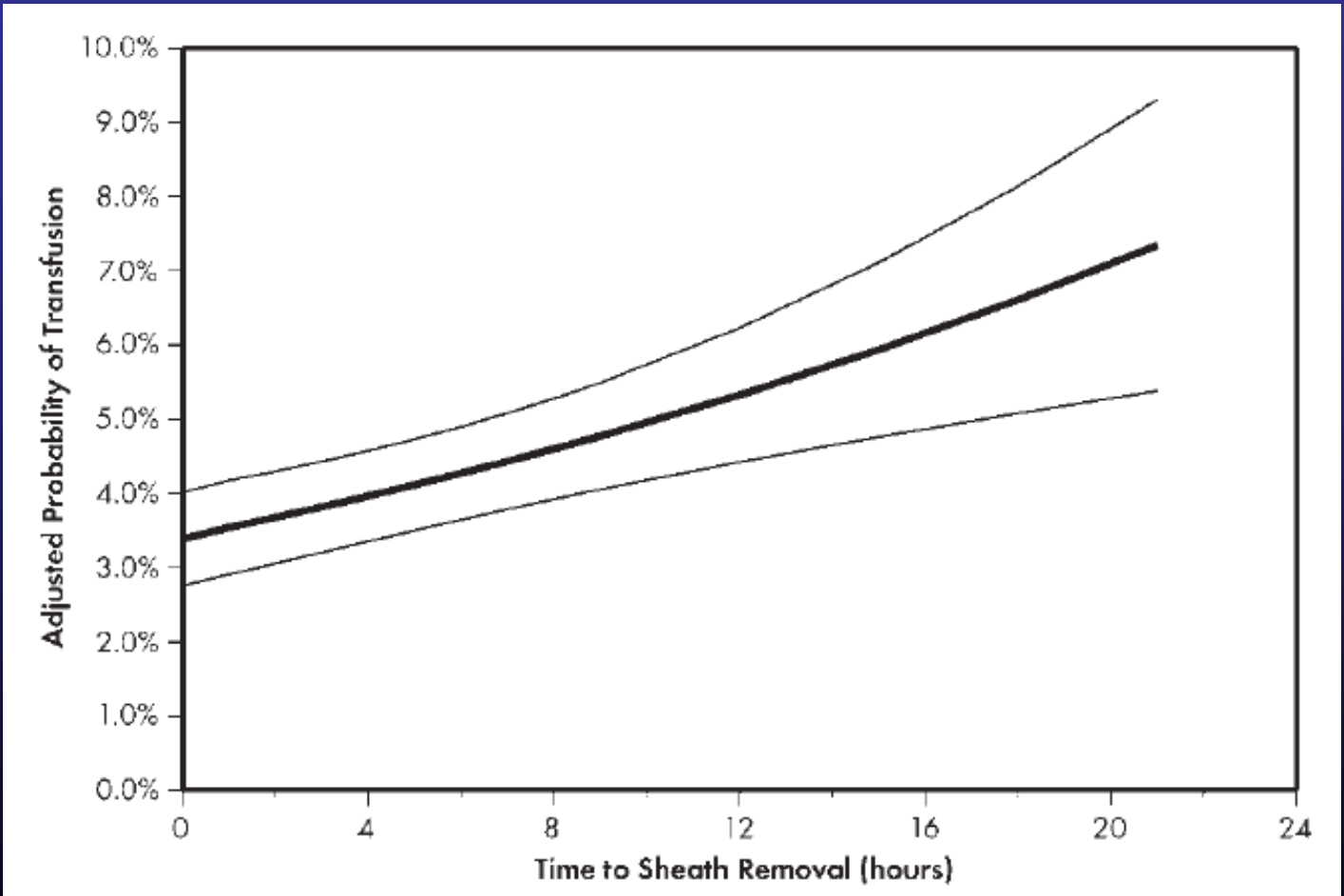
Cantor WJ et al, Catheter Cardiovasc Intervent 2007

Bleeding Complications in Patients With Acute Coronary Syndrome Undergoing Early Invasive Management Can Be Reduced With Radial Access, Smaller Sheath Sizes, and Timely Sheath Removal



Cantor WJ et al, Catheter Cardiovasc Intervent 2007

Bleeding Complications in Patients With Acute Coronary Syndrome Undergoing Early Invasive Management Can Be Reduced With Radial Access, Smaller Sheath Sizes, and Timely Sheath Removal



Cantor WJ et al, Catheter Cardiovasc Intervent 2007

CONCLUSIONS 1

• **Acute and chronic coronary disease** in women undergoing PCI has nowadays the same procedural success and complication rates as men, despite worst basic conditions

• Long term restenosis after **BMS** implantation is better in women than in men, maybe because of estrogen hormones and receptors that reduce the inflammatory response to vessel injury

• **DES** implantation reduce restenosis rate in both sexes, in different way depending on factors, such as type, quantity and time release of the drug ("-limus" stents seem to be better), the polymer used and stent strut thickness

CONCLUSIONS 2

• **DES** requiring a shorter period of double antiplatelet treatment can reduce the bleeding risk, that is higher in women

• Non-diabetic women undergoing primary PCI seem to benefit from BMS

… **WAITING TO HORIZONS-AMI TRAIL GENDER DIFFERENCE RESULTS**

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Istituto di Ricovero e Cura a Carattere Scientifico

Patrizia Presbitero

CAD and stent in women

GRAZIE

XXIV Giornate Cardiologiche Torinesi

Torino, 20 Ottobre 2011

Procedural outcomes of pts, BMS and PES according to gender

ICH-PCI-database (1999 - 2005)

	BMS			PES		
N°	Men 2811	Women 704	p	Men 642	Women 168	p
Procedural success (%)	97.9	98.1	0.881	98	100	0.05
Death, (%)	0.7	1.3	0.15	0.5	0	1.0
AMI (%)	0.8	0.7	1.00	0.8	0	0.60
CABG (%)	0.4	0.8	0.11	0.5	0.6	1.0
MACE (%)	1.7	2.8	0.06	1.8	0.6	0.32
Acute vessel thrombosis (%)	0.4	0.3	1.0	0.4	0	1.0
Periph. vasc. complications (%)	0.8	2.7	<0.001	1.8	2.8	0.37

Sex Differences in Neointimal Hyperplasia Following Endeavor *Zotarolimus*-Eluting Stent Implantation

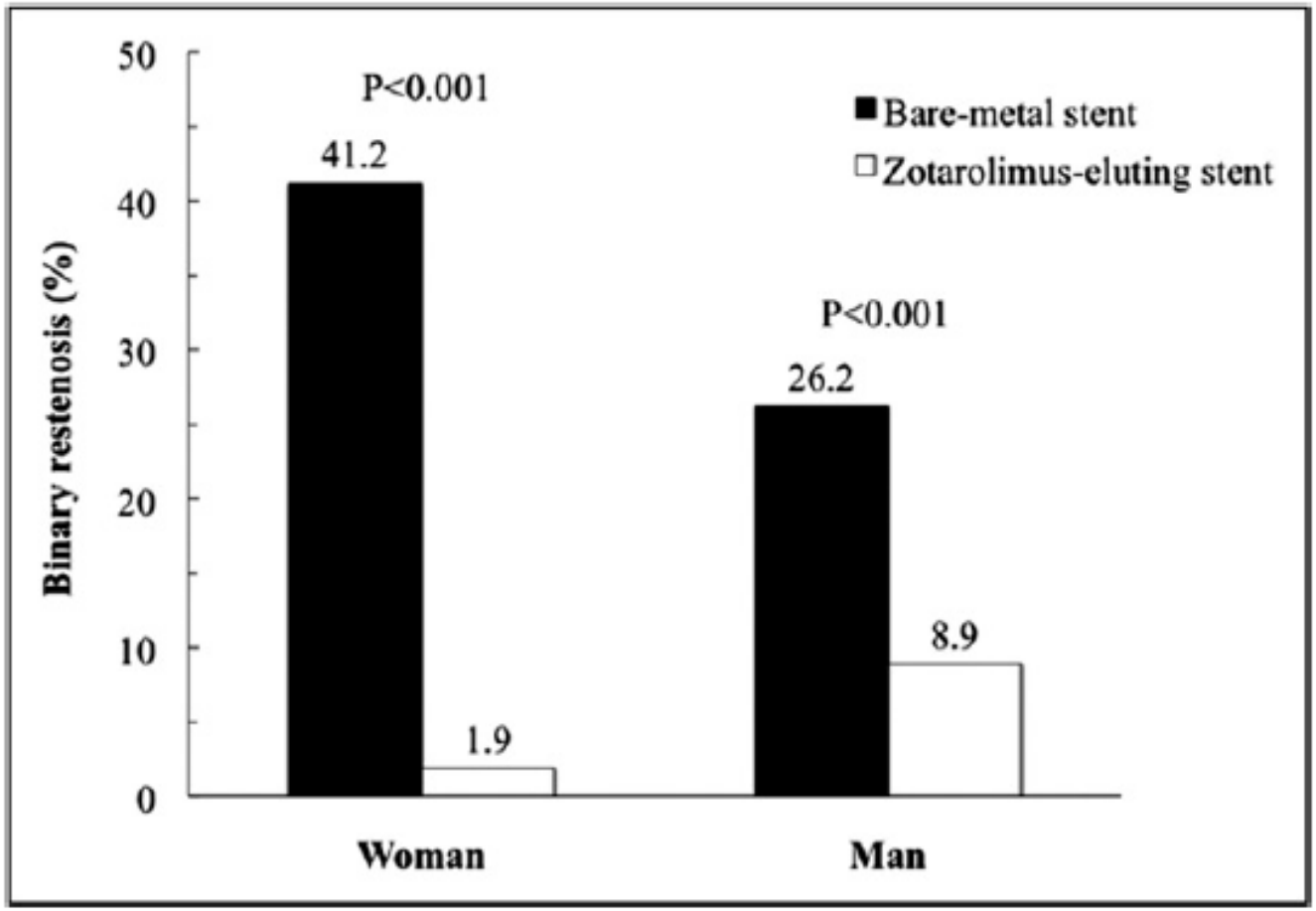
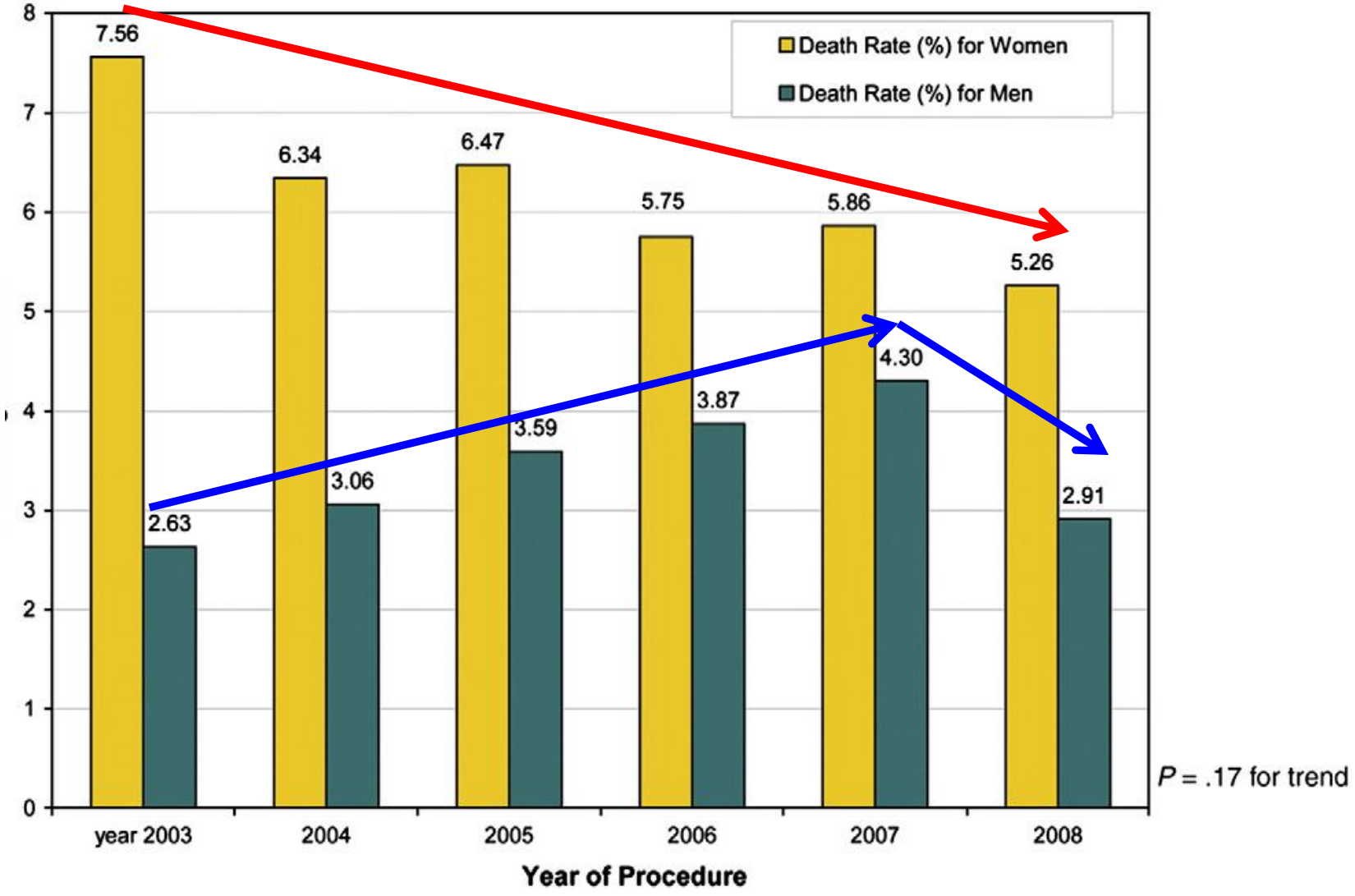


