

# Género e infarto

**Dra Stella M Macin**  
**Jefe UCIC**

**Instituto de Cardiologia JF Cabral. Corrientes**

GENERO y SCA

80% de pacientes  
en ensayos clínicos  
son hombres

# Condiciones que explican las diferencias fisiopatológicas con los hombres

- Mayor prevalencia de anomalías como Raynaud's, migraña, desórdenes vasoespásticos y vasculitis,
- Hormonal: la mujer tiende a experimentar fluctuaciones significativas en lo hormonal, en la pre-menopausia reducciones en el tenor de estrógenos, con cambios en el balance entre estrógenos y andrógenos. Antes de la menopausia el estrógeno predominante es estradiol, después de la menopausia el nivel de estrógenos es producido primariamente por conversión de andrógenos a estrógenos en el tejido adiposo.



# Condiciones que explican las diferencias fisiopatológicas con los hombres

- Los estrógenos protectores podrían provocar que las placas vulnerables sean menos estenóticas.
- La rotura y trombosis oclusiva de esas placas menos severas puede impedir el desarrollo de pre condicionamiento miocárdico y circulación colateral, que empeoraría el pronóstico del infarto.
- Las diferencias pueden estar en relación con variaciones en actividad trombolítico y fibrinolítica.
- Mayor porcentaje de mujeres con fallo cardiaco puede reflejar la mayor disfunción diastólica



## Clinical Features and Outcomes of Women With Unstable Ischemic Heart Disease

### Observations From Metabolic Efficiency With Ranolazine for Less Ischemia in Non-ST-Elevation Acute Coronary Syndromes—Thrombolysis in Myocardial Infarction 36 (MERLIN-TIMI 36)

Jessica L. Mega, MD, MPH; Judith S. Hochman, MD;  
Benjamin M. Scirica, MD, MPH; Sabina A. Murphy, MPH; Sarah Sloan, MA, MS;  
Carolyn H. McCabe, BS; Piera Merlini, MD; David A. Morrow, MD, MPH

**Background**—The pathobiological basis of ischemic heart disease and thus the manifestations and response to therapy can differ between women and men. In prior studies, sex-based treatment differences have been observed with the antiischemic ranolazine, with a possibly diminished effect in women.

**Methods and Results**—We conducted a prospectively planned analysis of the clinical, biomarker, angiographic, and continuous ECG features and 1-year outcomes of women with unstable ischemic heart disease randomized to ranolazine or placebo in Metabolic Efficiency With Ranolazine for Less Ischemia in Non-ST-Elevation Acute Coronary Syndromes—Thrombolysis in Myocardial Infarction 36 (MERLIN-TIMI 36). Compared with men ( $n=4269$ ), women ( $n=2291$ ) were older with more risk factors ( $P<0.001$ ). On presentation, women were less likely than men to have significant epicardial coronary artery disease (no stenosis  $\geq 50\%$  on angiography, 19.4% versus 8.6%;  $P<0.001$ ) or elevated troponin (57.1% versus 68.9%;  $P<0.001$ ). Yet, women were more likely to have an elevated B-type natriuretic peptide (47.0% versus 40.2%;  $P<0.001$ ), worse median angina frequency scores (80 versus 100;  $P<0.001$ ), and an ischemic episode on continuous ECG administered during the first 7 days (22.5% versus 19.3%;  $P=0.0025$ ). Women and men were at similar adjusted risk for the primary end point of cardiovascular death, myocardial infarction, or recurrent ischemia (adjusted hazard ratio, 1.11; 95% confidence interval, 0.96 to 1.29;  $P=0.15$ ). Ranolazine was associated with a significant reduction in recurrent ischemia in women (13.0% versus 18.2%; hazard ratio, 0.71; 95% confidence interval, 0.57 to 0.88;  $P=0.002$ ).

**Conclusions**—Women with a clinical syndrome consistent with unstable ischemic heart disease, despite having less obstructive coronary artery disease, were more likely than men to report anginal episodes and had more recorded ischemic periods on continuous ECG. In this setting, ranolazine may be a particularly useful antiischemic agent in women.

**Clinical Trial Registration**—URL: <http://www.clinicaltrials.gov>. Unique identifier: NCT00099788.  
(*Circulation*. 2010;121:1809-1817.)

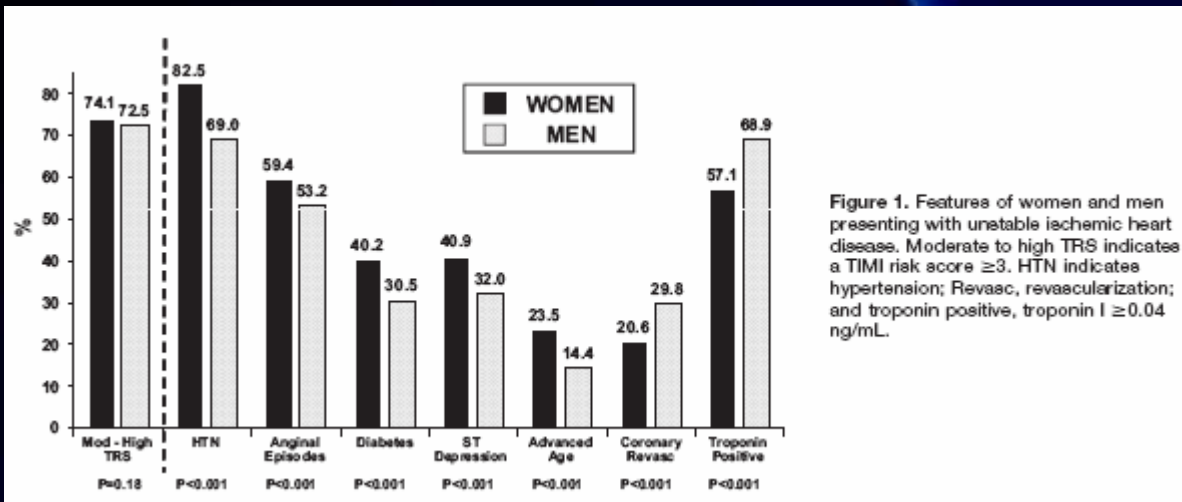


Figure 1. Features of women and men presenting with unstable ischemic heart disease. Moderate to high TRS indicates a TIMI risk score  $\geq 3$ . HTN indicates hypertension; Revasc, revascularization; and troponin positive, troponin I  $\geq 0.04$  ng/mL.

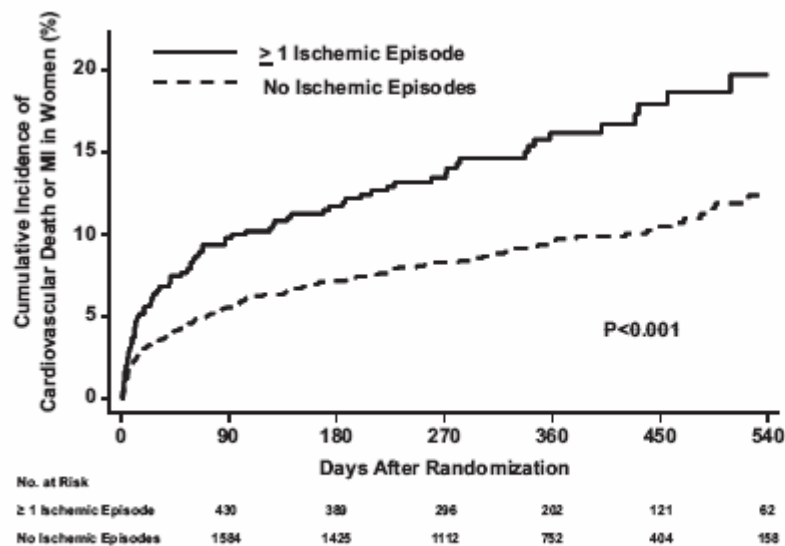


Figure 2. Cumulative incidence of cardiovascular death or myocardial infarction among women by ischemia detected on cECG monitoring.

Downloaded from [circ.ahajournals.org](http://circ.ahajournals.org) at McMaster University Library on September 7, 2010

**Table 2. Interventional and Medical Treatments**

	Women (n=2291), n/N (%)	Men (n=4269), n/N (%)	<i>P</i>
<b>Angiography and revascularization</b>			
Angiography during Index hospitalization	1162/2291 (50.7)	2758/4269 (64.6)	<0.001
<b>Angiographic extent of disease</b>			
0 vessel	225/1162 (19.4)	236/2758 (8.6)	<0.001
1 vessel	335/1162 (28.8)	761/2758 (27.6)	
2 vessels	254/1162 (21.9)	735/2758 (26.6)	
3 vessels or left main	348/1162 (29.9)	1026/2758 (37.2)	
PCI during Index hospitalization	567/2291 (24.7)	1515/4269 (35.5)	<0.001
CABG during Index hospitalization	119/2291 (5.2)	413/4269 (9.7)	<0.001
<b>Medications*</b>			
Aspirin	2195/2291 (95.8)	4108/4269 (96.2)	0.40
Heparin	2060/2291 (89.9)	3866/4269 (90.6)	0.40
GPIIb/IIIa receptor Inhibitor	255/2291 (11.1)	700/4269 (16.4)	<0.001
Thienopyridine	1298/2291 (56.7)	2917/4269 (68.3)	<0.001
$\beta$ -blocker	2041/2291 (89.1)	3811/4269 (89.3)	0.82
ACE Inhibitor or ARB	1843/2291 (80.4)	3287/4269 (77.0)	0.001
Statin	1786/2291 (78.0)	3618/4269 (84.8)	<0.001
<b>Diabetic treatments†</b>			
Insulin	276/846 (32.6)	302/1182 (25.6)	<0.001
Oral agents	451/846 (53.3)	676/1182 (57.2)	
Diet alone	104/846 (12.3)	149/1182 (12.6)	
None	15/846 (1.8)	55/1182 (4.7)	

