Aspectos diferenciales de la insuficiencia cardiaca en la mujer

Aspectos epidemiológicos y manejo de la insuficiencia cardiaca avanzada en la mujer

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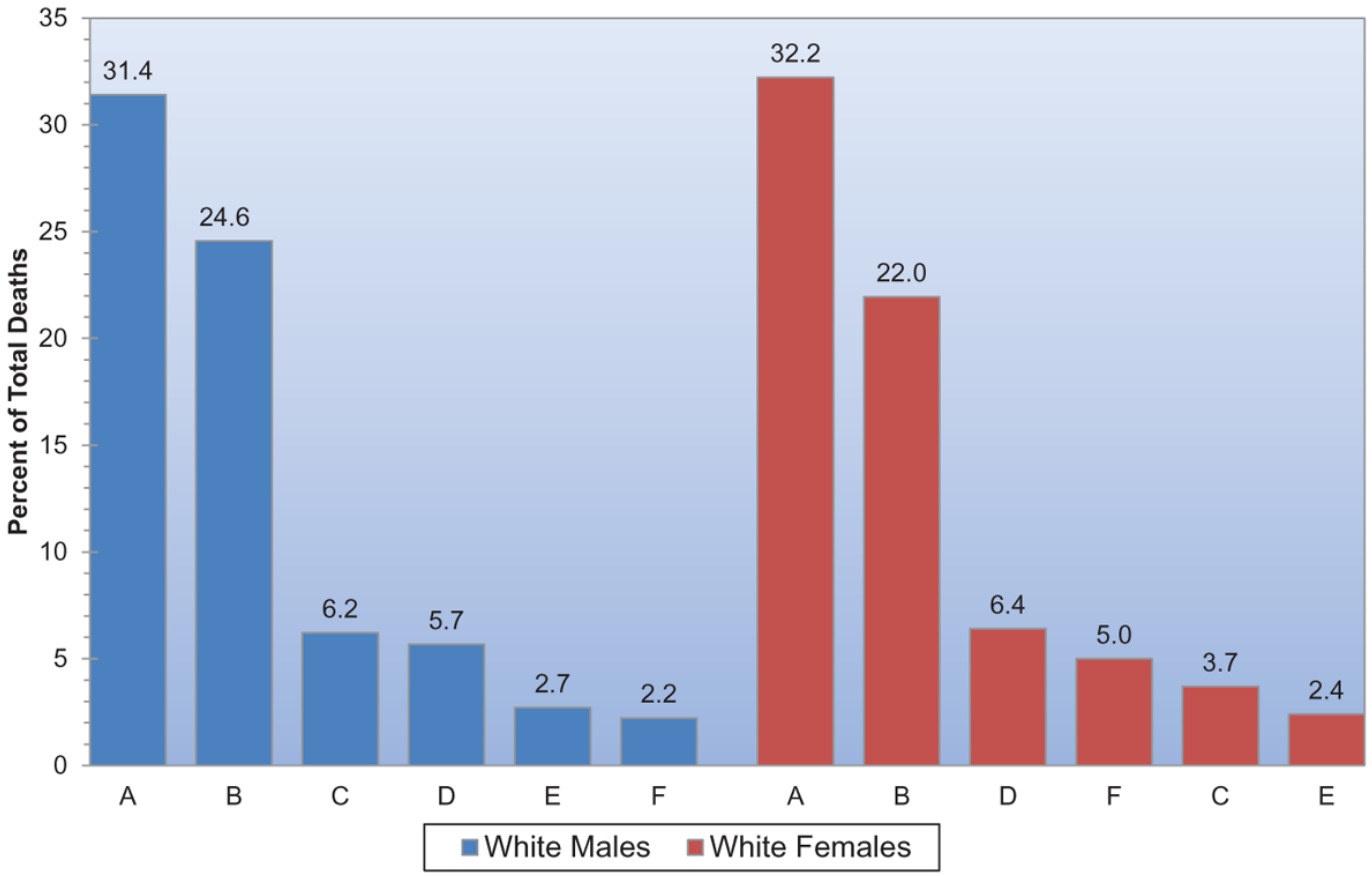
Unidad de Insuficiencia Cardiaca y Trasplante Cardiaco
Hospital Universitario Central de Asturias

CV es 1^{era} causa de MORTALIDAD en países desarrollados



A: CV
B: cáncer
C: accidente
D: EPOC
E: DM
F: demencia

102.80.