Figure 1. The rate of binary restenosis, defined as >50% diameter stenosis on angiography at 8-month follow-up, was significantly lower in patients treated with ZES than those with BMS in both genders.

Nakatani et al, Am J Cardiol 2011; 108:912-917

N women = 2384
N men = 6014

BMC2 registry



Jackson et al. Am Heart J 2011;161:106-112.e1

BMC2 registry

Women vs. men

	All data		
In-hospital outcomes	**OR**	**95% CI**	***P* value**
Emergency CABG	1.06	0.70-1.58	.79
All CABG	0.83	0.64-1.08	.17
Gastrointestinal bleeding	1.74	1.36-2.21	<.0001
Contrast nephropathy*	1.75	1.46-2.11	<.0001
Nephropathy requiring dialysis	1.28	0.79-2.06	.31
Postprocedure transfusion	2.84	2.48-3.24	<.0001
Stroke	1.85	1.15-2.97	.01
MI	1.01	0.64-1.60	.96
Death	1.79	1.45-2.22	<.0001
Revascularization (same lesion site)	1.19	0.80-1.78	.38
Vascular complication	2.13	1.75-2.59	<.0001

Jackson et al. Am Heart J 2011;161:106-112.e1

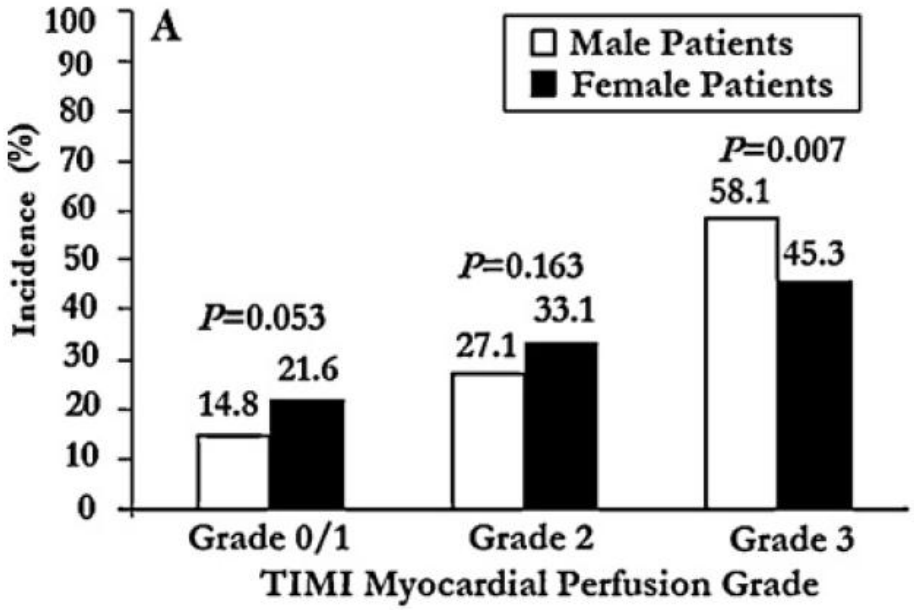
BMC2 registry

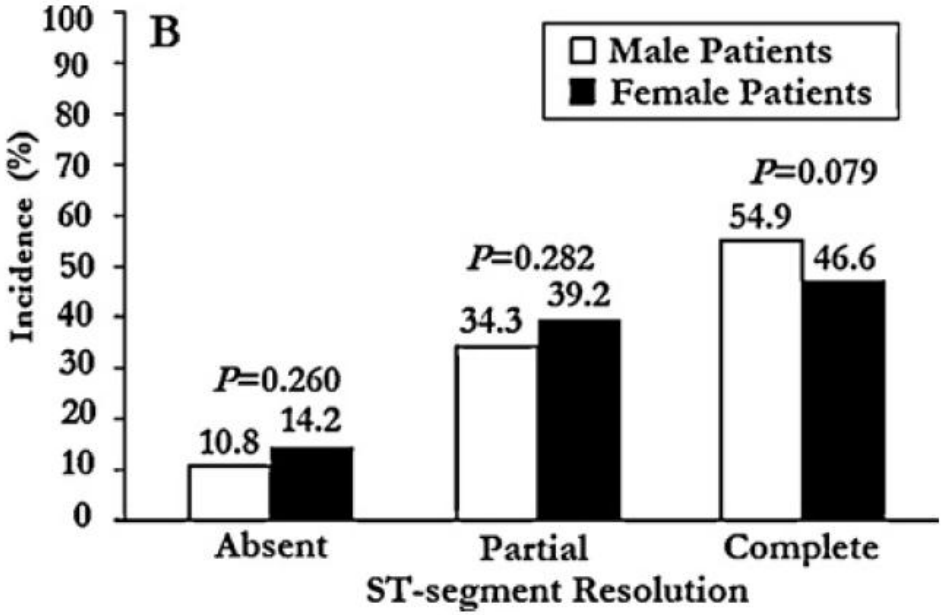
Women vs. men

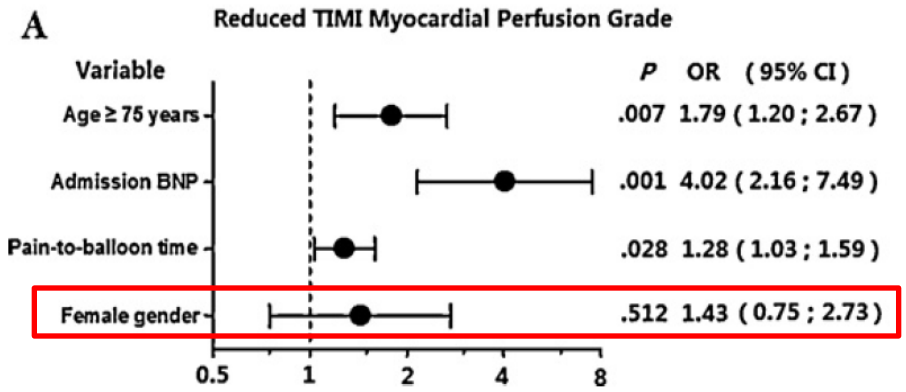
In-hospital outcomes	Matched data (2131 women and 2131 matched men) OR	95% CI	*P* value
Emergency CABG	1.04	0.60-1.79	.64
All CABG	0.85	0.61-1.19	.35
Gastrointestinal bleeding	1.19	0.87-1.63	.33
Contrast nephropathy*	1.09	0.87-1.37	.44
Nephropathy requiring dialysis	0.85	0.48-1.50	.56
Postprocedure transfusion	1.88	1.57-2.24	<.0001
Stroke	1.37	0.76-2.49	.29
MI	0.87	0.49-1.57	.87
Death	1.30	0.98-1.72	.07
Revascularization (same lesion site)	1.31	0.76-2.26	.33
Vascular complication	1.65	1.26-2.14	.0002

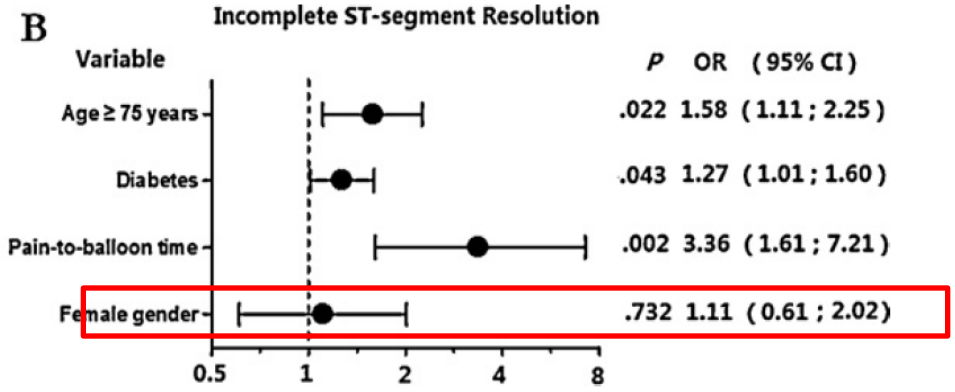
Jackson et al. Am Heart J 2011;161:106-112.e1