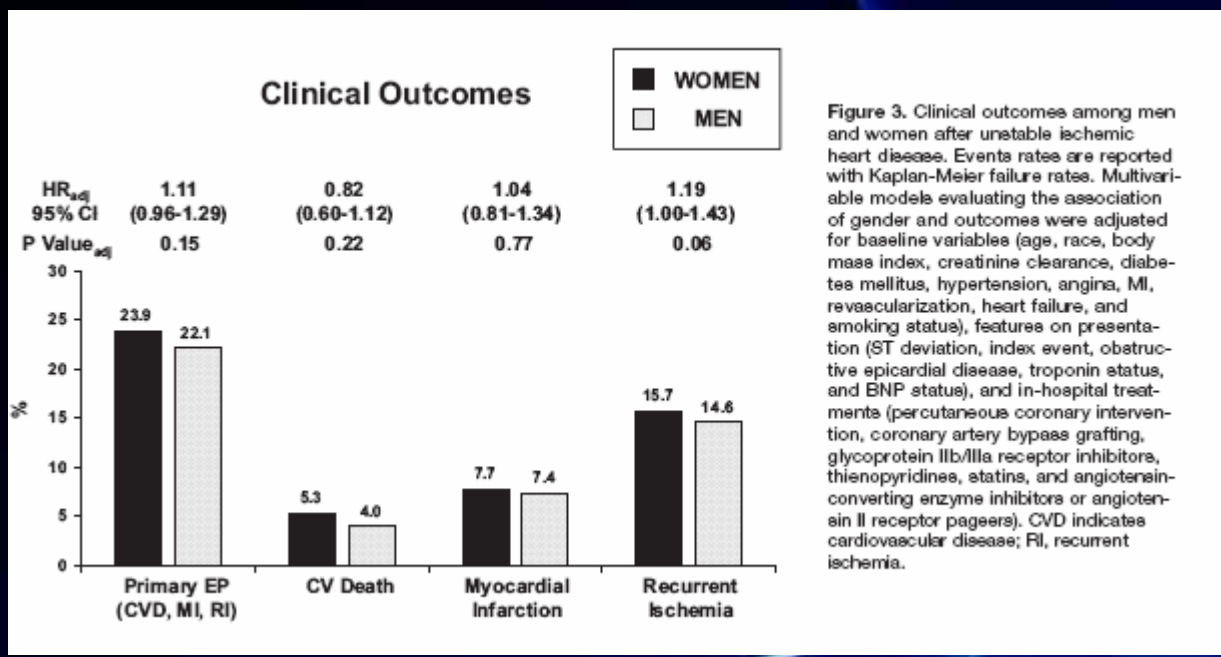


Figure 3. Clinical outcomes among men and women after unstable ischemic heart disease. Events rates are reported with Kaplan-Meier failure rates. Multivariable models evaluating the association of gender and outcomes were adjusted for baseline variables (age, race, body mass index, creatinine clearance, diabetes mellitus, hypertension, angina, MI, revascularization, heart failure, and smoking status), features on presentation (ST deviation, index event, obstructive epicardial disease, troponin status, and BNP status), and in-hospital treatments (percutaneous coronary intervention, coronary artery bypass grafting, glycoprotein IIb/IIIa receptor inhibitors, thienopyridines, statins, and angiotensin-converting enzyme inhibitors or angiotensin II receptor blockers). CVD indicates cardiovascular disease; RI, recurrent ischemia.

### Treatment Specific Outcomes

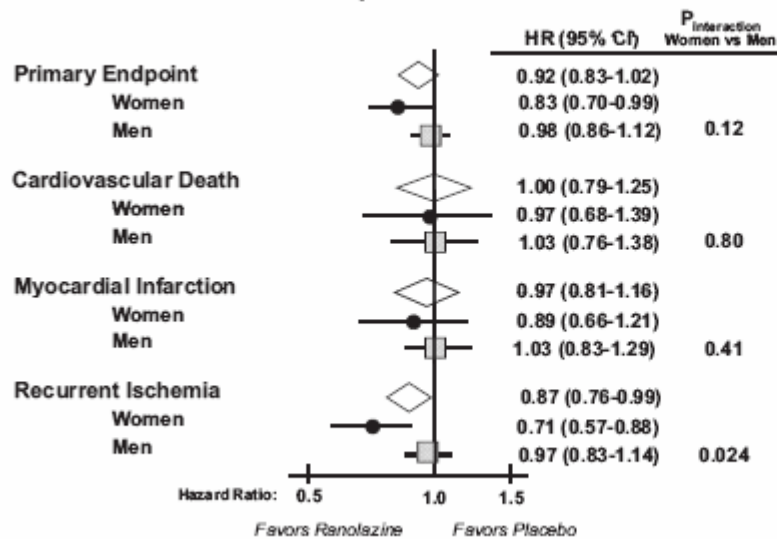
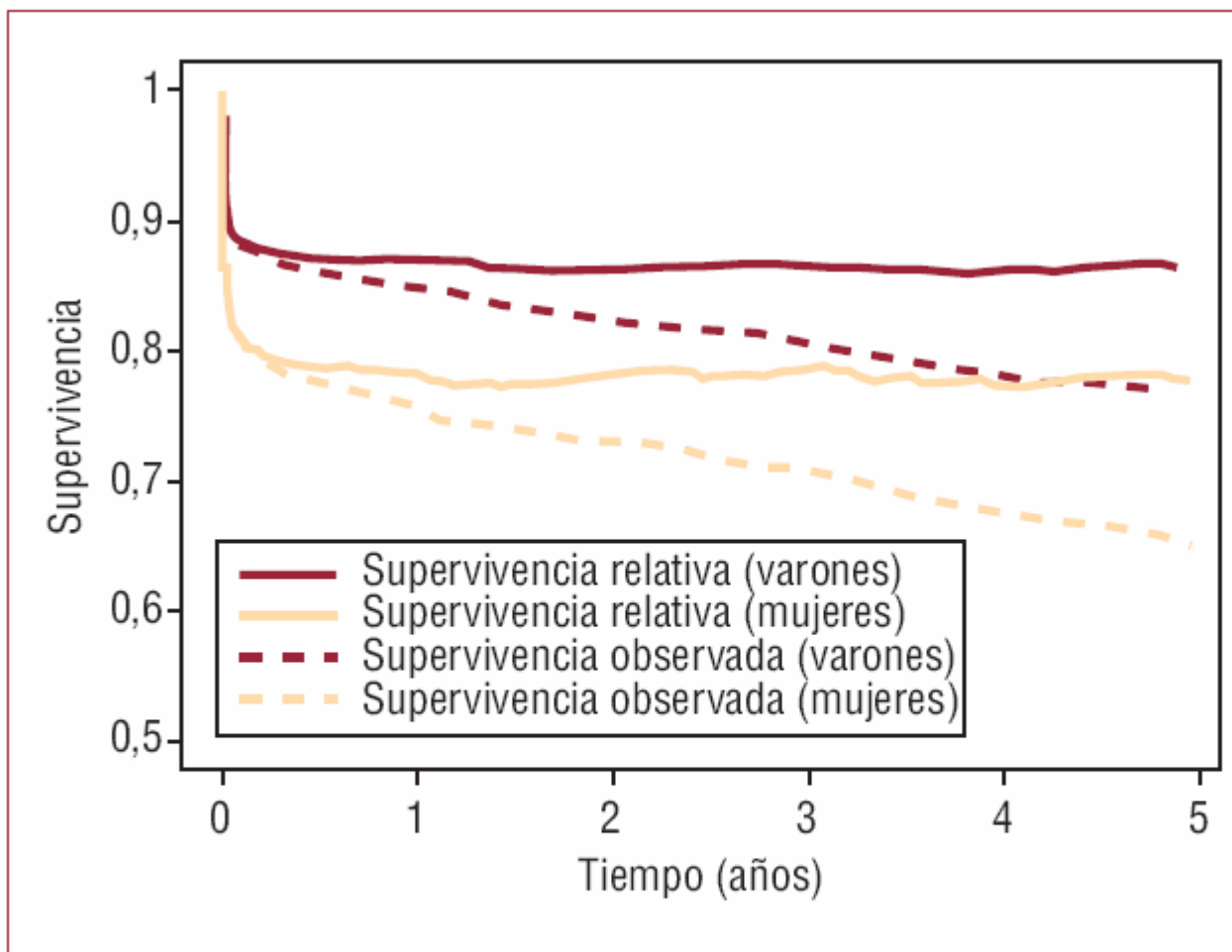


Figure 4. Treatment specific outcomes associated with ranolazine vs placebo in women and men. Outcomes are reported for the overall population (diamonds), women (circles), and men (squares).

Downloaded from [circ.ahajournals.org](http://circ.ahajournals.org) at McMaster University Library on September 7, 2010



**Fig. 2.** Curvas de supervivencia observada y relativa tras un primer IAM, por sexo; registro IBERICA-Guipúzcoa 1997-2000.

# Género e infarto

## ISSUES IN CARDIOVASCULAR NURSING

### Symptoms of acute coronary syndromes: Are there gender differences? A review of the literature

Holli A. DeVon, RN, PhD, and Julie Johnson Zerwic, RN, PhD, Chicago, Illinois

Evidence has begun to accumulate that suggests there may be gender differences in the presenting symptoms of acute coronary syndromes (ACS). Identification of gender differences has implications for both health care providers and the general public. Women should be instructed as to the symptoms expected with ACS on the basis of evidence obtained from studies that include both sexes.

Twelve studies that identified symptoms of ACS for both women and men were identified through a review of the literature. In several of the studies, which included all types of ACS, women had significantly more back and jaw pain, nausea and/or vomiting, dyspnea, indigestion, and palpitations. In a number of the studies, which solely sampled patients with acute myocardial infarction, women demonstrated more back, jaw, and neck pain; nausea and/or vomiting; dyspnea; palpitations; indigestion; dizziness; fatigue; loss of appetite; and syncope. Men reported more chest pain and diaphoresis in the myocardial infarction sample.

Results of these studies showed that women and men experienced the same symptoms with ACS. However, in some studies there were gender differences in the proportion of symptoms. Given the current state of the science, definitive conclusions regarding gender differences in the symptoms of ACS cannot be drawn. Further study is urgently needed to clarify and expand on these findings. (Heart Lung® 2002;31:235-45.)

# Género e infarto

DeVon and Zerwic

Symptoms of acute coronary syndromes: Are there gender differences?