Heart Disease and Stroke Statistics—2014 Update:

A Report From the American Heart Association

La IC es la 3era causa de MORTALIDAD CARDIOVASCULAR

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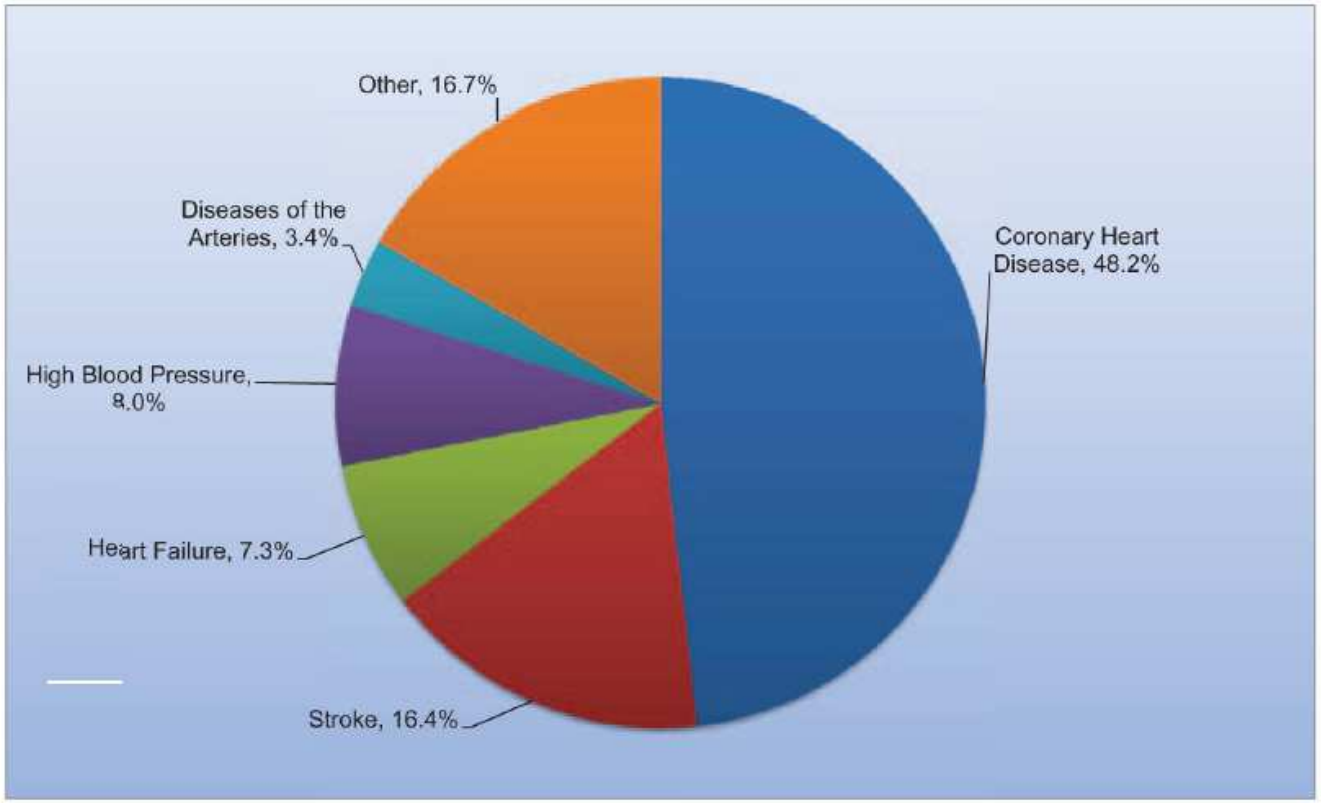

Chart 13-5.
Percentage breakdown of deaths attributable to cardiovascular disease (United States: 2010).

Heart Disease and Stroke Statistics—2014 Update:

A Report From the American Heart Association

Importancia de CARACTERIZAR LA IC

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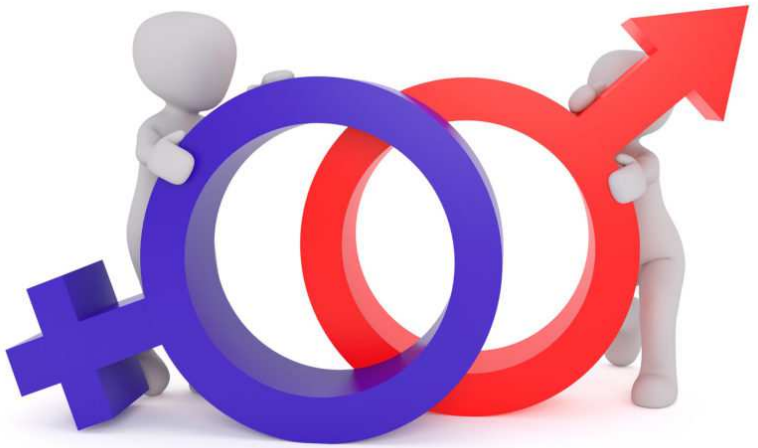


PUESTA AL DÍA

Enfermedades cardiovasculares en la mujer (V)

Insuficiencia cardiaca. ¿Son diferentes las mujeres?