Sex and myocardial reperfusion



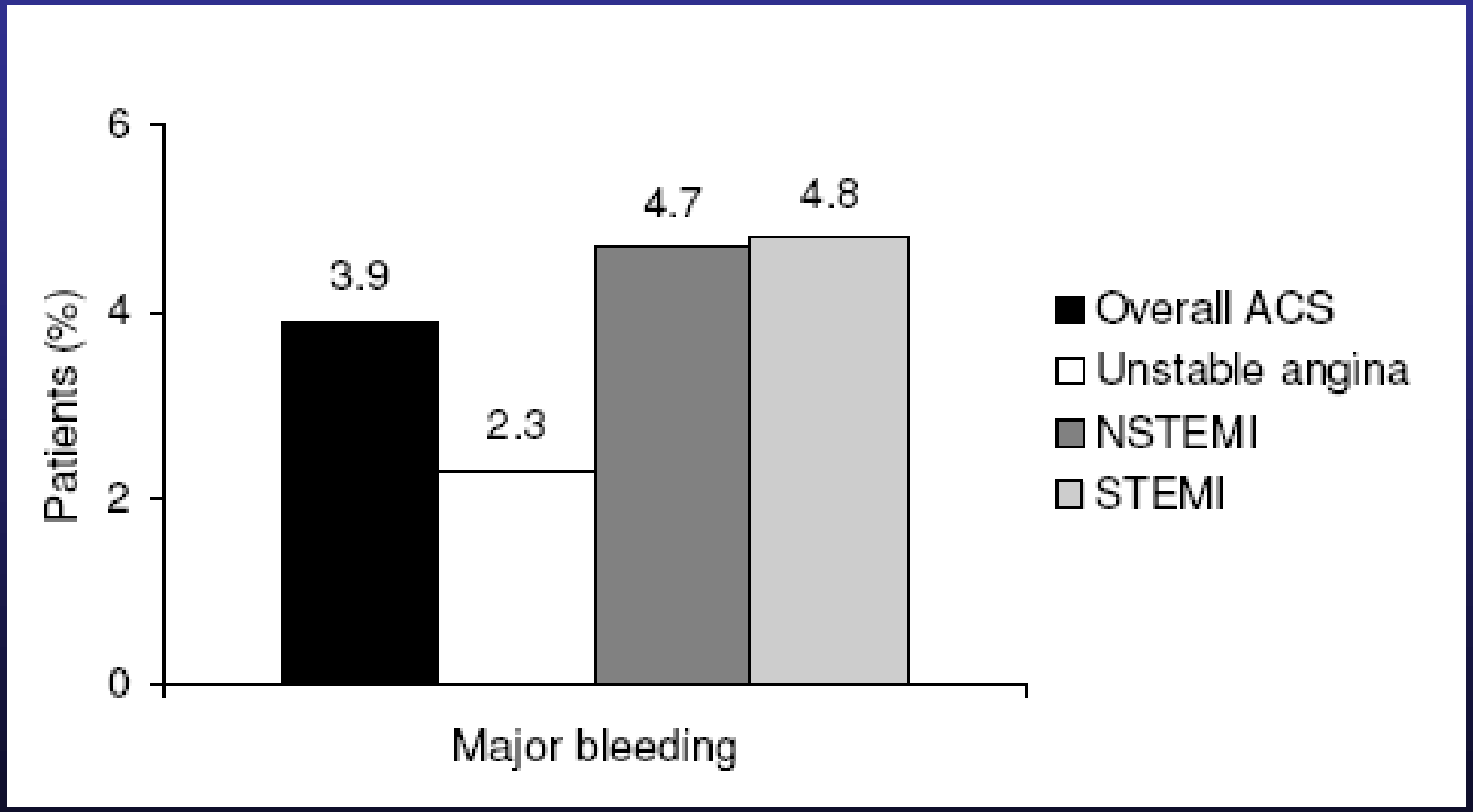






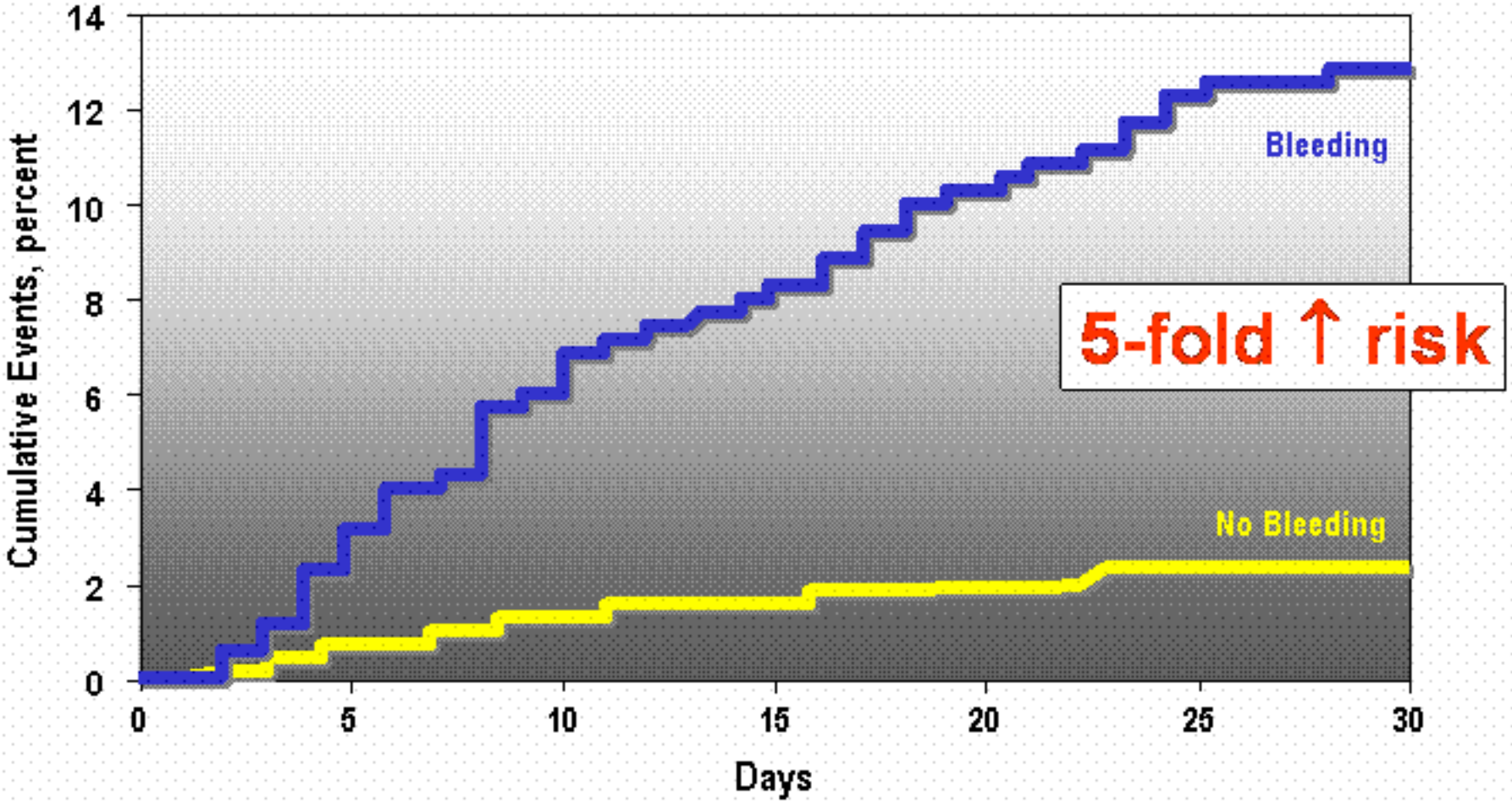
Pu et al. Atherosclerosis 2011;148:852–6

FREQUENCY OF MAJOR BLEEDING
Global Registry of Acute Coronary Events (GRACE)



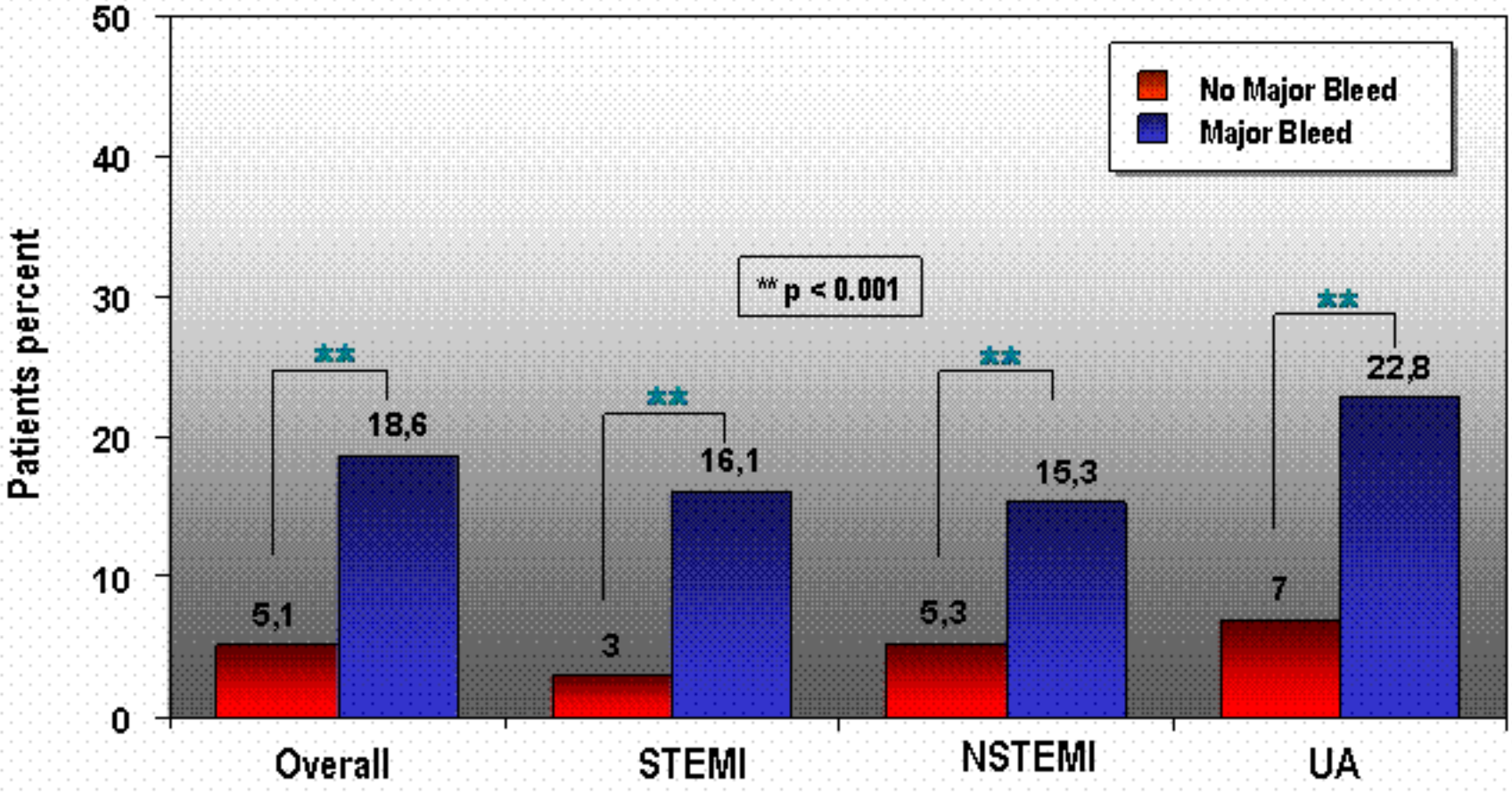
Moscucci M et al, Eur Heart J 2003

30 Day Death According to Bleeding
OASIS Registry, OASIS-2, CURE



Eikelboom Circulation 2006; 114: 774 - 782

In-Hospital Death Rates in Patients According to Major Bleeding



Moscucci M et al. Eur Heart J 2003; 24:1815-23.