**Table III**

Summary of gender differences and similarities in symptoms by diagnosis

Sex	Symptom differences Acute coronary syndromes	Symptom differences Myocardial infarction
Women	<ul style="list-style-type: none"><li>&gt; Back pain (2/2)</li><li>&gt; Dyspnea (2/5)</li><li>&gt; Indigestion (1/2)</li><li>&gt; Jaw pain (1/1)</li><li>&gt; Nausea/vomiting (2/4)</li><li>&gt; Palpitations (1/1)</li></ul>	<ul style="list-style-type: none"><li>&gt; Abdominal pain (1/7)</li><li>&gt; Back pain (3/4)</li><li>&gt; Dizziness (1/4)</li><li>&gt; Dyspnea (5/8)</li><li>&gt; Fatigue (1/2)</li><li>&gt; Jaw pain (1/3)</li><li>&gt; Loss of appetite (1/1)</li><li>&gt; Nausea/vomiting (4/7)</li><li>&gt; Palpitations (1/2)</li><li>&gt; Shoulder pain (1/2)</li><li>&gt; Syncope (1/3)</li></ul>
Men		<ul style="list-style-type: none"><li>&gt; Chest pain (2/8)</li><li>&gt; Diaphoresis (3/8)</li></ul>

# Characterization and outcomes of women and men with non-ST-segment elevation myocardial infarction and nonobstructive coronary artery disease: Results from the Can Rapid Risk Stratification of Unstable Angina Patients Suppress Adverse Outcomes with Early Implementation of the ACC/AHA Guidelines (CRUSADE) Quality Improvement Initiative

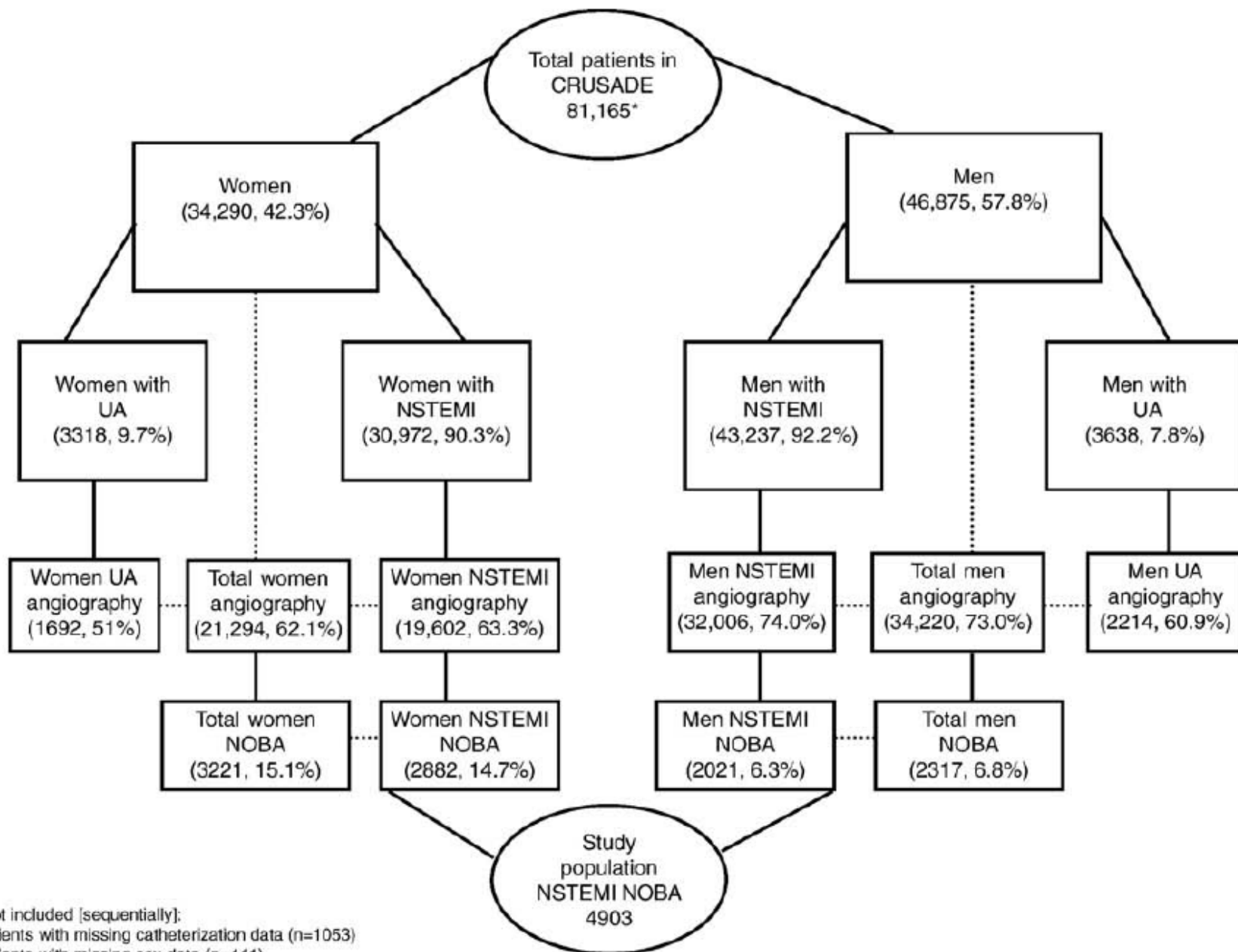
Erika R. Gehrie, MD,<sup>a</sup> Harmony R. Reynolds, MD,<sup>a</sup> Anita Y. Chen, MS,<sup>b</sup> Brian H. Neelon, PhD,<sup>b</sup> Matthew T. Roe, MD, MHS,<sup>b</sup> W. Brian Gibler, MD,<sup>c</sup> E. Magnus Ohman, MD,<sup>b</sup> L. Kristin Newby, MD, MHS,<sup>b</sup> Eric D. Peterson, MD, MPH,<sup>b</sup> and Judith S. Hochman, MD<sup>a</sup> *New York, NY; Durham, NC; and Cincinnati, OH*

**Background** Women with non-ST-segment elevation myocardial infarction (NSTEMI) who undergo coronary angiography have no obstructive coronary lesions more often than men. Sex-specific characteristics and outcomes of patients without obstructive coronary artery disease (CAD) have not been described previously.

**Methods** Using data from NSTEMI patients enrolled in CRUSADE from 2001 to 2005, we evaluated differences in clinical features and in-hospital outcomes between men and women with no obstructive CAD.

**Results** After excluding patients with missing catheterization and sex data ( $n = 1,494$ ), previous coronary artery bypass grafting or percutaneous coronary intervention ( $47,907$ ), catheterization contraindications ( $n = 6,588$ ), and missing obstructive CAD status ( $n = 1,565$ ), there were 55,514 patients (68.4%) with NSTEMI acute coronary syndromes (ACS) who underwent angiography (among women, 62.1% [ $21,294/34,290$ ], and among men, 73% [ $34,220/46,875$ ];  $P < .001$ ). Among these, a total of 5,538 patients (10.0%) had nonobstructive CAD—15.1% ( $3,221/21,294$ ) of women and 6.8% ( $2,317/34,220$ ) of men ( $P < .0001$ ). In patients without obstructive CAD, women were as likely as men to have MI (troponin elevation in 89% vs 87%,  $P = .37$ ). Women and men were equally likely to have larger troponin elevations (58.9% vs 58.6% with troponin  $>5\times$  upper limit of normal,  $P = .69$ , respectively). In NSTEMI patients without obstructive CAD, in-hospital death (0.6% women vs 0.7% men) and cardiogenic shock (1.0% women vs 0.7% men) were infrequent.

**Conclusions** Among NSTEMI ACS patients undergoing coronary angiography, absence of obstructive CAD is more common in women than men. Although nonobstructive CAD was twice as common among women with NSTEMI, sex differences in characteristics and outcomes were similar to those found with obstructive CAD. Unadjusted in-hospital outcomes of NSTEMI patients with nonobstructive CAD are favorable in both sexes. Whether the underlying pathophysiology of NSTEMI ACS without documentation of obstructive CAD is different between women and men requires further study. (*Am Heart J* 2009;158:688-94.)



\*Not included [sequentially]:

Patients with missing catheterization data (n=1053)

Patients with missing sex data (n=441)

Patients with history of previous CABG or PCI (n=47,907)

Patients with cath contraindications (n=6588)

Patients with missing obstructive CAD status (n=1565)

# Género e infarto

**Table II.** Acute ( $\leq 24$  hours from time of presentation) and discharge medications and in-hospital procedures of men and women with no obstruction at angiography

	Overall (n = 4903)	Women (n = 2882)	Men (n = 2021)	P
<b>Acute medications*</b>				
Aspirin	4396/4633 (95%)	2549/2695 (95%)	1847/1938 (95%)	.36
$\beta$ -Blocker	3555/4356 (82%)	2093/2541 (82%)	1462/1815 (81%)	.10
Heparin—all	4048/4897 (86%)	2389/2751 (87%)	1659/1750 (85%)	.21
Unfractionated	2233/4690 (48%)	1295/2751 (47%)	938/1939 (48%)	.42
Low molecular weight	2069/4688 (44%)	1242/2751 (45%)	827/1937 (43%)	.11
GP IIb/IIIa inhibitor	1287/4265 (30%)	731/2486 (29%)	556/1779 (31%)	.14
Clopidogrel	1407/4640 (30%)	842/2722 (31%)	565/1918 (29%)	.70
<b>Discharge medications*†</b>				
Aspirin	3689/4258 (86.5%)	350/2510 (85.9%)	1529/1748 (87.3%)	.13
$\beta$ -Blocker	3034/4034 (75.0%)	1812/2375 (75.9%)	1222/1659 (73.6%)	.31
Nitroglycerin, any	1620/4235 (38.3%)	978/2503 (39.1%)	642/1732 (37.1%)	.40
Calcium-channel blocker	1107/4469 (24.5%)	712/2659 (26.5%)	395/1810 (21.5%)	<.0001
Statin	2383/4312 (55.0%)	1422/2563 (55.2%)	961/1749 (54.7%)	.54
ACE inhibitor or ARB	2342/4472 (52.4%)	1433/2655 (54.0%)	909/1817 (50.0%)	.0006
Clopidogrel	1256/4271 (29.3%)	752/2532 (29.6%)	504/1739 (28.8%)	.41
Coumadin	259/2029 (12.8%)	168/1232 (13.6%)	91/797 (11.4%)	.50
<b>In-hospital procedures*</b>				
Catheterization within 24 h of arrival	1922/4581 (40.0%)	1085/2696 (40.2%)	837/1885 (44.4%)	.0007
Catheterization within 48 h of arrival	3176/4581 (69.3%)	1831/2696 (67.9%)	1345/1885 (71.4%)	.003

# Género e infarto

**Table III.** In-hospital clinical outcomes\* of men and women with no obstructive CAD at angiography

Variable	Overall (n = 4903)	Women (n = 2882)	Men (n = 2021)	P
Reinfarction	53/4793 (1.1%)	36/2824 (1.3%)	17/1969 (0.9%)	.16
Cardiogenic shock	40/4794 (0.8%)	27/2824 (1.0%)	13/1970 (0.7%)	.29
HF	210/4794 (4.4%)	138/2828 (4.9%)	72/1966 (3.6%)	.20
Stroke	18/4782 (0.4%)	12/2821 (0.4%)	6/1961 (0.3%)	.41
Non-CABG RBC transfusion	177/4747 (3.7%)	117/2799 (4.2%)	60/1948 (3.1%)	.18
Death	31/4816 (0.6%)	18/2841 (0.6%)	13/1975 (0.7%)	.92
Death or reinfarction	82/4795 (1.7%)	54/2825 (1.9%)	28/1970 (1.4%)	.16