Mayor incidencia en varones.

Mayor prevalencia en mujeres.

Menor supervivencia en varones.

2006 REC Crespo-Leiro

Circulation. 2014 January 21; 129(3): e28–e292. doi:10.1161/01.cir.0000441139.02102.80.

Heart Disease and Stroke Statistics—2014 Update:

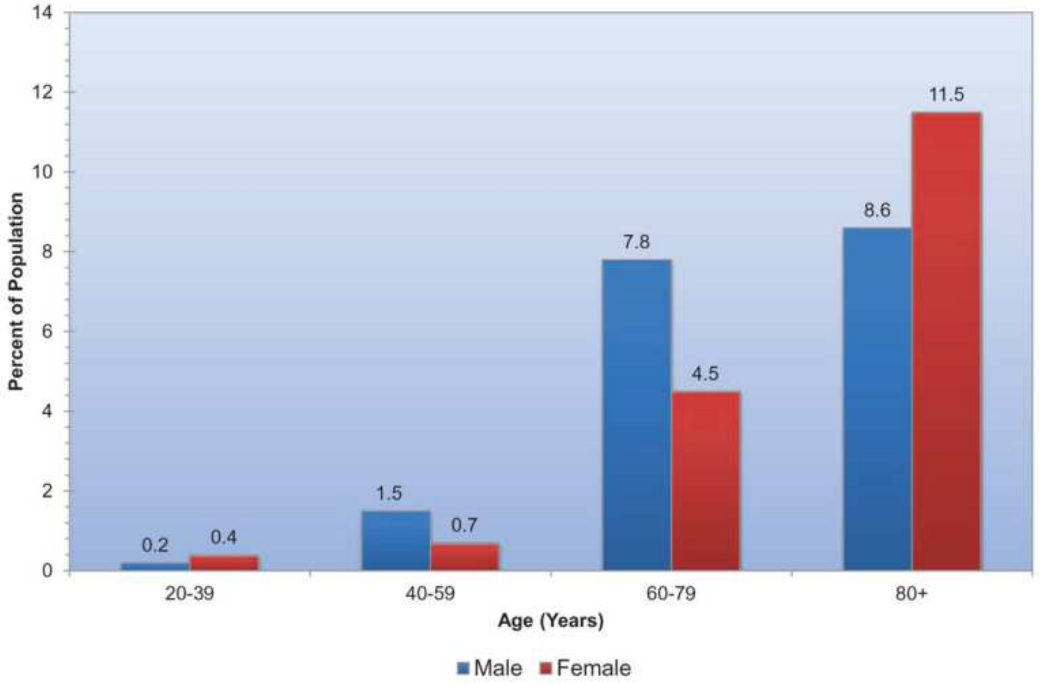
A Report From the American Heart Association

Heart Failure

Population Group	Prevalence, 2010, Age ≥20 y	Incidence (New Cases), Age ≥45 y	Mortality, 2010, All Ages*
Both sexes	5 100 000 (2.1%)	825 000	57 757
Males	2 700 000 (2.5%)	395 000	24 385 (42.2%)‡
Females	2 400 000 (1.8%)	430 000	33 372 (57.8%)‡

Heart Disease and Stroke Statistics—2014 Update:

A Report From the American Heart Association



Prevalence of heart failure by sex and age (National Health and Nutrition Examination Survey: 2007–2010). Source: National Center for Health Statistics and National Heart, Lung, and Blood Institute.

Artículo original

Tendencias de mortalidad prematura por insuficiencia cardiaca por comunidades autónomas en España, periodo 1999-2013