FACTORS ASSOCIATED WITH MAJOR BLEEDING

- ADVANCED AGE
- FEMALE SEX
- HISTORY OF BLEEDING
- RENAL INSUFFICIENCY
- ANTICOAGULANT MEDICATION
- PROCEDURES

GRACE

Predictors of In-Hospital Bleeding in AMI Within 30 Days

Variable	Total Cohort,† HR (95% CI)
History of prior bleeding	2.70 (1.84–3.96)
Glomerular filtration rate 30 mL/min‡	
Early bleeding (0–2 d)	2.40 (1.76–3.29)
Late bleeding (3–30 d)	1.83 (1.25–2.68)
Pulmonary artery catheter	
Early bleeding (0–1 d)	1.65 (1.18–2.29)
Late bleeding (2–30 d)	2.04 (1.53–2.72)
Percutaneous coronary intervention	1.94 (1.51–2.50)
Treatment with IV vasopressors in first 24 h	1.94 (1.57–2.39)
Female sex	
Early bleeding (0–2 d)	1.36 (1.12–1.65)
Late bleeding (3–30 d)	1.84 (1.44–2.35)
Age per 10-y increase	
Early bleeding (0–2 d)	1.35 (1.25–1.47)
Late bleeding (3–30 d)	1.53 (1.36–1.72)
Fibrinolytic therapy	1.50 (1.16–1.92)
Treatment with GP IIb/IIIa inhibitors in first 24 h	1.48 (1.23–1.77)

WHY WOMEN SHOULD HAVE MORE BLEEDING RISK in PCI?

- OLDER AGE
- LOWER BASELINE HAEMOGLOBIN
- SMALLER VESSEL SIZE
- **MORE PERIPHERAL VASCULAR COMPLICATIONS**
- TENDENCY TO OVER-ANTICOAGULATION BECAUSE OF SMALLER BODY MASS

WHY WOMEN SHOULD HAVE MORE BLEEDING RISK in PCI?

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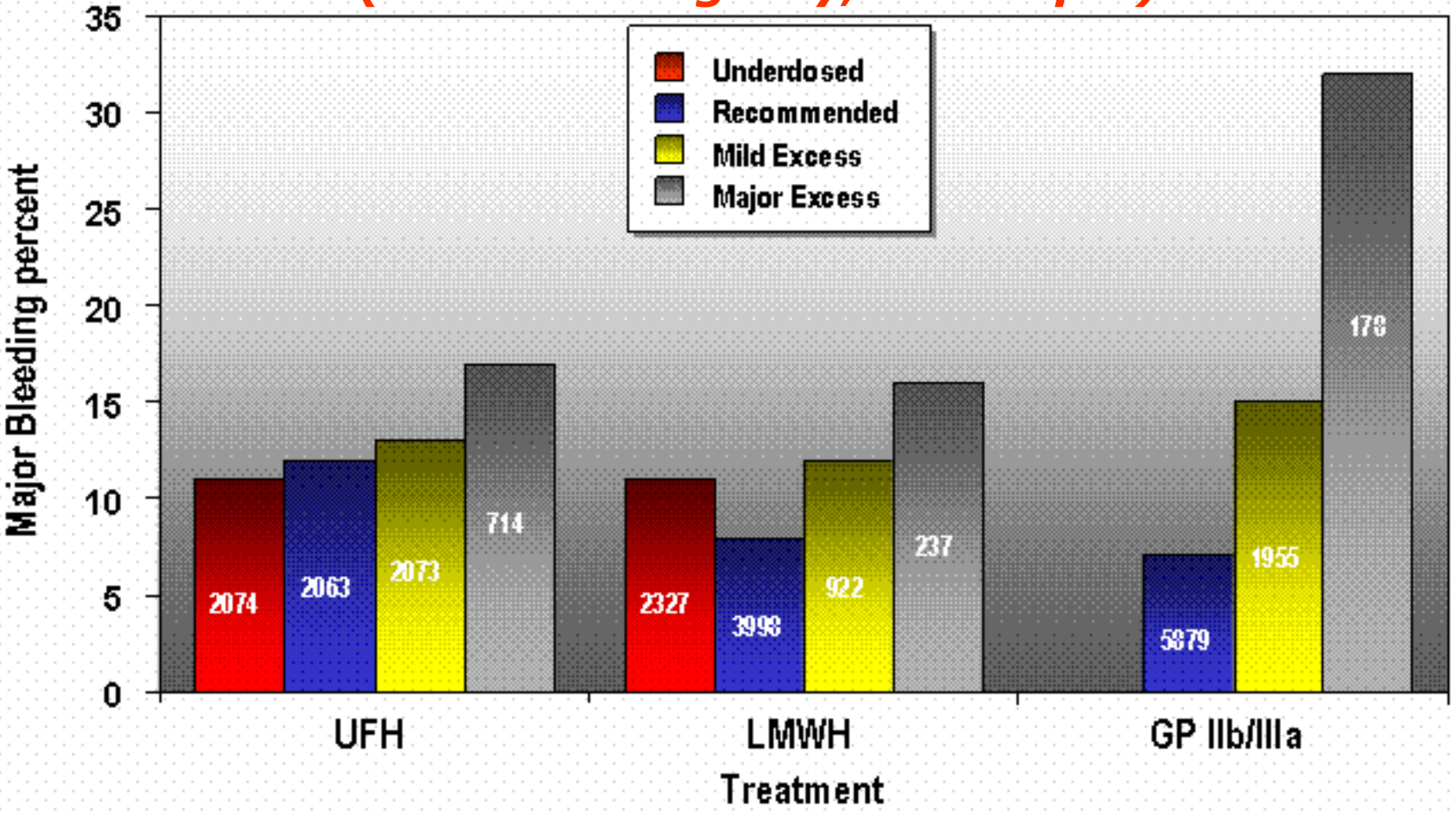
Dosage of Drugs and Major Bleeding

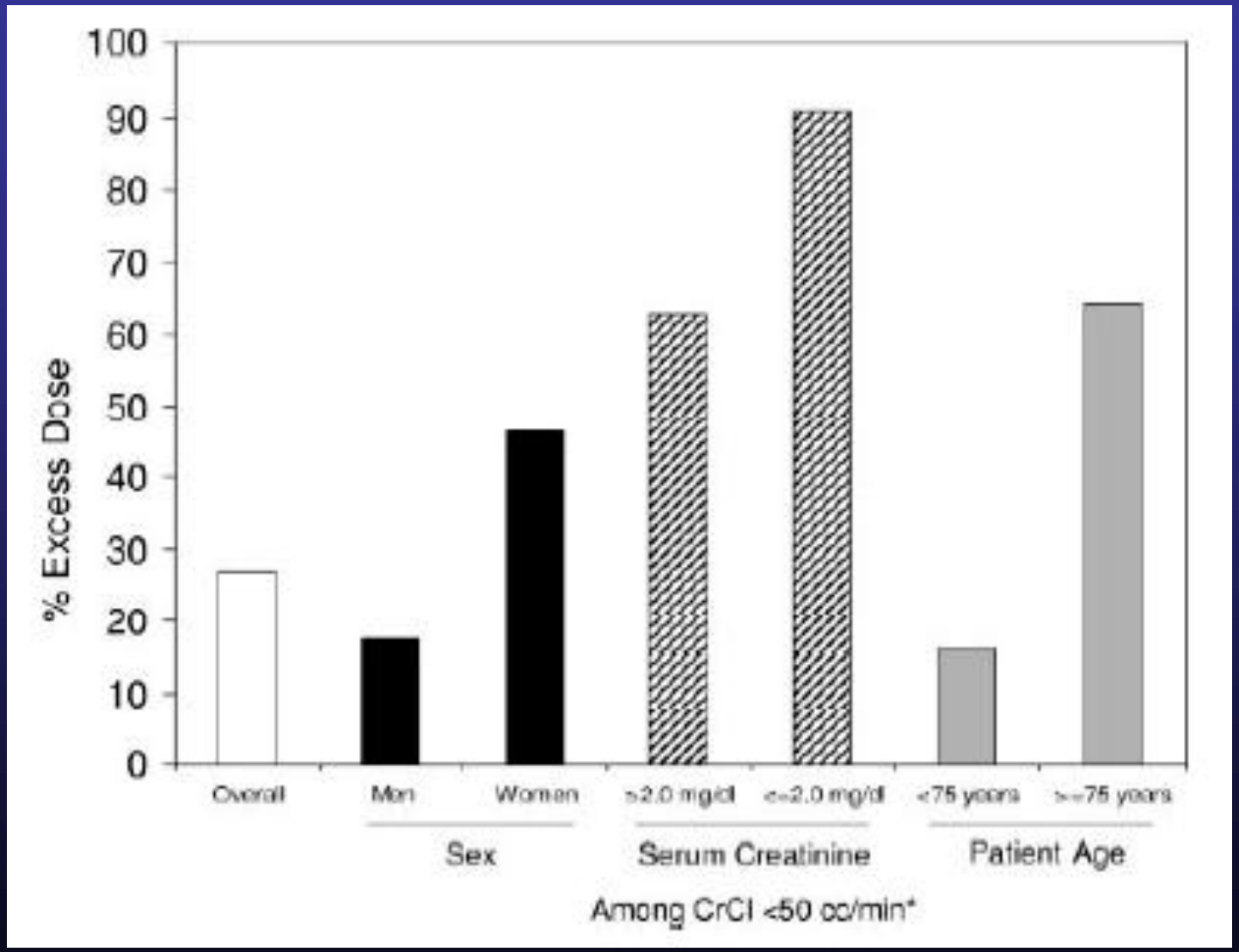
Dose Group

(CRUSADE registry, 30136 pts)