# Género e infarto

## Gender differences in time to presentation for myocardial infarction before and after a national women's cardiovascular awareness campaign: A temporal analysis from the Can Rapid Risk Stratification of Unstable Angina Patients Suppress ADverse Outcomes with Early Implementation (CRUSADE) and the National Cardiovascular Data Registry Acute Coronary Treatment and Intervention Outcomes Network–Get with the Guidelines (NCDR ACTION Registry–GWTG)

Deborah B. Diercks, MD, MSc,<sup>a</sup> Kelly P. Owen, MD,<sup>a</sup> Michael C. Kontos, MD,<sup>b</sup> Andra Blomkalns, MD,<sup>c</sup> Anita Y. Chen, MS,<sup>d</sup> Chadwick Miller, MD,<sup>e</sup> Stephen Wylie, MD,<sup>f</sup> and Eric D. Peterson, MD, MPH<sup>g</sup>  
Sacramento, CA; Richmond, VA; Cincinnati, OH; Durham and Winston-Salem, NC and Boston, MA

**Background** In 2001/2002, the American Heart Association and National Heart, Lung, and Blood Institute initiated national campaigns with the aim of increasing women's awareness of their risk of heart disease, with particular focus on women aged 40 to 60 years. Our aim is to determine if these women's awareness campaigns were associated with a reduction in the time to hospital presentation for myocardial infarction in women.

**Methods** The study population comprised patients who presented with a non-ST-segment elevation myocardial infarction in the Can Rapid Risk Stratification of Unstable Angina Patients Suppress ADverse Outcomes with Early Implementation of the American College of Cardiology/American Heart Association Guidelines Registry and the National Cardiovascular Data Registry Acute Coronary Treatment and Intervention Outcomes Network–Get with the Guidelines registry. Analysis was done based on the introduction of the educational intervention: preintervention 2002-2003, intermediate 2004/2005, and post 2006-2007.

**Results** Of 125,161 patients, 50,162 (40.1%) are women. The median time from symptom onset to presentation was significantly longer in women than men: 3 hours (interquartile range 1.4-7.6) versus 2.8 hours (interquartile range 1.3-7.2;  $P < .0001$ ), a difference that remained significant after adjusting for clinical characteristics. There was no measurable reduction in the time from symptom onset to presentation over the period of the awareness campaigns: post- versus preintervention period (-0.18%, 95% CI -3.02% to 2.74%). After adjustment for covariates, women aged 40 to 60 years had a 3.46% longer time to presentation than men (95% CI 1.06-5.92,  $P = .005$ ).

**Conclusions** There was no reduction in time from symptom onset to hospital presentation for myocardial infarction patients since national awareness campaigns in women were initiated, and a significant gender gap remains. [Am Heart J. 2010;160:8087-#3.]

# Género e infarto

## Women with acute coronary syndrome are less invasively examined and subsequently less treated than men

Anders Hvelplund<sup>1,2,3\*</sup>, Søren Galatius<sup>2</sup>, Mette Madsen<sup>4</sup>, Jeppe N. Rasmussen<sup>1</sup>, Søren Rasmussen<sup>1</sup>, Jan Kyst Madsen<sup>2,3</sup>, Niels P.R. Sand<sup>5</sup>, Hans-Henrik Tilsted<sup>6</sup>, Per Thayssen<sup>7</sup>, Eske Sindby<sup>8</sup>, Søren Højbjerg<sup>9</sup>, and Steen Z. Abildstrøm<sup>1,3,10</sup>

<sup>1</sup>National Institute of Public Health, University of Southern Denmark, Øster Farimagsgade 54, DK 1199 Copenhagen, Denmark; <sup>2</sup>Department of Cardiology, Gentofte University Hospital, Hellerup, Denmark; <sup>3</sup>Danish Heart Registry, Denmark; <sup>4</sup>Institute of Public Health, University of Copenhagen, Copenhagen, Denmark; <sup>5</sup>Department of Cardiology, SVS Ebeltoft, Ebeltoft, Denmark; <sup>6</sup>Department of Cardiology, Aalborg Hospital, Aarhus University Hospital, Aarhus, Denmark; <sup>7</sup>Department of Cardiology, Odense University Hospital, Odense, Denmark; <sup>8</sup>Department of Thoracic Surgery, Aalborg Hospital, Aarhus University Hospital, Aarhus, Denmark; <sup>9</sup>Department of Cardiology, Bispebjerg University Hospital, Copenhagen, Denmark; and <sup>10</sup>Cardiovascular Research Unit, Department of Internal Medicine, Glostrup University Hospital, Glostrup, Denmark

Received 23 October 2008; revised 28 April 2009; accepted 8 October 2009; online publication of this issue 20 November 2009

### Aims

To investigate if gender bias is present in today's setting of an early invasive strategy for patients with acute coronary syndrome in Denmark (population 5 million).

### Methods and results

We identified all patients admitted to Danish hospitals with acute coronary syndrome in 2005–07 (9561 women and 16 406 men). Cox proportional hazard models were used to estimate the gender differences in coronary angiography (CAG) rate and subsequent revascularization rate within 60 days of admission. Significantly less women received CAG (cumulative incidence 64% for women vs. 78% for men,  $P < 0.05$ ), with a hazard ratio (HR) of 0.68 (95% CI 0.65–0.70,  $P < 0.0001$ ) compared with men. The difference was narrowed after adjustment for age and comorbidity, but still highly significant (HR 0.82, 95% CI 0.80–0.85,  $P < 0.0001$ ). Revascularization after CAG was less likely in women with an HR of 0.68 (95% CI 0.66–0.71,  $P < 0.0001$ ) compared with men. More women (22%) than men (10%) ( $P < 0.0001$ ) had no significant stenoses on their coronary angiogram. However, after adjustment for the number of significant stenoses, age, and comorbidity women were still less likely to be revascularized (HR 0.91, 95% CI 0.87–0.95,  $P < 0.0001$ ).

### Conclusion

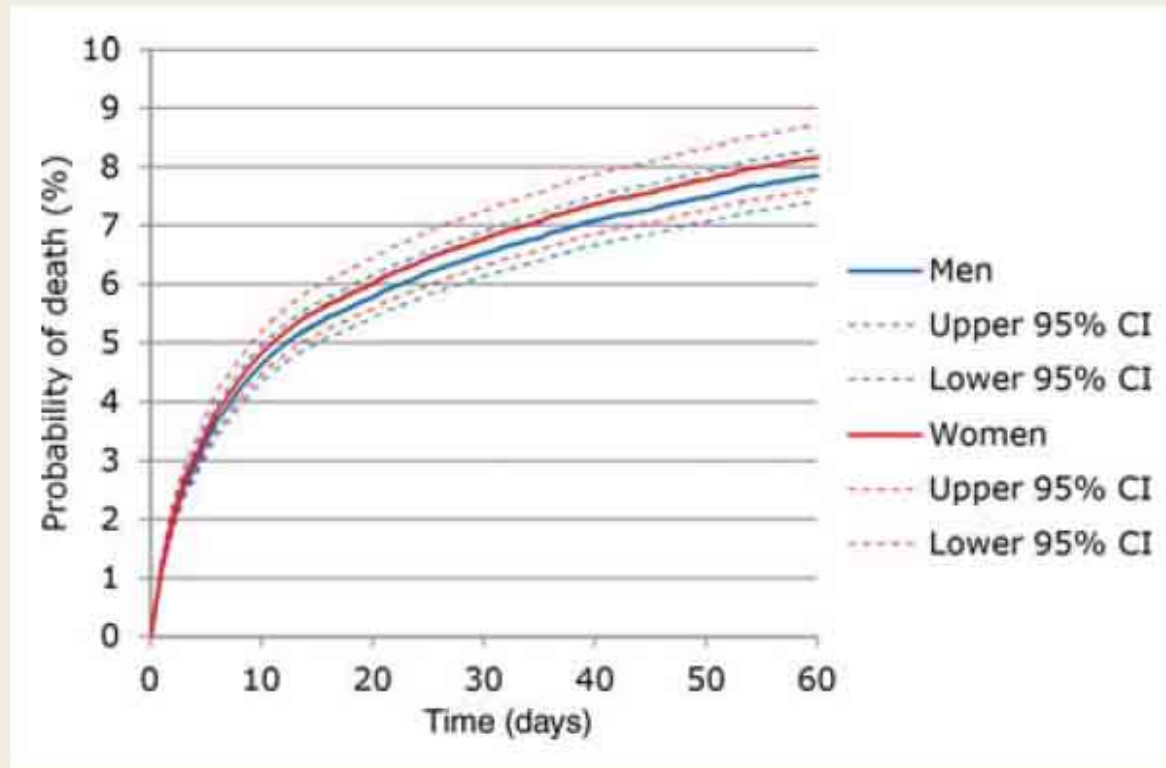
Women with ACS are approached in a much less aggressively invasive way and receive less interventional treatment than men even after adjusting for differences in comorbidity and number of significant stenoses.