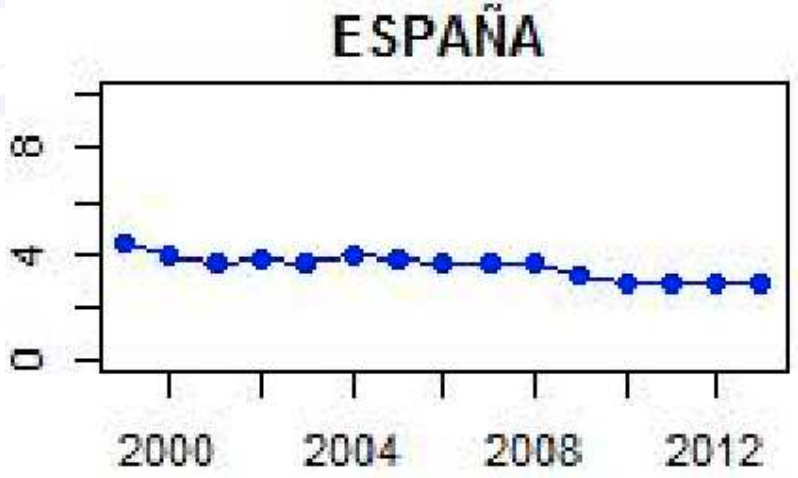


Figura 1 del material suplementario. Tasas de mortalidad prematura por IC ajustadas por edad (método directo, población europea de 2013), para cada comunidad autónoma y para España, para cada año del periodo 1999-2013, en varones. IC: insuficiencia cardiaca.

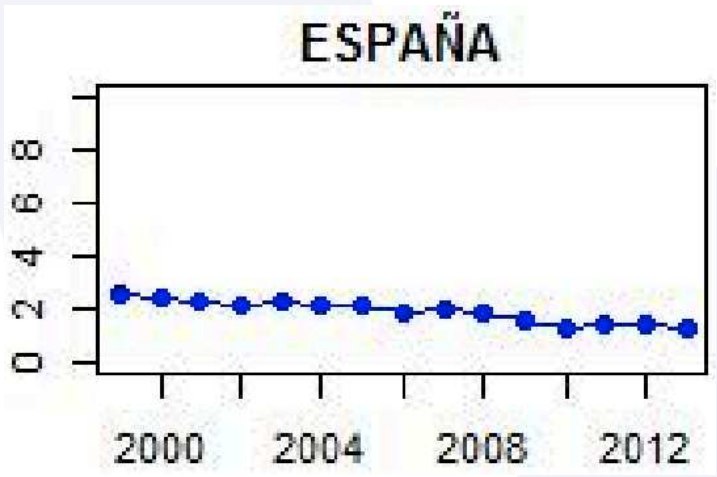
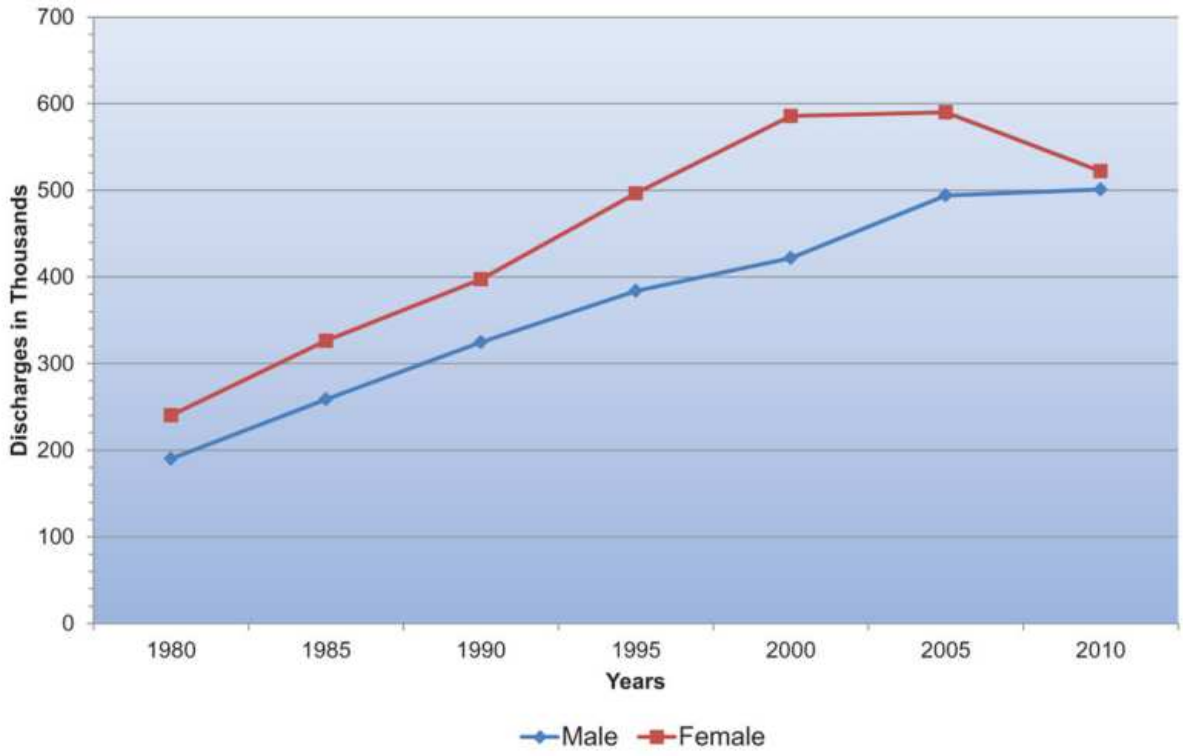