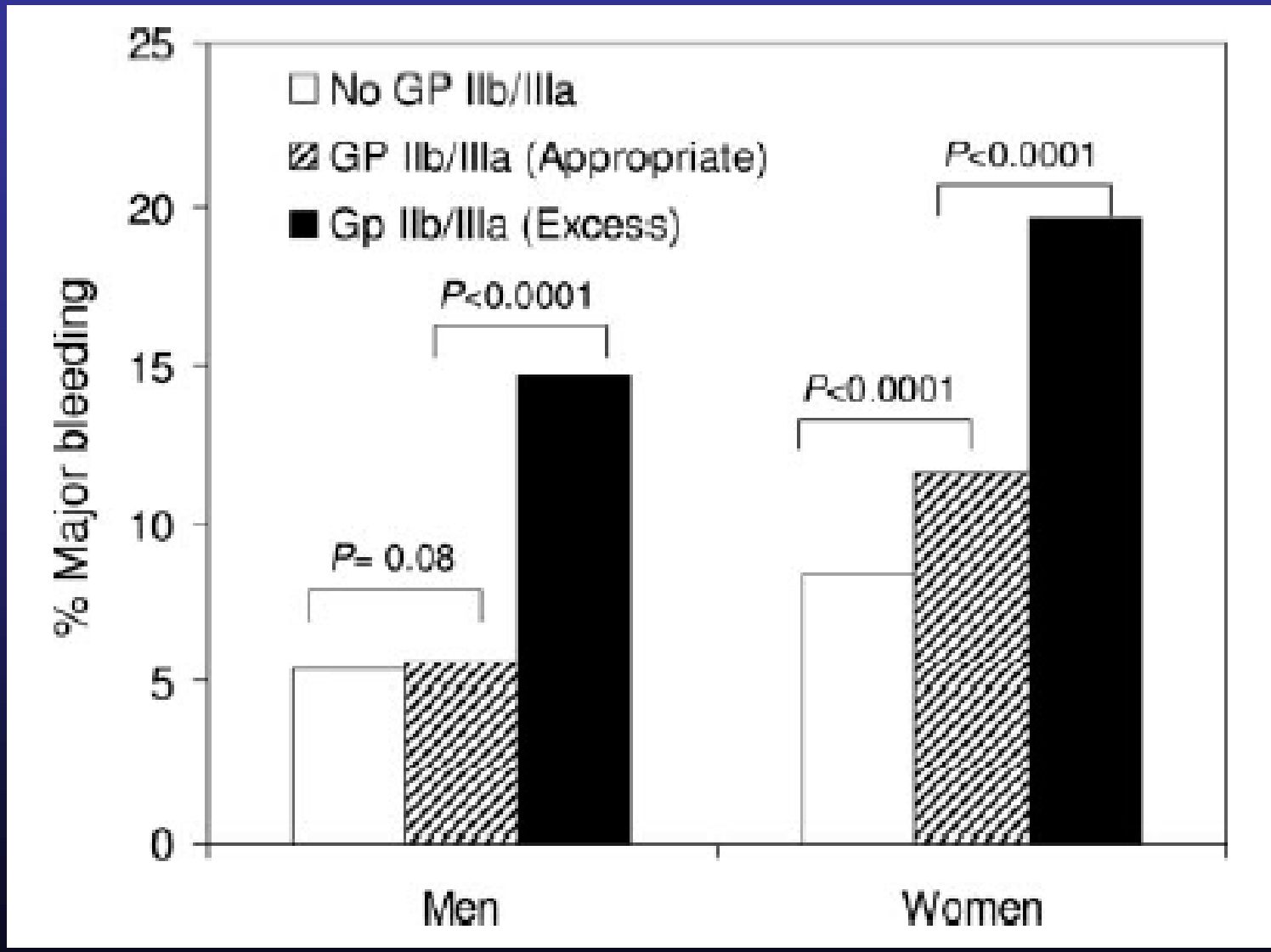
Alexander JAMA 2004; 294:3108

EXCESS DOSING OF GP IIb/IIIa INHIBITORS



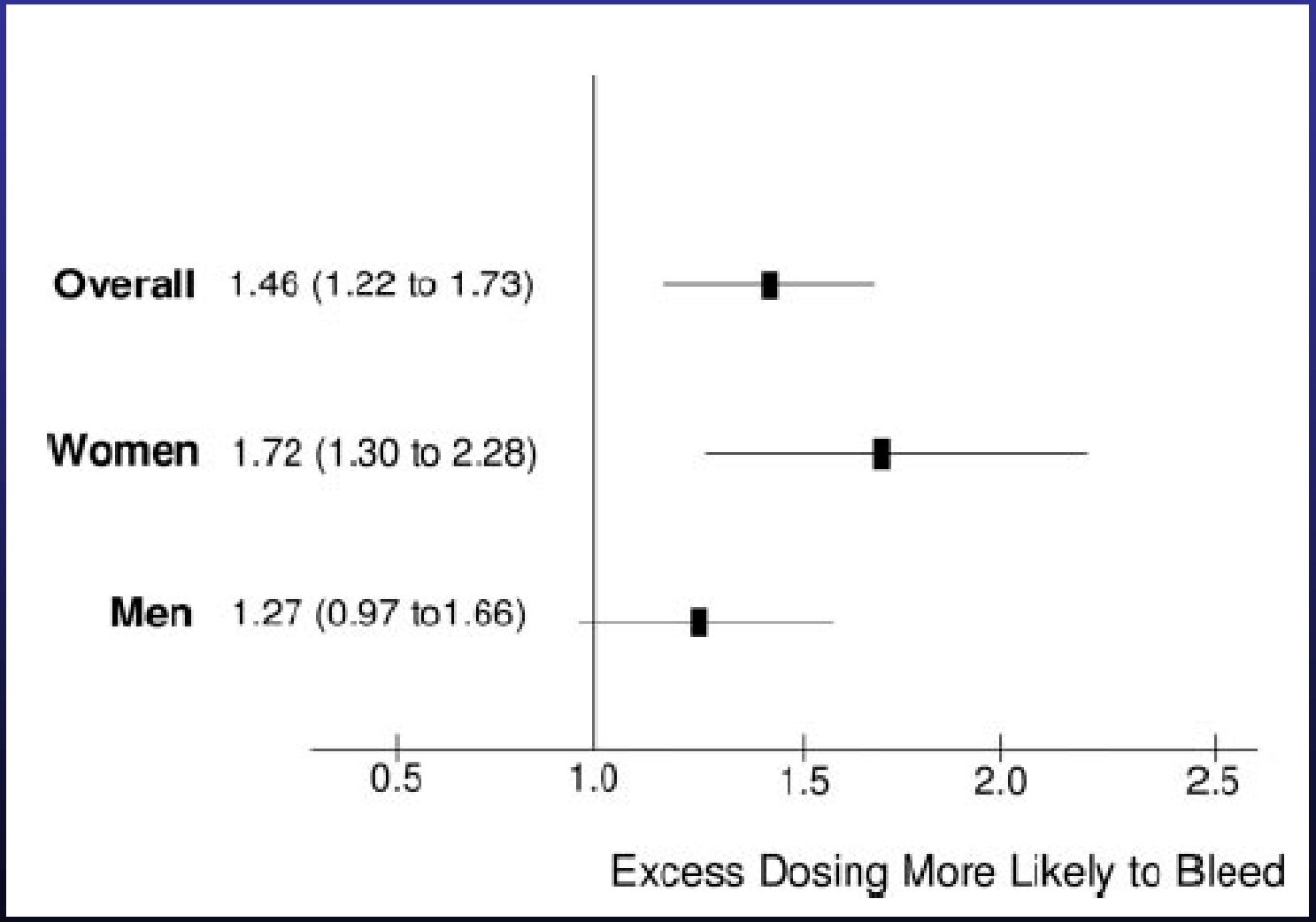
Alexander KP et al, Circulation 2006

MAJOR BLEEDING BY SEX



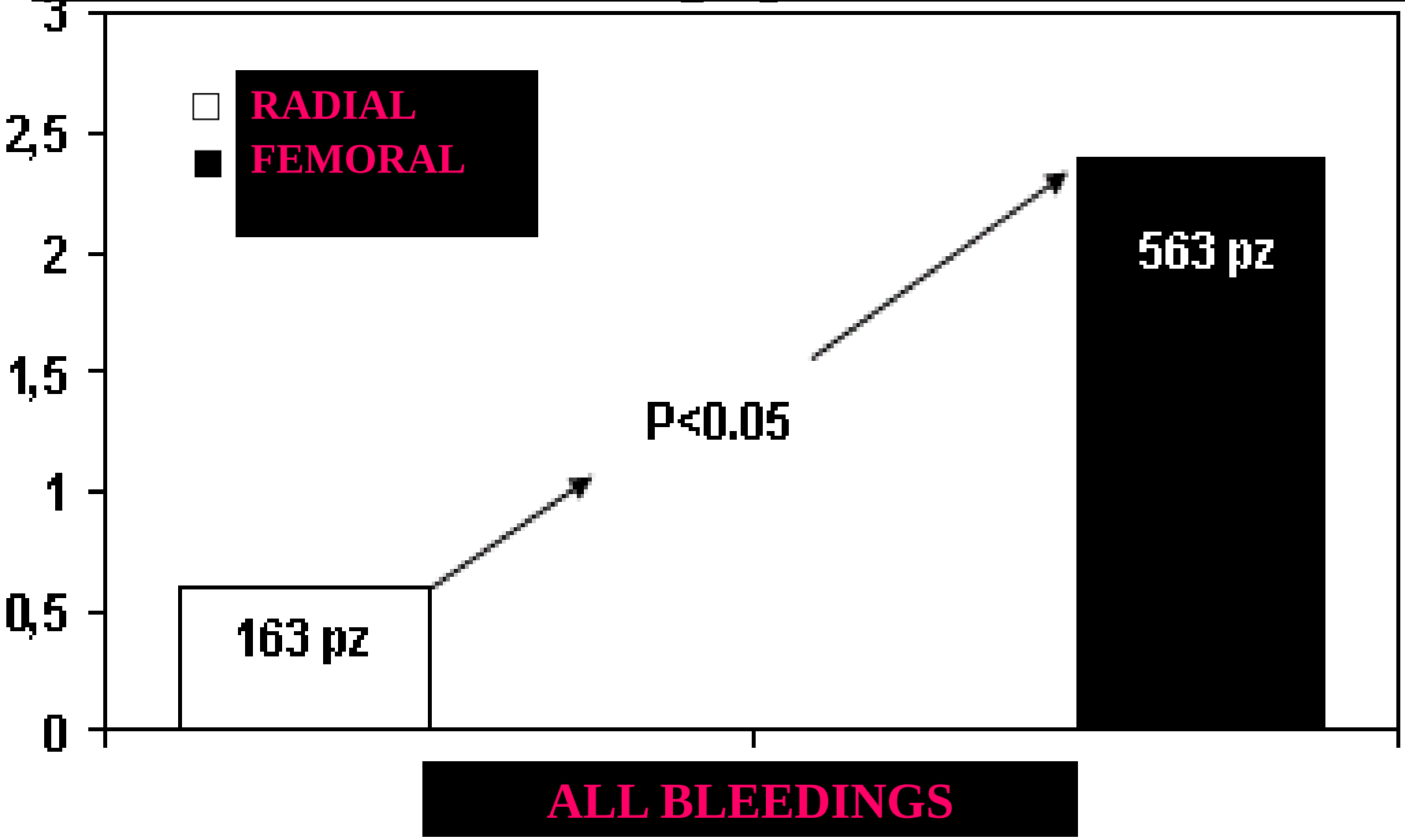
Alexander KP et al, Circulation 2006;114:1380-1387