# Género e infarto

**Table 2** Result of coronary angiography and subsequent invasive treatment

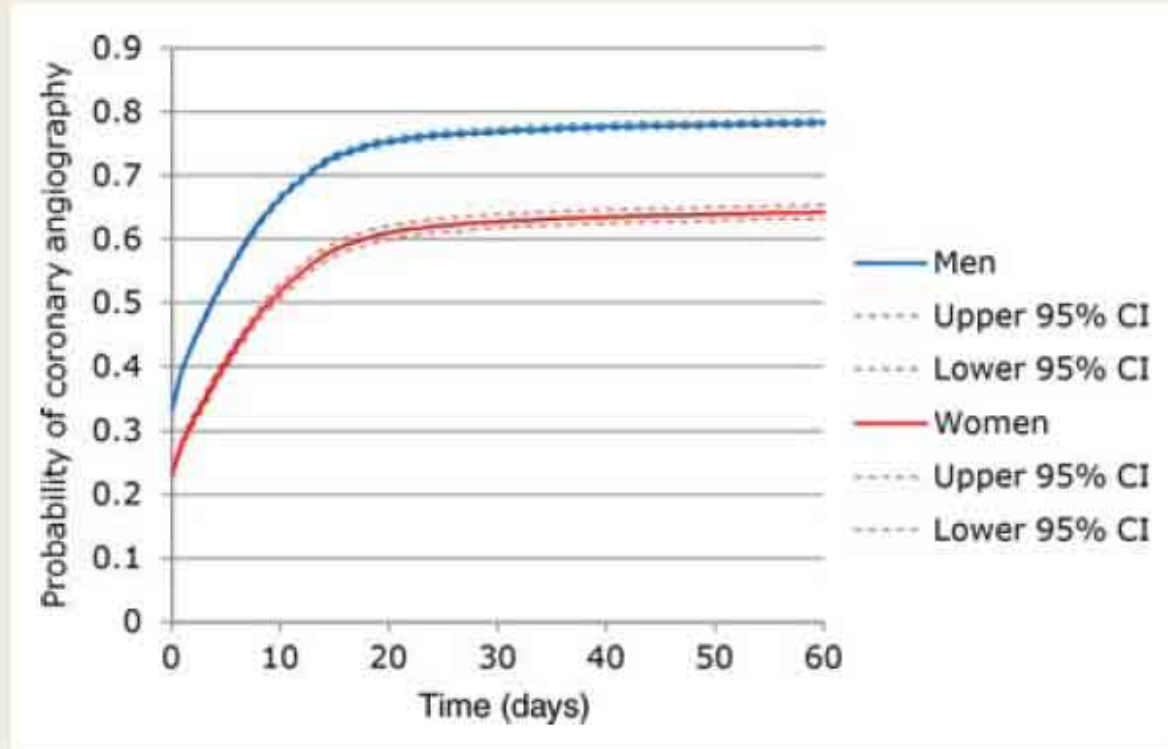
	Women	Men
Number of patients having CAG performed (%)	5845 (32)	12 417 (68)
Extent of disease at angiography, <i>n</i> (%) <sup>a</sup> (*)		
No significant stenosis	1298 (22)	1181 (10)
1 vessel disease	2281 (39)	5187 (42)
2 vessel disease	1032 (18)	2890 (23)
3 vessel disease	926 (16)	2487 (20)
Missing result	308 (5)	672 (5)
Revascularization, <i>n</i> (%)		
Revascularization within 60 days	3861 (66)	10 104 (81*)
PCI within 60 days	3496 (60)	8846 (71*)
CABG within 60 days	434 (7)	1538 (12*)

# Género e infarto



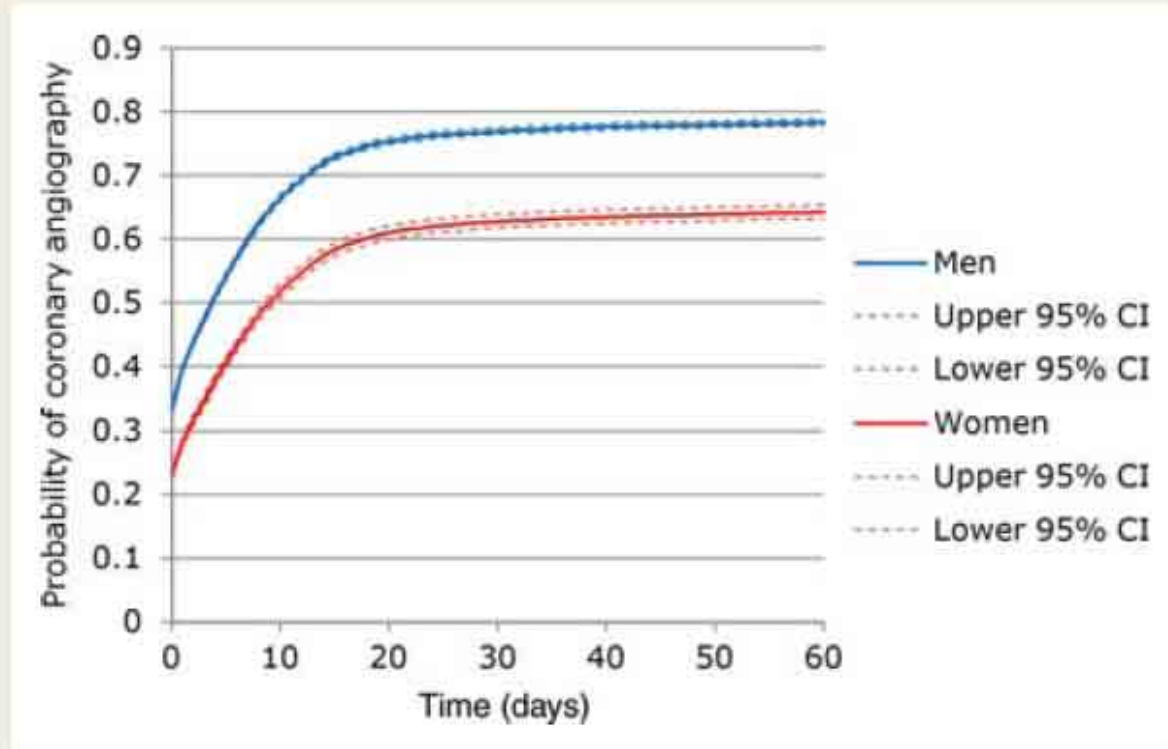
**Figure 1** Estimated mortality curves for a 70-year-old woman/man in the first 60 days among patients admitted with acute coronary syndrome.

# Género e infarto



**Figure 2** Cumulative incidence curves showing gender differences in invasive examination rate in the first 60 days among patients admitted with acute coronary syndrome.

# Género e infarto



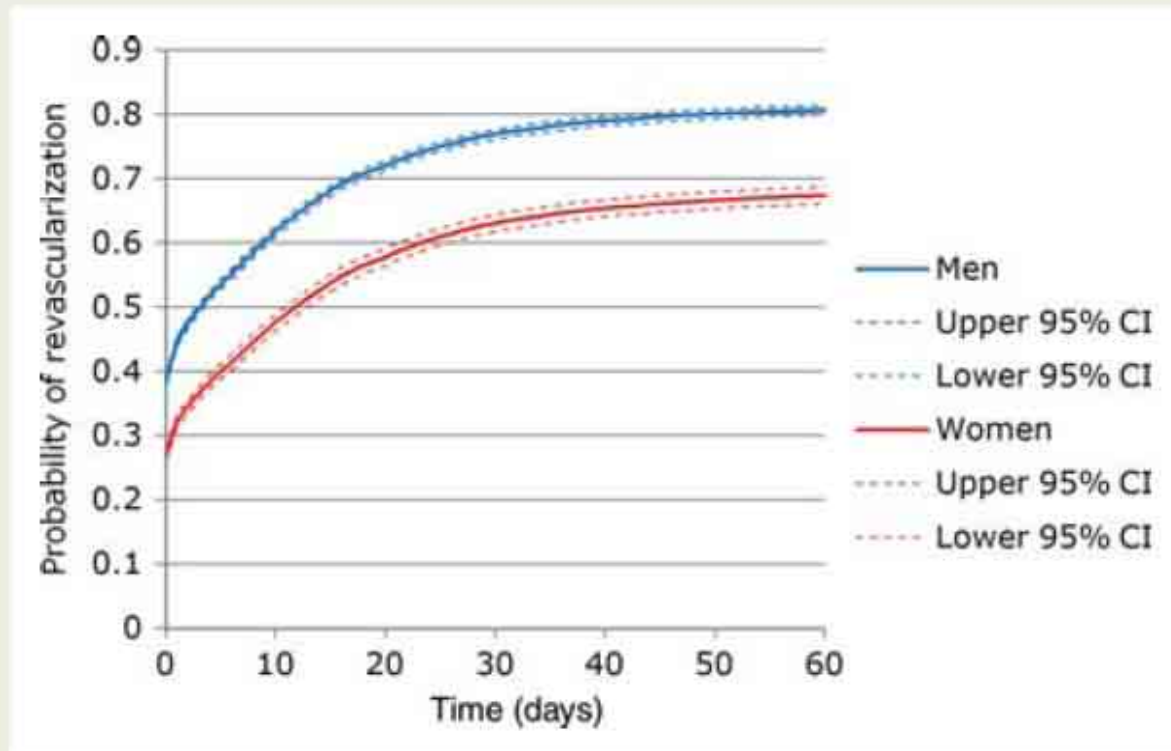
**Figure 2** Cumulative incidence curves showing gender differences in invasive examination rate in the first 60 days among patients admitted with acute coronary syndrome.

# Género e infarto

**Table 3** Successively adjusted relationship between gender and coronary angiography in patients admitted with acute coronary syndrome

Outcome measure	Observation time (days)	Women vs. men hazard ratio (95% confidence interval)		
		Model 1 <sup>a</sup>	Model 2 <sup>b</sup>	Model 3 <sup>c</sup>
CAG	60	0.68 (0.65–0.70)	0.83 (0.80–0.85)	0.82 (0.80–0.85)
CAG acute	1	0.66 (0.63–0.69)	0.78 (0.74–0.82)	0.78 (0.75–0.82)
CAG non-acute	59	0.69 (0.66–0.72)	0.87 (0.83–0.91)	0.86 (0.82–0.89)

# Género e infarto



**Figure 3** Cumulative incidence curves showing gender differences in revascularization rate in the first 60 days among patients undergoing coronary angiography.