Figura 2 del material suplementario. Tasas de mortalidad prematura por IC ajustadas por edad (método directo, población europea de 2013), para cada comunidad autónoma y para España, para cada año del periodo 1999-2013, en mujeres. IC: insuficiencia cardiaca.

2018 REC Gómez-Martínez

Heart Disease and Stroke Statistics—2014 Update:

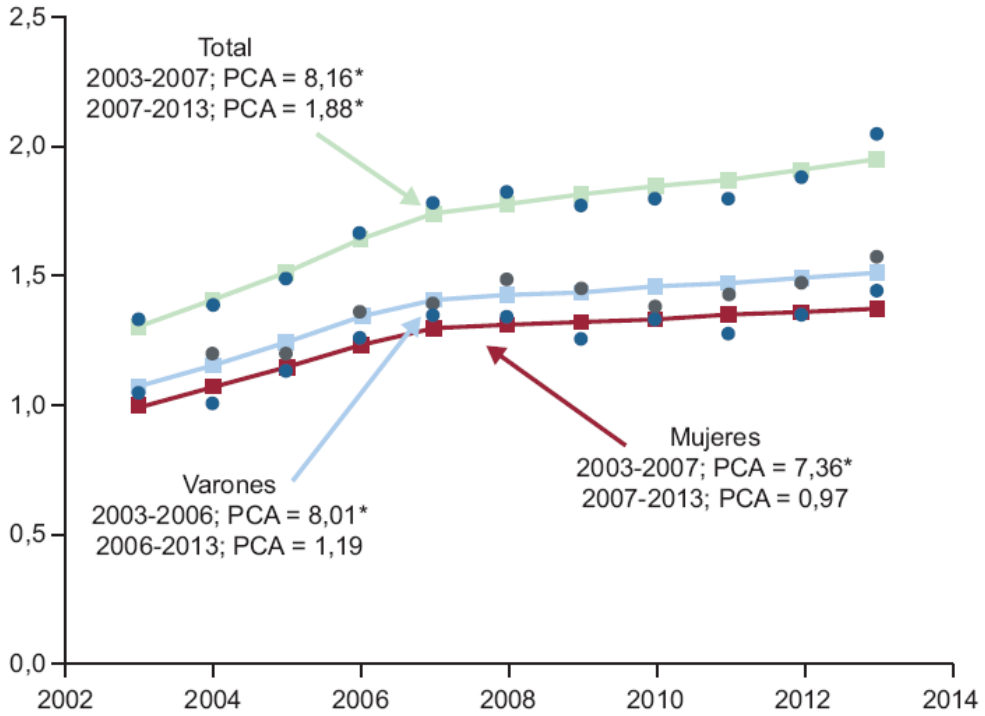
A Report From the American Heart Association



Hospital discharges for heart failure by sex (United States: 1980–2010).

Artículo original

Tendencia y características de la hospitalización por insuficiencia cardiaca en un marco poblacional durante el periodo 2003-2013