RELATIONSHIP BETWEEN EXCESS DOSE OF GP IIb/IIIa INHIBITORS vs NO EXCESS DOSE AND MAJOR BLEEDING



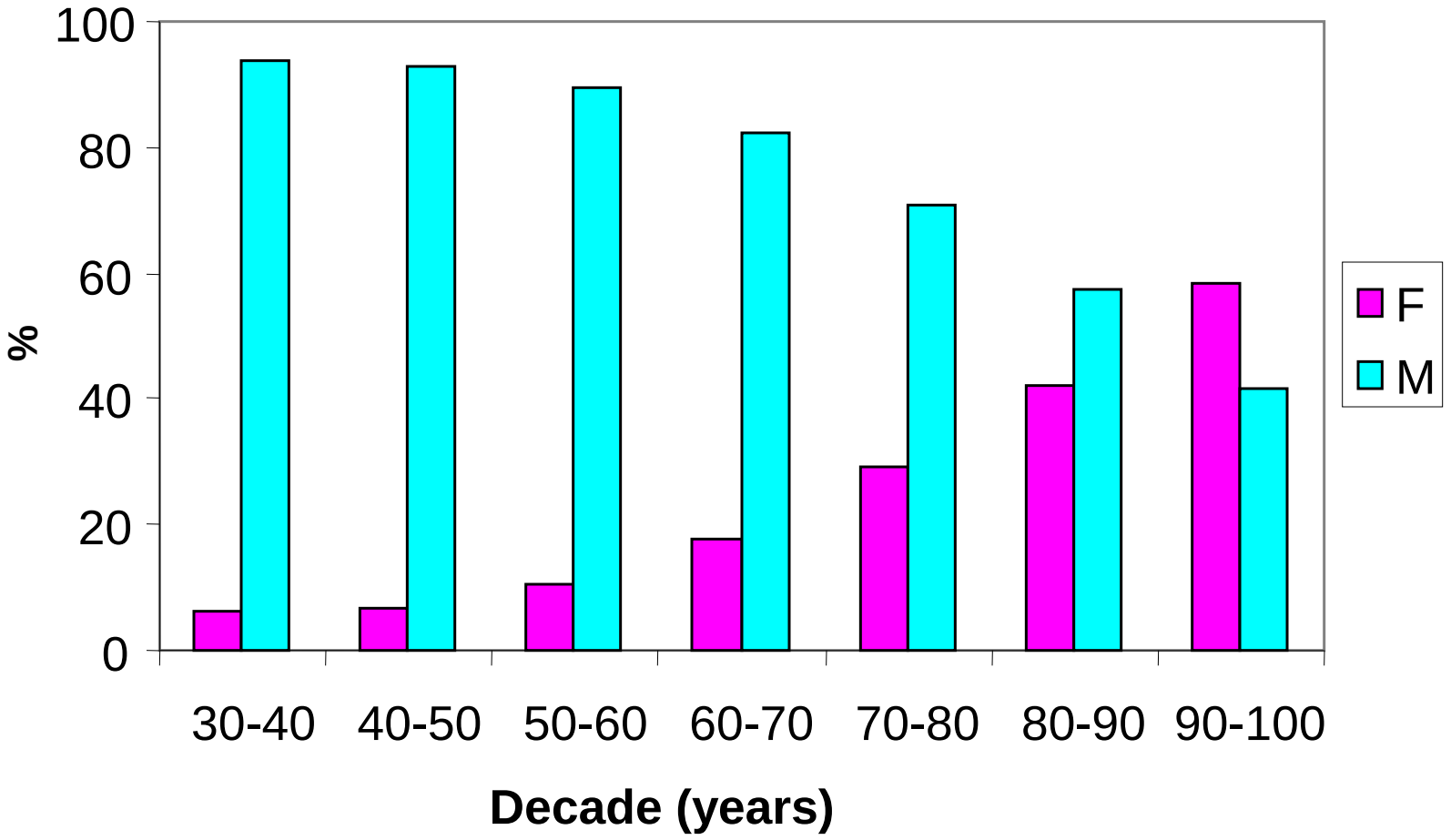
Alexander KP et al, Circulation 2006

Radial access in pts with STEMI treated with primary PTCA



modified from Valsecchi et al, Ital Heart J 2003

Relative frequency of females and males undergoing PCI in Humanitas data base (1999-2006) (6376 Procedures)



Age- and sex-related utilisation of cardiac procedures and interventions: a multicentric study in Italy

Antonio Boccia[a], Gianfranco Damiani[b], Marcello Maria D'Errico[c], Edoardo Farinaro[d], Pasquale Gregorio[e], Nicola Nante[f], Pasquale Santè[g], Roberta Siliquini[h], Gualtiero Ricciardi[b,i*] ARPIC Collaborative Group (Giuseppe La Torre[i], Paolo Villari[a], Stefania Boccia[b], Luigi Sirianni[b], Saverio Stranges[d], Paola Simioli[e], Lucia Garramone[f], Rosario Gregorio[g], Davide Minniti[h])

Abstract

Background: Cardiovascular diseases represent the leading cause of death in Italy and one of the most frequent cause of disability in the elderly. The aim of the study was to investigate the influence of age and sex of patient on the utilisation of cardiac procedure and interventions in Italy. *Methods:* Retrospective analysis of 2805 patients' medical case notes in cardiology, internal medicine and elderly clinics in six Italian Regions during the period 1996–1997, considering coronary catheterisation (CC), percutaneous transluminal coronary angioplasty (PCTA), coronary artery bypass grafting (CABG), thrombolysis (THR) and permanent pacemaker (PPM) implantation. *Results:* Older patients (more than 75 years old) were less likely to undergo CC (OR = 0.062). Trends for age and sex did not achieve significance for CAGB (OR = 0.815 for older patient). Age is a strong predictor of receiving PTCA, with the oldest group of patients being discriminated (OR = 0.093 for people older than 75 years), and the same trend was observed for THR (OR = 0.264 for patients older than 75 years). For PPM, older patient has a higher likelihood of receiving this type of intervention (OR = 3.45 for 65–74 years, and OR = 7.77 for patients older than 75 years). As far as gender of patients is concerned, statistically significant differences for all cardiac procedures or interventions considered were not found. *Conclusions:* Clinical management of older patients with cardiac disease in Italy may be different from that of younger patients. One possible explanation would be that these patients are being discriminated against mainly because of their age.

Advanced age and not female sex is the main factor for not referring patients to coronary catheterisation

Boccia A et al, Int J Cardiology 2005; 101: 179-184

MULTIVARIATE ANALYSIS
for factors affecting restenosis

ICH-PCI-database (1999 - 2005)

	BMS		PES	
	M	F	M	F
	2811	704	642	168
VESSEL SIZE	+	+	+	+
LESION LENGHT	+	+	+	-
CTO	+	-	-	-
DIABETES	+	+	-	-

Sex-Specific Outcomes Following Revascularization with Zotarolimus-Eluting Stents: Comparison of Angiographic and Late-Term Clinical Results

-6 ENDEAVOR trials

-2132 pts (608 female)

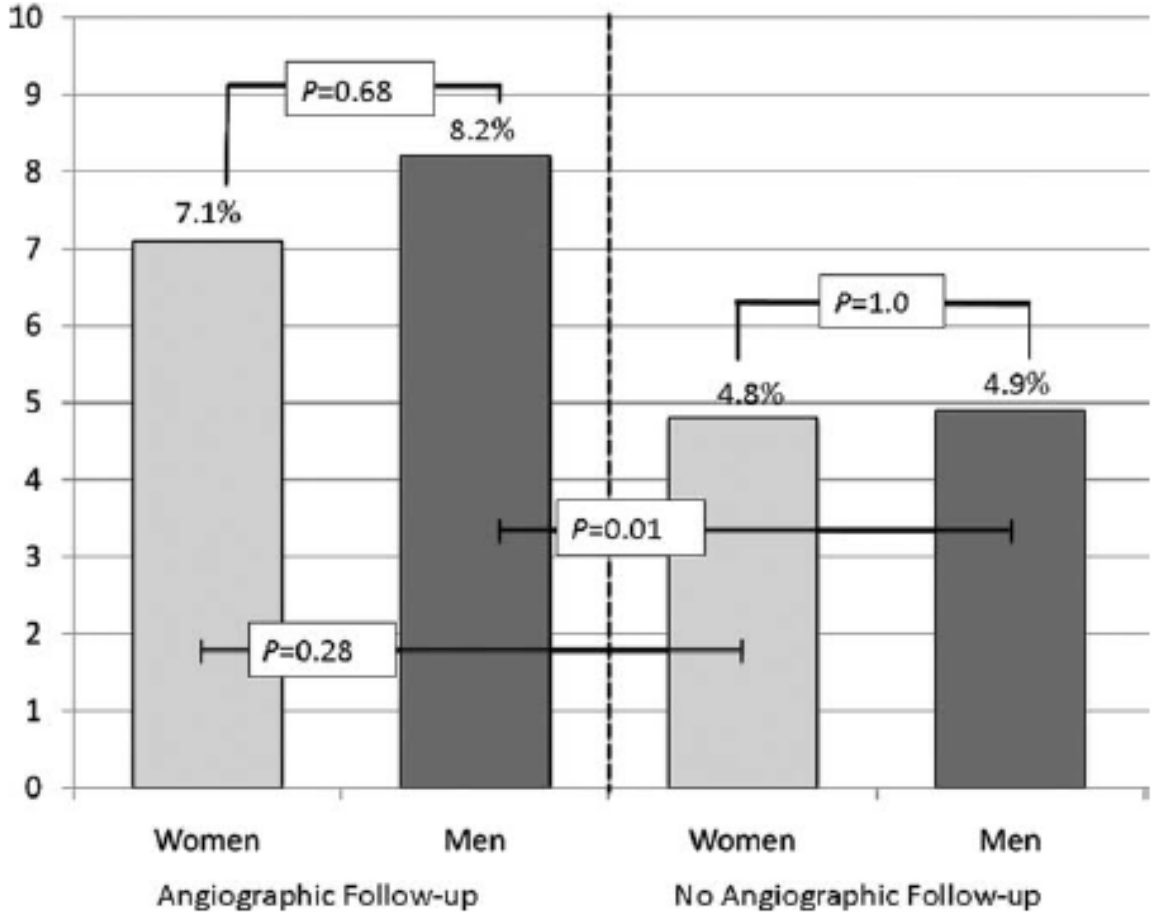
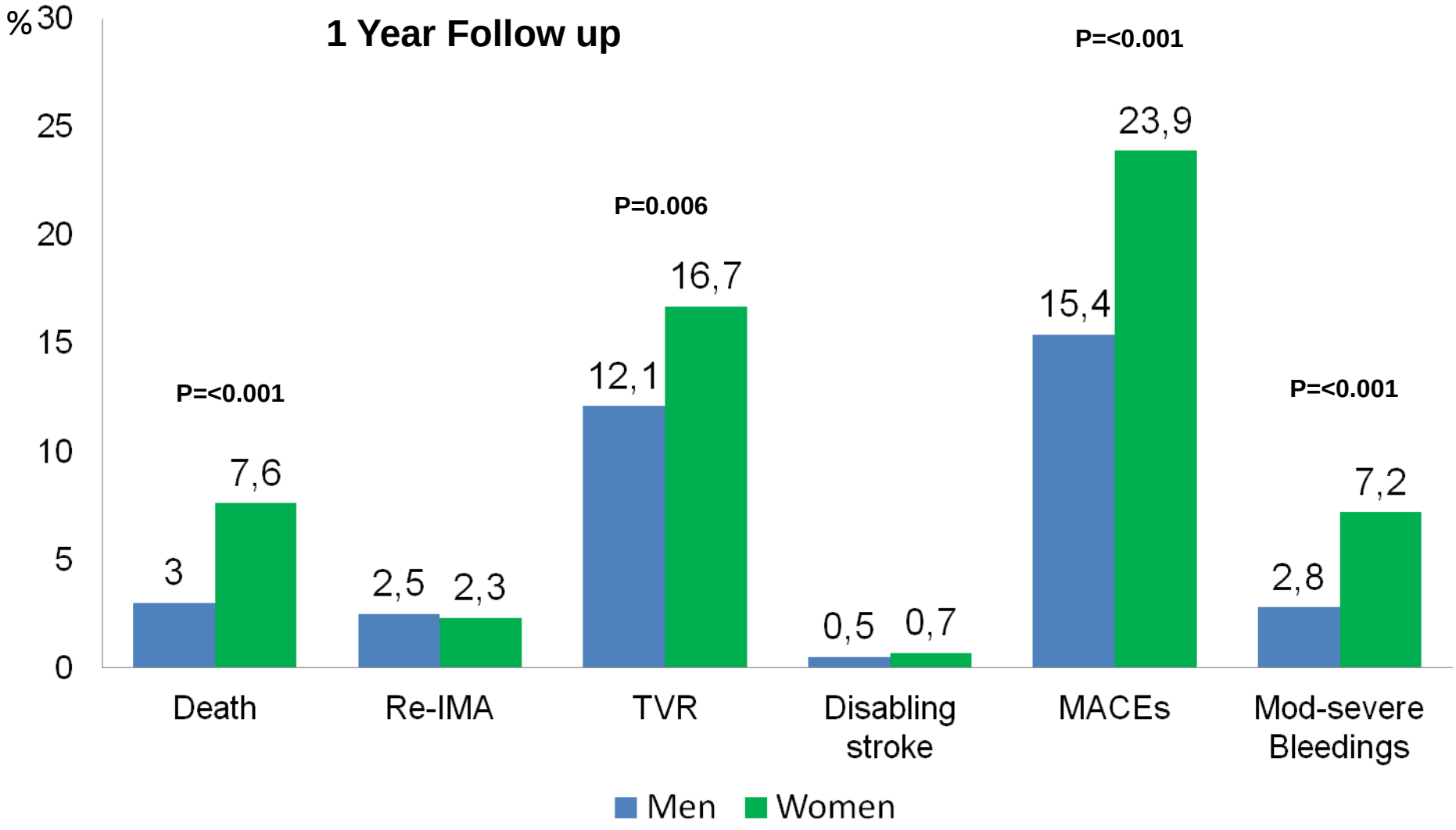