# Género e infarto

**Table 4** Successively adjusted relationship between gender and revascularization in those patients who had a coronary angiography performed

Outcome measure	Observation time (days)	Women vs. men hazard ratio (95% confidence interval)		
		Model 1 <sup>a</sup>	Model 2 <sup>b</sup>	Model 3 <sup>c</sup>
Revascularization	60	0.68 (0.66–0.71)	0.69 (0.66–0.71)	0.91 (0.87–0.95)
CABG	60	0.59 (0.53–0.65)	0.55 (0.50–0.62)	0.83 (0.74–0.93)
PCI	60	0.74 (0.71–0.77)	0.75 (0.72–0.78)	0.93 (0.89–0.97)
PCI acute	1	0.76 (0.72–0.80)	0.79 (0.75–0.83)	0.93 (0.89–0.98)
PCI non-acute	59	0.72 (0.67–0.76)	0.71 (0.67–0.76)	0.92 (0.87–0.98)

# Género e infarto

**Table 1** Clinical trials

Topics	Number of participants	Number of women	Percentage of women	Mean age	Mean follow-up (years)	Trials with analysis by gender, <i>n</i> (%)
Blood pressure-lowering treatment	69 473	28 008	40.3	70.2	3.2	3/5 (60.0)
Diabetes and metabolic syndrome	48 508	20 091	41.4	61.1	4.3	4/7 (57.1)
Cholesterol-lowering therapy	50 194	15 036	30.0	60.8	3.2	1/6 (16.7)
Antithrombotic therapy and other interventions	24 874	7181	28.9	65.3	3.4	2/3 (66.7)
Ischaemic heart disease	90 400	24 756	27.3	62.6	1.0	5/13 (38.4)
Heart failure	46 141	12 834	27.8	69.2	2.4	8/11 (72.7)
Atrial fibrillation	22 511	9192	40.8	72.1	2.5	3/7 (42.8)
Stroke	28 790	10 618	36.9	69.0	1.3	5/10 (50.0)
Total	380 891	127 716	33.5	66.3	2.7	31/62 (50.0)

# Género e infarto

## Women with acute coronary syndrome are less invasively examined and subsequently less treated than men

Anders Hvelplund<sup>1,2,3\*</sup>, Søren Galatius<sup>2</sup>, Mette Madsen<sup>4</sup>, Jeppe N. Rasmussen<sup>1</sup>, Søren Rasmussen<sup>1</sup>, Jan Kyst Madsen<sup>2,3</sup>, Niels P.R. Sand<sup>5</sup>, Hans-Henrik Tilsted<sup>6</sup>, Per Thayssen<sup>7</sup>, Eske Sindby<sup>8</sup>, Søren Højbjerg<sup>9</sup>, and Steen Z. Abildstrøm<sup>1,3,10</sup>

<sup>1</sup>National Institute of Public Health, University of Southern Denmark, Øster Farimagsgade 5A, DK 1399 Copenhagen, Denmark; <sup>2</sup>Department of Cardiology, Gentofte University Hospital, Hellerup, Denmark; <sup>3</sup>Danish Heart Registry, Denmark; <sup>4</sup>Institute of Public Health, University of Copenhagen, Copenhagen, Denmark; <sup>5</sup>Department of Cardiology, SVS Esbjerg, Esbjerg, Denmark; <sup>6</sup>Department of Cardiology, Aalborg Hospital, Aarhus University Hospital, Aarhus, Denmark; <sup>7</sup>Department of Cardiology, Odense University Hospital, Odense, Denmark; <sup>8</sup>Department of Thoracic Surgery, Aalborg Hospital, Aarhus University Hospital, Aarhus, Denmark; <sup>9</sup>Department of Cardiology, Bispebjerg University Hospital, Copenhagen, Denmark; and <sup>10</sup>Cardiovascular Research Unit, Department of Internal Medicine, Glostrup University Hospital, Glostrup, Denmark

Received 27 October 2008; revised 28 August 2009; accepted 6 October 2009; online publish-ahead-of-print 20 November 2009

**Aims** To investigate if gender bias is present in today's setting of an early invasive strategy for patients with acute coronary syndrome in Denmark (population 5 million).

**Methods and results** We identified all patients admitted to Danish hospitals with acute coronary syndrome in 2005–07 (9561 women and 16 406 men). Cox proportional hazard models were used to estimate the gender differences in coronary angiography (CAG) rate and subsequent revascularization rate within 60 days of admission. Significantly less women received CAG (cumulative incidence 64% for women vs. 78% for men,  $P < 0.05$ ), with a hazard ratio (HR) of 0.68 (95% CI 0.65–0.70,  $P < 0.0001$ ) compared with men. The difference was narrowed after adjustment for age and comorbidity, but still highly significant (HR 0.82, 95% CI 0.80–0.85,  $P < 0.0001$ ). Revascularization after CAG was less likely in women with an HR of 0.68 (95% CI 0.66–0.71,  $P < 0.0001$ ) compared with men. More women (22%) than men (10%) ( $P < 0.0001$ ) had no significant stenosis on their coronary angiogram. However, after adjustment for the number of significant stenoses, age, and comorbidity women were still less likely to be revascularized (HR 0.91, 95% CI 0.87–0.95,  $P < 0.0001$ ).

**Conclusion** Women with ACS are approached in a much less aggressively invasive way and receive less interventional treatment than men even after adjusting for differences in comorbidity and number of significant stenoses.

# Género e infarto

**Table 2** Result of coronary angiography and subsequent invasive treatment

	Women	Men
Number of patients having CAG performed (%)	5845 (32)	12 417 (68)
Extent of disease at angiography, <i>n</i> (%) <sup>a</sup> (*)		
No significant stenosis	1298 (22)	1181 (10)
1 vessel disease	2281 (39)	5187 (42)
2 vessel disease	1032 (18)	2890 (23)
3 vessel disease	926 (16)	2487 (20)
Missing result	308 (5)	672 (5)
Revascularization, <i>n</i> (%)		
Revascularization within 60 days	3861 (66)	10 104 (81*)
PCI within 60 days	3496 (60)	8846 (71*)
CABG within 60 days	434 (7)	1538 (12*)

# Género e infarto

## Women and elderly: subgroups under-represented in clinical trials

Gerard Devlin

University of Auckland Waikato Hospital, Hamilton,  
New Zealand

Correspondence to Dr Gerard Devlin, Clinical Director  
of Cardiology, Senior Lecturer in Medicine, Waikato  
Hospital, Pembroke Street Private Bag 3200, Hamilton  
3240, New Zealand

Tel: +64 7 839 8899; fax: +64 7 839 8760;  
e-mail: devling@waikatodhb.govt.nz

**Current Opinion in Cardiology** 2010,  
25:335–339

### **Purpose of review**

Women and older patients with cardiovascular disease are frequently underinvestigated and are less likely to receive evidence-based treatments than younger male counterparts. A lack of sex and age-specific clinical trial evidence is frequently cited for this practice. This manuscript reviews the currently available evidence base in the management of both groups presenting with ischaemic heart disease and heart failure.

### **Recent findings**

Registry data in both women and older patients confirm that these groups receive suboptimal care in the management of ischaemic heart disease and heart failure. A number of recent trials, including several meta-analyses, do not support this practice and suggest that, with the possible exception of implantable cardiac defibrillator implantation in females, both women and elderly patients derive similar benefit to younger males in the management of risk factors, symptomatic ischaemic heart disease and heart failure.

### **Summary**

Pending sex and age-specific trials to address in particular not only outcomes but dosing and complications, women and elderly patients should receive similar evidence-based treatment of cardiac risk factors, symptomatic ischaemic disease and heart failure to younger males.

# Género e infarto

## Gender Differences in Hospital Mortality and Use of Percutaneous Coronary Intervention in Acute Myocardial Infarction

### Microsimulation Analysis of the 1999 Nationwide French Hospitals Database

Carine Milcent, PhD\*; Brigitte Dormont, PhD\*; Isabelle Durand-Zaleski, MD; Philippe Gabriel Steg, MD

**Background**—Women with acute myocardial infarction have a higher hospital mortality rate than men. This difference has been ascribed to their older age, more frequent comorbidities, and less frequent use of revascularization. The aim of this study is to assess these factors in relation to excess mortality in women.

**Methods and Results**—All hospital admissions in France with a discharge diagnosis of acute myocardial infarction were extracted from the national payment database. Logistic regression on mortality was performed for age, comorbidities, and coronary interventions. Nonparametric microsimulation models estimated the percutaneous coronary intervention and mortality rates that women would experience if they were “treated like men.” Data were analyzed from 74 389 patients hospitalized with acute myocardial infarction, 30.0% of whom were women. Women were older (75 versus 63 years of age;  $P<0.001$ ) and had a higher rate of hospital mortality (14.8% versus 6.1%;  $P<0.0001$ ) than men. Percutaneous coronary interventions were more frequent in men (7.4% versus 4.8%; 24.4% versus 14.2% with stent;  $P<0.001$ ). Mortality adjusted for age and comorbidities was higher in women ( $P<0.001$ ), with an excess adjusted absolute mortality of 1.95%. Simulation models related 0.46% of this excess to reduced use of procedures. Survival benefit related to percutaneous coronary intervention was lower among women.

**Conclusions**—The difference in mortality rate between men and women with acute myocardial infarction is due largely to the different age structure of these populations. However, age-adjusted hospital mortality was higher for women and was associated with a lower rate of percutaneous coronary intervention. Simulations suggest that women would derive benefit from more frequent use of percutaneous coronary intervention, although these procedures appear less protective in women than in men. (*Circulation*. 2007;115:833-839.)

# Género e infarto

TABLE 2. Use of Coronary Intervention According to Age Group

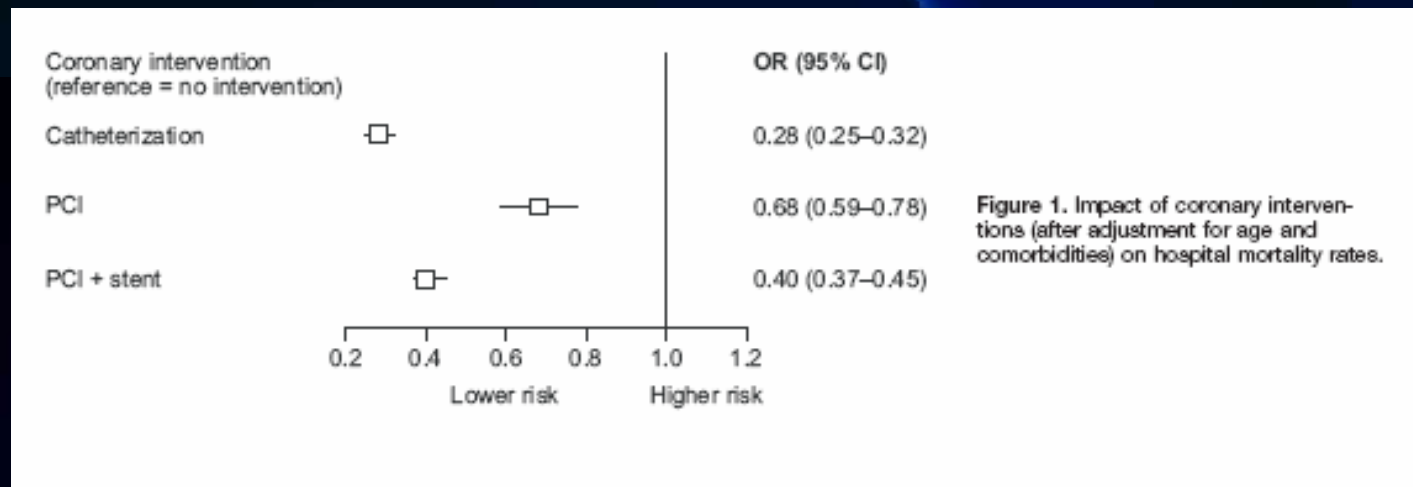
Age Group, y	Angiography Only, %		PCI, %		PCI+Stent, %				PCI/Coronary Angioplasty, %	
	Men	Women	Men	Women	Men	Women	Observed Gender Difference	PCI+Stent, Women Relative to Men, OR (95% CI)	Men	Women
≤55	24.6	28.4	9.1	8.3	31.3	25.2	6.1	0.74 (0.66–0.82)	62.1	54.1
56–65	24.9	26.6	7.9	6.7	28.1	23.4	4.7	0.78 (0.70–0.86)	59.1	53.1
66–75	24.9	24.3	7.3	6.6	22.1	19.9	2.2	0.88 (0.81–0.94)	54.1	52.2
76–85	16.7	12.2	5.0	4.2	15.1	11.2	3.9	0.71 (0.64–0.77)	54.6	55.7
>85	4.3	1.9	1.6	1.0	5.0	2.5	2.5	0.49 (0.38–0.64)	60.6	65.1
Overall	22.6	16.2	7.4	4.8	24.4	14.2	10.3	0.51 (0.49–0.53)	58.5	53.9