2017 REC Fernández-Gassó

IC en la mujer: aspectos epidemiológicos

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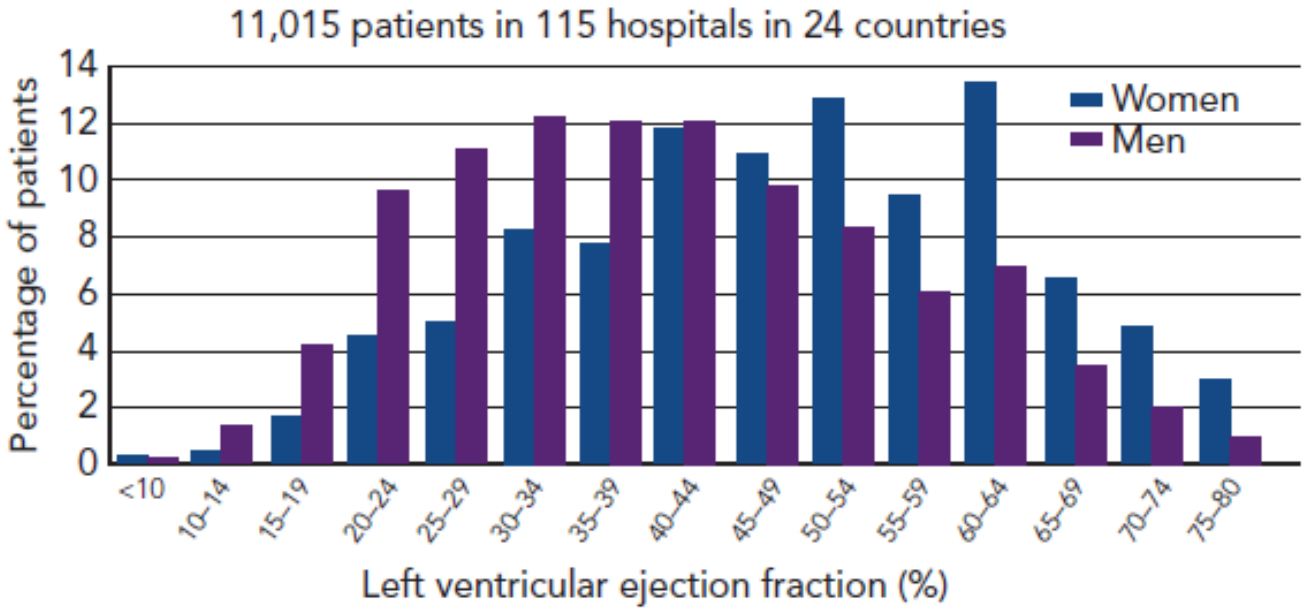
Fraccion de eyección reducida/preservada

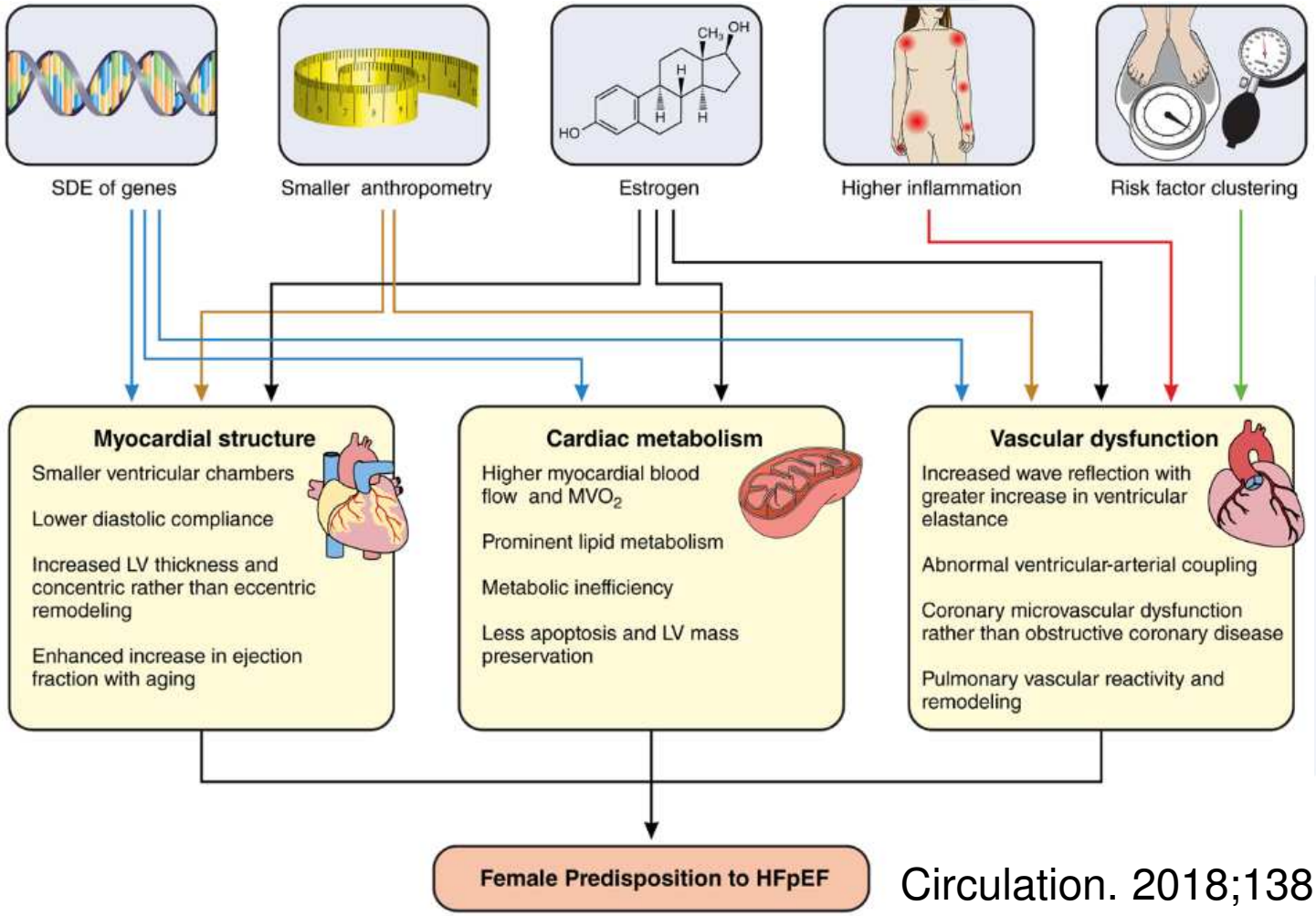
Figure 1: Distribution of Left Ventricular Ejection Fractions in Hospital-diagnosed Cases of Heart Failure in Europe[30]