Fig. 1. Rates of clinically driven target lesion revascularization among men and women relative to angiographic follow-up assignment.

Brown et al, Cath Cardiovasc Interv 2010; 76: 804-813

CADILLAC STUDY

N women =562
N men =1520

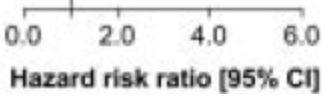


Lansky et al. Circulation. 2005;111:(1611-1618)

A

Predictors of 1-year Death

Variable	HR (95% CI)	P-value
Gender: Female	1.11 [0.53, 2.36]	0.78
Age	1.04 [1.02, 1.07]	0.002
Body surface area	0.13 [0.02, 0.77]	0.03
LAD	2.62 [1.31, 5.24]	0.006
Hypercholesterolemia	0.41 [0.19, 0.89]	0.03
Triple vessel disease	2.21 [1.16, 4.22]	0.02
LVEF	0.95 [0.92, 0.97]	<0.0001

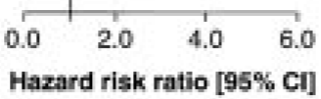


Hazard risk ratio [95% CI]

C

Predictors of 1-year MACE

Variable	HR (95% CI)	P-value
Gender: Female	1.64 [1.24, 2.17]	0.0006
LAD intervention	1.70 [1.28, 2.24]	0.0002
Randomized to stent	0.64 [0.49, 0.85]	0.002
Hypertension	1.33 [1.01, 1.74]	0.04
Triple vessel disease	1.48 [1.06, 2.05]	0.02
LVEF	0.99 [0.98, 1.00]	0.03

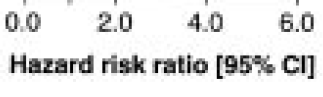


Hazard risk ratio [95% CI]

E

Predictors of 1-year Moderate/Severe Bleeding

Variable	HR (95% CI)	P-value
Gender: Female	2.09 [1.19, 3.68]	0.01
Age	1.04 [1.02, 1.07]	0.0008
LAD	1.77 [1.03, 3.05]	0.04
Randomized to stent	1.78 [1.01, 3.12]	0.046



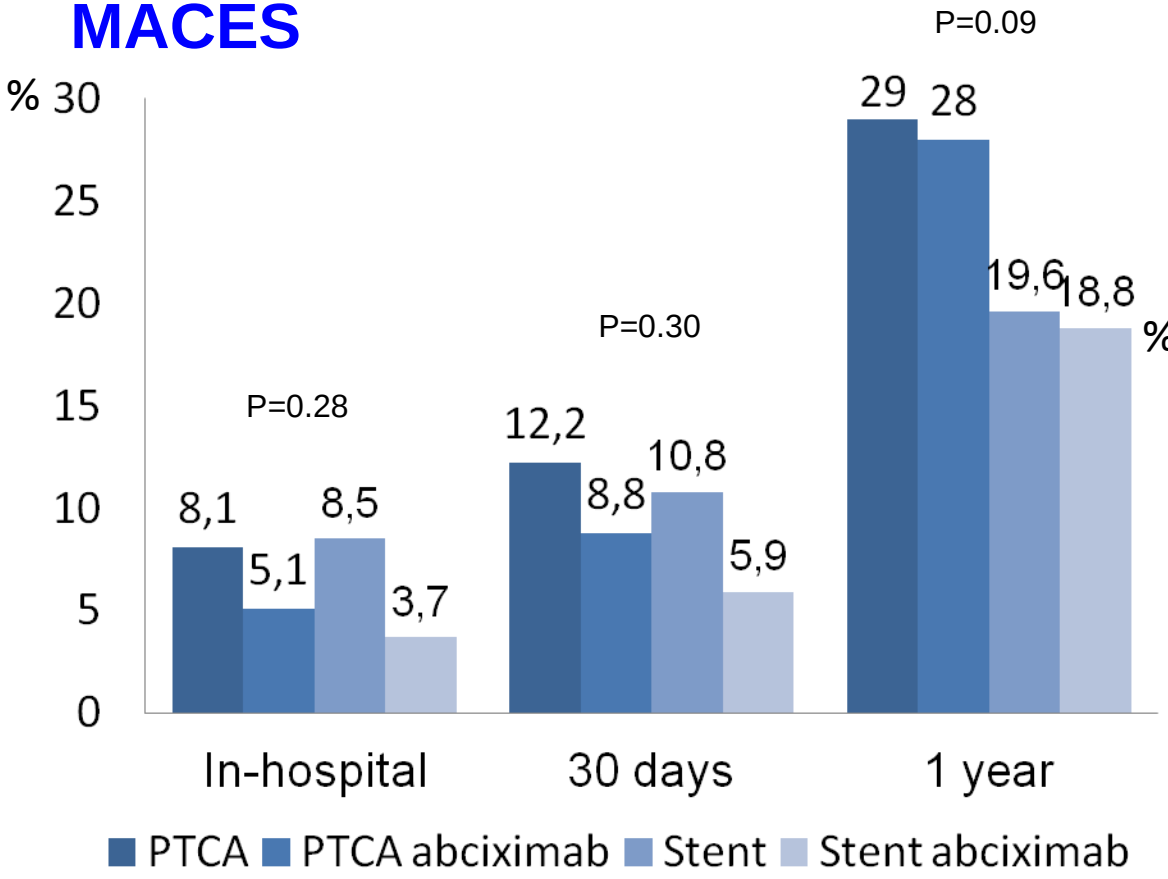
Hazard risk ratio [95% CI]