# Género e infarto

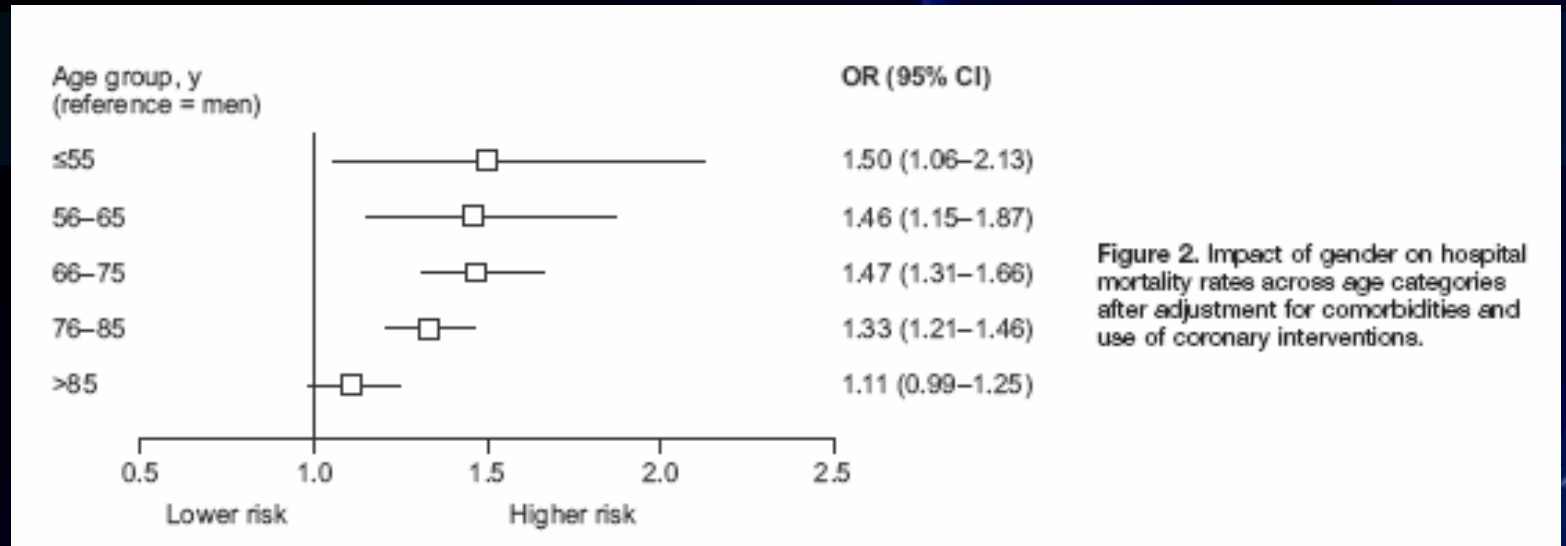
TABLE 3. Hospital Mortality in Patients With Acute Myocardial Infarction

Age Group, y	n	Mortality, n (%)		Odds Ratio (95% CI), Women vs Men		Odds Ratio (95% CI) in Women vs Men Adjusted for Comorbidities	
		Men	Women		P		P
≤55	18 332	218 (1.3)	39 (1.9)	1.46 (1.04–2.06)	0.03	1.53 (1.08–2.16)	0.02
56–65	13 671	312 (2.8)	87 (3.8)	1.38 (1.09–1.76)	<0.01	1.49 (1.17–1.91)	0.001
66–75	19 909	849 (8.1)	484 (8.1)	1.34 (1.20–1.51)	<0.000	1.51 (1.34–1.70)	<0.001
76–85	15 331	1148 (14.1)	1246 (17.4)	1.28 (1.18–1.40)	<0.000	1.43 (1.30–1.56)	<0.001
>85	7 146	668 (28.9)	1448 (29.9)	1.05 (0.94–1.12)	0.38	1.15 (1.03–1.29)	0.02
Total	74 389	3195 (8.1)	3304 (14.8)	1.37 (1.30–1.46)	<0.001	2.65 (2.52–2.79)	<0.001

# Género e infarto



# Género e infarto



# Género e infarto

## ENROLLMENT OF WOMEN IN CARDIOVASCULAR CLINICAL TRIALS FUNDED BY THE NATIONAL HEART, LUNG, AND BLOOD INSTITUTE

DAVID J. HARRIS, B.A., AND PAMELA S. DOUGLAS, M.D.

### ABSTRACT

**Background** With the recognition that certain aspects of cardiovascular disease are specific to sex, the U.S. government has sought to ensure that federally funded clinical research yields adequate high-quality information about heart disease in women.

**Methods** We tabulated the numbers of men and women in cardiovascular clinical trials funded by the National Heart, Lung, and Blood Institute (NHLBI) between 1965 and 1998, recording both total numbers and the numbers for each type of cardiovascular disease. We analyzed the data according to the sex-specific prevalence of disease and assessed changes in enrollment over time. We performed a similar analysis after excluding all single-sex trials.

**Results** A total of 398,801 subjects (215,796 women and 183,005 men) were enrolled in NHLBI-funded studies of cardiovascular disease. The overall enrollment rate for women (54 percent) exceeded the prevalence of cardiovascular disease in women in the general population (49 percent) and increased over time ( $P=0.002$ ). With single-sex trials excluded, the enrollment rate for women was 38 percent, which did not change significantly over time. In studies of coronary artery disease and hypertension the rates of enrollment of women were similar to or exceeded the prevalence of these disorders in women. The enrollment rate increased significantly over time in studies of coronary artery disease ( $P<0.001$ ) but not in studies of hypertension or arrhythmia. Women were under-enrolled in studies of heart failure, and the rate of enrollment did not change significantly over time. When single-sex trials were excluded from the analysis of enrollment rates according to the prevalence of disease, the results were similar. There was no change in enrollment rates over time for any category of disease.

**Conclusions** Federal efforts to increase the representation of women in clinical trials have been moderately successful primarily because of the institution of a small number of large, single-sex trials involving coronary artery disease. There has been no change in the sex composition of cohorts in the majority of studies of cardiovascular disease. (N Engl J Med 2000; 343:475-80.)

©2000, Massachusetts Medical Society.

CARDIOVASCULAR disease is the most common cause of death in both men and women in the United States and is increasingly recognized as having sex-specific features. Clinical and epidemiologic studies have shown that men and women with cardiovascular disease differ with respect to disease processes, clinical presentations, and outcomes.<sup>1,2</sup> The recognition of sex-based differences in cardiovascular disease is a compelling reason for ensuring that the enrollment of women in cardiovascular clinical trials is proportional to the prevalence of cardiovascular disease among women in the general population.

In 1965, the National Heart Institute, as the National Heart, Lung, and Blood Institute (NHLBI) was then known, funded its first cardiovascular clinical trial, the Coronary Drug Project. Since then, the institute has funded a total of 126 cardiovascular clinical trials. The enrollment of women in clinical trials came under scrutiny in the mid-1980s, with the realization that less information about treatment was available for women with cardiovascular disease than for men with the disease.<sup>4</sup> Various federal mandates and other initiatives have subsequently sought to increase the enrollment of women in clinical trials. We performed a study to determine how successful these efforts have been in increasing the enrollment of women in cardiovascular clinical trials conducted by the NHLBI. In addition, we determined whether the pattern of enrollment differed according to the type of cardiovascular disease under study.

### METHODS

#### Clinical Trials

On October, 1, 1999, in response to a request filed under the Freedom of Information Act, the NHLBI provided one of us with a list of all cardiovascular clinical trials conducted between 1965 and 1998. The information included a brief description of each trial, the date of its inception, and the numbers of enrolled men and women (including boys and girls in studies of congenital heart disease). Actual numbers were provided for studies conducted before 1995 and predicted numbers for more recent studies. Of the 126 clinical trials, 5 were initiated before the NHLBI required that re-

# Género e infarto

# Circulation

JOURNAL OF THE AMERICAN HEART ASSOCIATION

American Heart  
Association®   
*Learn and Live™*

## **Angina Symptoms Are Associated With Mortality in Older Women With Ischemic Heart Disease**

Janneke Berecki-Gisolf, Lindy Humphreys-Reid, Andrew Wilson and Annette Dobson

*Circulation* 2009;120:2330-2336; originally published online Nov 23, 2009;  
DOI: 10.1161/CIRCULATIONAHA.109.887380

Circulation is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75214

Copyright © 2009 American Heart Association. All rights reserved. Print ISSN: 0009-7322. Online ISSN: 1524-4539

The online version of this article, along with updated information and services, is located on the World Wide Web at:

<http://circ.ahajournals.org/cgi/content/full/120/23/2330>

# Género e infarto

## Angina Symptoms Are Associated With Mortality in Older Women With Ischemic Heart Disease

Janneke Berecki-Gisolf, MD, PhD;  
Lindy Humphreys-Reid, RN, BNurs, GradDipHlthSci(Ed), MHlthSci;  
Andrew Wilson, MBBS, PhD, FRACP; Annette Dobson, MSc, PhD

**Background**—Angina symptoms have been reported to predict mortality in men. The aim of this study was to investigate the association between angina symptoms and mortality in women.