Cardiac Failure Review, 2015;1(1):11–5

Sex Differences in Cardiovascular Pathophysiology

Why Women Are Overrepresented in Heart Failure With Preserved Ejection Fraction



Circulation. 2018;138:198–205

IC en la mujer: aspectos epidemiológicos

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Sex Differences in Cardiovascular Pathophysiology

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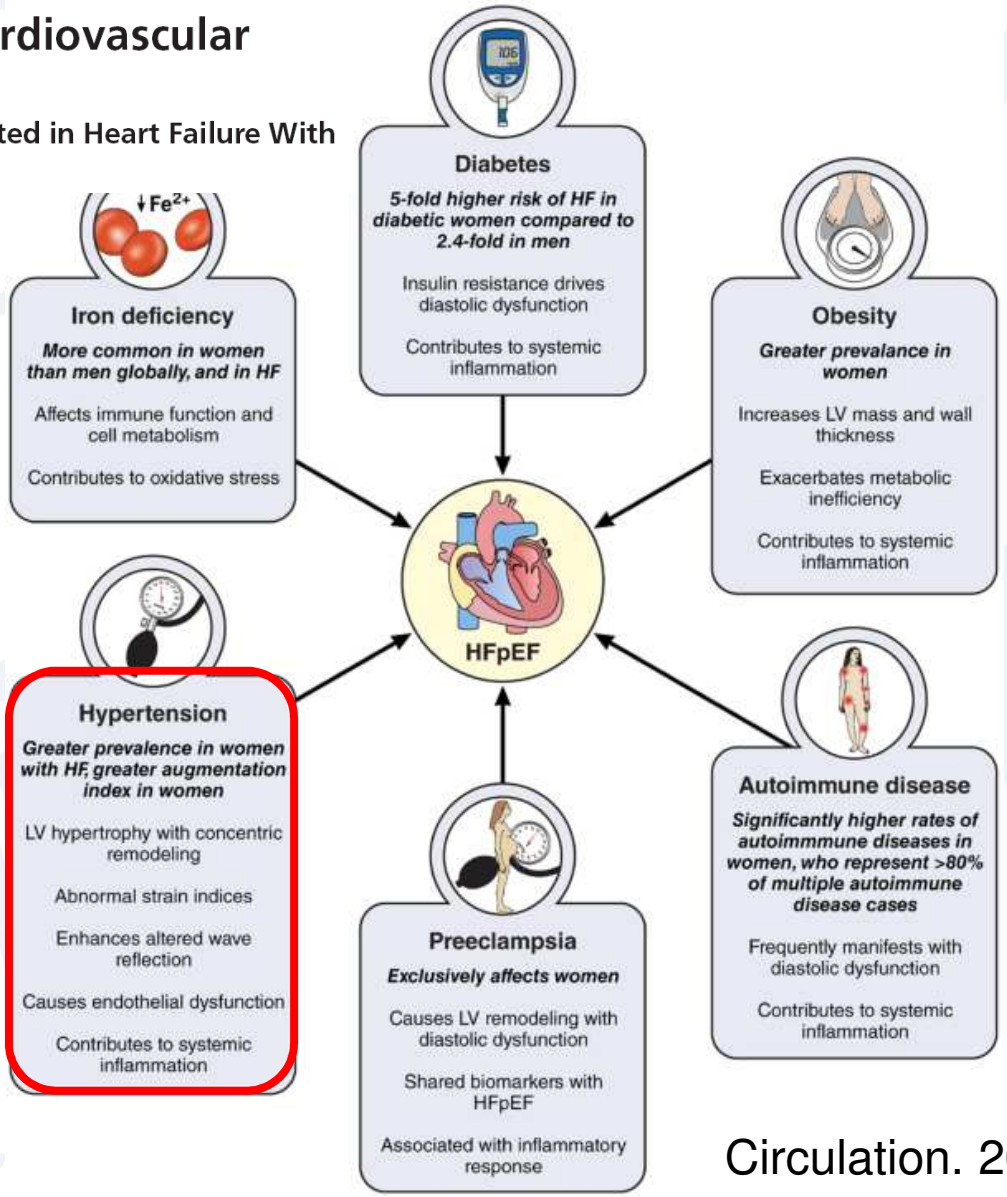