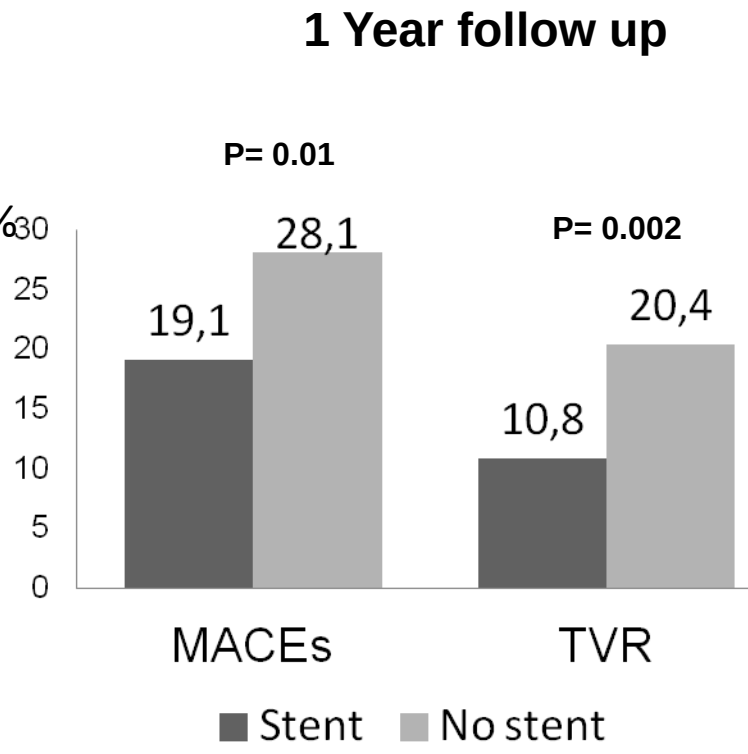
*Adjusted for BSA

CADILLAC STUDY

N women =562

MACES

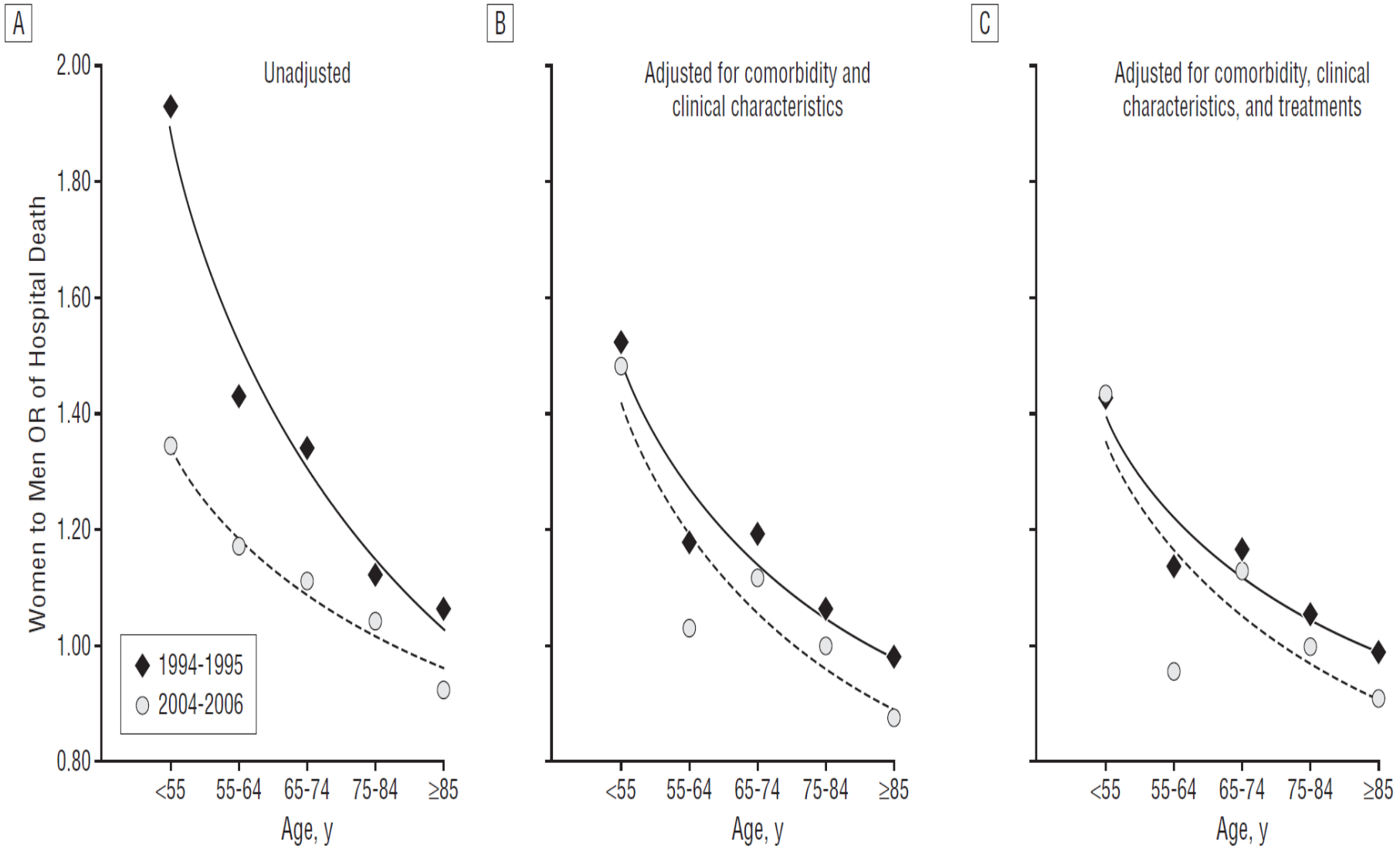




* Multilink BMS

Lansky et al. Circulation. 2005;111:(1611-1618)

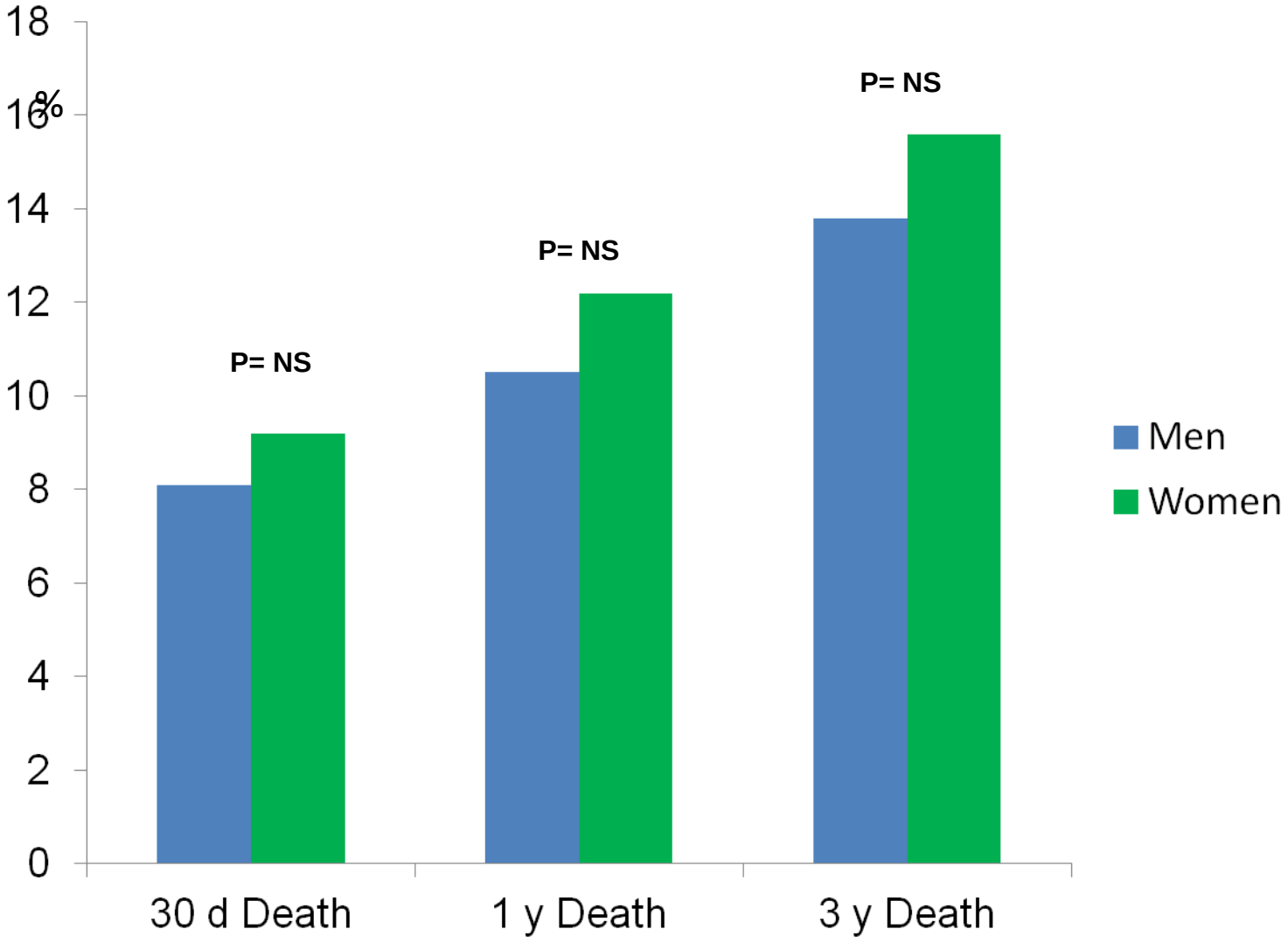
Sex age interaction



Vaccarino et al., Arch Intern Med. 2009;169(1767-1774)

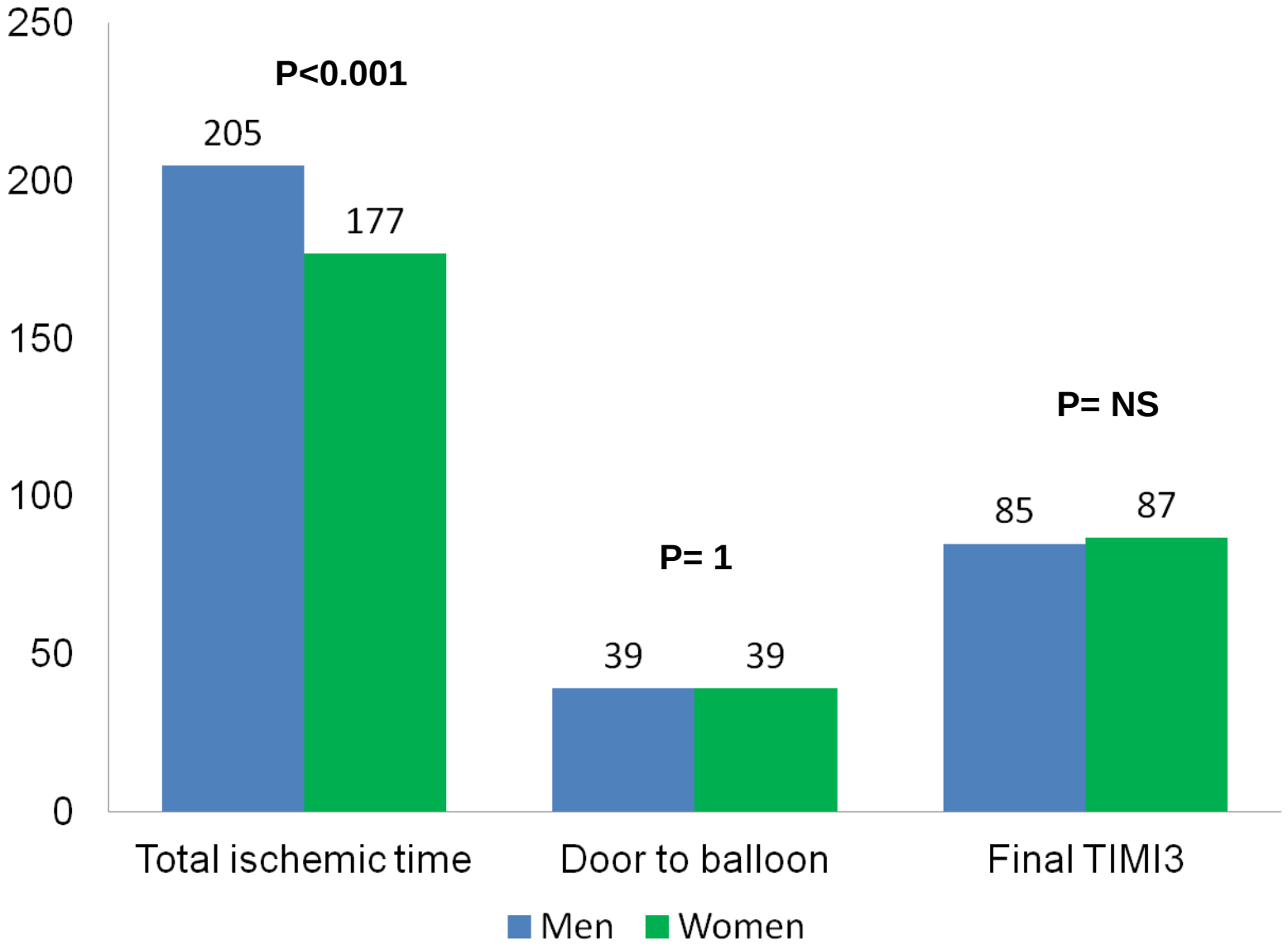
N women =910
N men = 2367

Multicentre registry (1996-2007)



Sjiauw t al. Eurointervention 2010:5:780-787

Multicentre registry (1996-2007)



Sjiauw t al. Eurointervention 2010:5:780-787