**Methods and Results**—In 2004, 873 older participants in the Australian Longitudinal Study on Women's Health with self-reported ischemic heart disease participated in a nested substudy. Women were 77 to 83 years of age; 165 (19%) died during the 4.5-year follow-up. Angina symptoms were established with Seattle Angina Questionnaire (SAQ) scores for physical limitation, angina frequency, angina stability, and disease perception. Proportional hazards modeling was used to examine the relationship of SAQ score differences with mortality. Physical limitation scores were associated with mortality, with hazard ratios of 1.1, 1.9, and 3.4 for mild, moderate, and severe versus minimal limitations, respectively ( $P<0.001$ ). Angina frequency scores were also associated with death, with hazard ratios of 1.2, 1.2, and 4.8 for mild, moderate, and severe versus minimal angina frequency, respectively ( $P<0.001$ ). Age (hazard ratio 1.1, 95% confidence interval 1.0 to 1.2), pulmonary disease (hazard ratio 1.6, 95% confidence interval 1.2 to 2.3), and kidney disease (hazard ratio 1.7, 95% confidence interval 1.1 to 2.5) were statistically significantly associated with mortality in a multivariable model of clinical predictors. In a combined model with SAQ scores and clinical predictors, SAQ scores for physical limitation and angina stability remained statistically significantly associated with mortality.

**Conclusions**—In older women with ischemic heart disease, angina symptoms assessed by use of SAQ scores for physical limitations and angina frequency were associated with mortality; SAQ scores may therefore prove to be a useful tool for risk assessment in this patient group. (*Circulation*. 2009;120:2330-2336.)

# Infarto agudo de miocardio en mujeres: características clínicas y evolución a corto y a largo plazo

STELLA M. MACÍN<sup>1</sup>, EDUARDO R. PERNA<sup>2</sup>, LORENA CORONEL<sup>3</sup>, JAIME PARRA<sup>4</sup>, PERLA BARRIOS<sup>5</sup>, MARCELO DE LA ROSA<sup>6</sup>, PABLO LIVA<sup>7</sup>, JORGE BACARO<sup>8</sup>, JORGE R. BADARACCO<sup>9</sup>

Recibido: 03/04/2008

Aceptado: 10/11/2008

*Dirección para separatas:*

Dra. Stella Maris Macín  
Unidad Cuidados Intensivos  
Coronarios  
Bolívar 1334  
(3400) Corrientes, Argentina  
Tel: 54-03783-410000  
Fax: 54-03783-410030  
e-mail: macinucie@hotmail.com o  
stellam@gigared.com

## RESUMEN

### Introducción

En América latina se conoce poco acerca de las diferencias entre varones y mujeres con síndrome coronario agudo. La hipótesis del presente trabajo es que el sexo presenta diferente riesgo cardiovascular en el infarto agudo de miocardio.

### Objetivos

Comparar características clínicas y pronóstico a corto y a largo plazo en mujeres (grupo I) y en varones (grupo II) con infarto agudo de miocardio (IAM).

### Material y métodos

Desde enero de 2001 hasta diciembre de 2004 se admitieron en forma prospectiva y consecutiva 536 pacientes con IAM dentro de las 24 horas de evolución. De ellos, 144 (26,9%) eran mujeres (grupo I).

### Resultados

La mediana de edad del grupo I fue mayor (66 [rango intercuartil 25-75: 56-75] *versus* 60 [rango intercuartil 25-75: 52-68] años;  $p < 0,001$ ). Las mujeres fumaban menos (25% *versus* 46,7%;  $p < 0,001$ ), tenían menos infarto previo (18,1% *versus* 25,3%;  $p = 0,008$ ) y más angina crónica estable (20,8% *versus* 12%;  $p = 0,01$ ). Al ingreso, las mujeres estaban más taquicárdicas (80 *versus* 76 lat/min;  $p = 0,01$ ), con mayor nivel de urea (0,48 *versus* 0,36 g/L;  $p = 0,003$ ) y similar Fey (50% *versus* 51%;  $p = 0,27$ ). Tuvieron peor evolución hospitalaria: muerte (9,7% *versus* 4,8%;  $p = 0,037$ ), angina refractaria (9,7% *versus* 4,2%;  $p = 0,039$ ) y edema agudo de pulmón (12,5% *versus* 5,4%;  $p = 0,005$ ). Las estrategias de reperfusión en ambos grupos fueron: trombolíticos (21,4% *versus* 20,3%;  $p = ns$ ) y angioplastia primaria (18,1% *versus* 21,8%;  $p = ns$ ). La supervivencia a los 54 meses fue del 77% *versus* el 85% en los grupos I y II, respectivamente (*log rank test*:  $p = 0,032$ ). El sexo fue una variable significativa en el análisis univariado (OR = 1,71;  $p = 0,035$ ). En el modelo proporcional de Cox, las variables significativas de mortalidad fueron edad (HR = 1,033;  $p = 0,006$ ) y, al ingreso, urea (HR = 4,275;  $p < 0,001$ ), frecuencia cardíaca (HR = 1,018;  $p = 0,004$ ) y Killip (HR = 2,771;  $p = 0,01$ ).

### Conclusiones

Las mujeres admitidas por IAM tienen un perfil de riesgo diferente que los varones, tanto a corto plazo como a largo plazo, a pesar de que son tratadas en forma similar. El sexo no fue un predictor de riesgo independiente en el seguimiento luego de ajustar con otras variables.

# Género e infarto

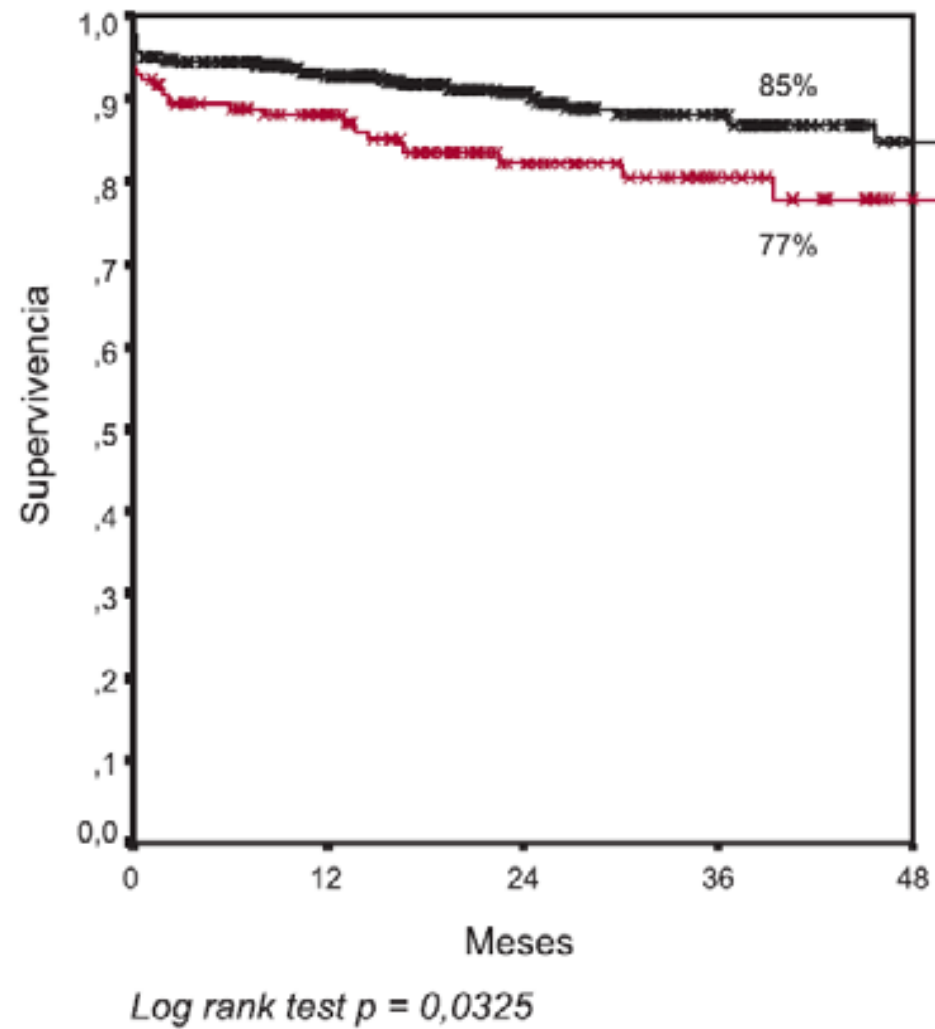
Sexo femenino (OR = 1,71; p = 0,035, IC 95% 1,039-2,839)

Variable	OR	IC 95%	p
Sexo (F/M)	1,214	0,82-1,62	ns
Edad, años	1,033	1,010-1,058	0,006
Urea, mg/dl	4,275	1,006-1,031	< 0,001
Frecuencia cardíaca, lat/min	1,018	1,006-1,031	0,004
Killip máximo			< 0,001
B	2,771	1,276-6,016	0,010
C	2,738	1,136-6,596	0,025
D	28,441	14,261-56,719	< 0,001

# Género e infarto

Variable	OR	IC 95%	p
Sexo (F/M)	1,214	0,82-1,62	ns
Edad, años	1,028	1,007-1,050	0,010
Urea $\geq$ 55 g/L (Sí/No)	6,197	3,415-11,243	< 0,001
Frecuencia cardíaca, lat/min	1,017	1,004-1,030	0,011
Killip máximo			< 0,001
B	2,586	1,183-5,655	0,017
C	3,535	1,619-7,719	0,002
D	30,178	14,680-62,039	< 0,001

# Género e infarto



**Fig. 1.** Supervivencia en ambos grupos.

- **La edad más avanzada en la población femenina**
- ***Tendencia a mayor demora en la reperfusión* comparada con los varones, (tiempo de demora desde el inicio de los síntomas hasta la reperfusión, media de 5.30 horas, fue mas prolongado en mujeres respecto a los varones (420 vs 300 min,  $p=0.04$ )**
- **Con similar utilización de terapias.**

# Género e infarto

- Pacientes con NO STEMI
- Tienen menos probabilidad de recibir una estrategia invasiva temprana, a pesar del alto riesgo
- Roe y colab mostraron que las mujeres tienen mayor probabilidad de enfermedad coronaria menos obstructiva
- Women's Ischemia Syndrome Evaluation (WISE) tienen menos uso de lib lia, clopidogrel u otros antiplaquetarios
- Con similares valores de TnT las mujeres se intervienen menos con ATC

Women, Acute Ischemic Heart Disease, and Antithrombotic Therapy: Challenges and Opportunities

Robert A. Harrington

*Circulation* 2007;115:2796-2798

# Conclusiones

- La enfermedad coronaria es menos frecuente en mujeres, después de los 65 años iguala al hombre
- Es más frecuente el hallazgo angiográfico de coronarias normales, sin embargo el pronóstico en el IAM con ST es 3-5 veces más adverso
- El SCA en mujeres es subdiagnosticado y concurren a la consulta más tarde

## Género e infarto

### Conclusiones

- Es real que existen diferencias biológicas entre mujeres y varones, sin embargo ¿es peor? dado que las mujeres se infartan 10 años más tarde y la incidencia de infarto es 1 de cada 4 varones