Circulation. 2018;138:198–205

IC en la mujer: aspectos epidemiológicos

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Sex Differences in Cardiovascular Pathophysiology

Why Women Are Overrepresented in Heart Failure With Preserved Ejection Fraction

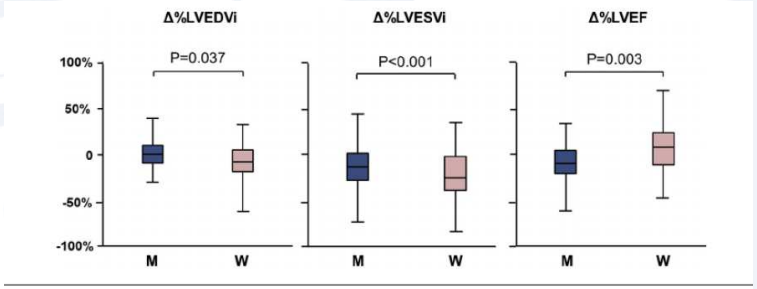
	Hombres	Mujeres
FE preservada	33%	66%
FE reducida	60%	40%

¿Las diferencias son debidas a la predisposición de la mujer a la ICFEp o a la del hombre a desarrollar ICFEr?

- ✓ Mayor resistencia a la pérdida de miocardiocitos en el IAM
- ✓ Mayor recuperación de miocardiocitos tras ICP
- ✓ Menos remodelado excéntrico tras IAM

Circulation. 2018;138:198–205

Effect of Sex on Reverse Remodeling in Chronic Systolic Heart Failure



In the whole population, women exhibited signi cantly greater percentage variations of LVEDVi, LVESVi, and LVEF. Δ%LVEDVi for women: −3.47% (−16.41%/+28.93%); for men: 0% (−10.71%/+8.96%). Δ%LVESVi for women: −10.52% (−27.62%/+7.23%); for men: −1.76% (−16.27%/+10.89%). Δ%LVEF for women: +7.14% (−3.13%/+29.29%); for men: +3.64% (−6.67%/+17.50%). LVEF = left ventricular ejection fraction; LVEDVi = left ventricular end-diastolic volume index; LVESVi = left ventricular end-systolic volume index; M = men; W = women.

FIGURE 2 Reverse Remodeling Is More Frequent Among Women Regardless of Baseline LVEF Category

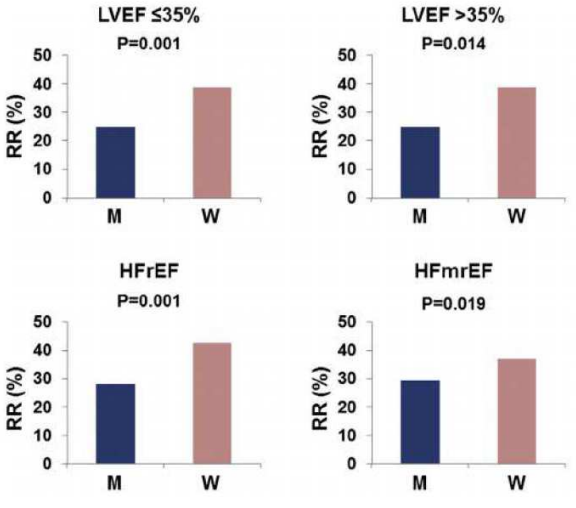


TABLE 3 Predictors of Reverse Remodeling Among Patients With Severe Systolic Dysfunction

	LVEF 35% n = 530 (57%)				HFrEF (LVEF 40%) n = 610 (66%)			
	Univariate Analysis		Multivariate Analysis		Univariate Analysis		Multivariate Analysis	
	HR (95% CI)	p Value	HR (95% CI)	p Value	HR (95% CI)	p Value	HR (95% CI)	p Value
Females	1.96 (1.30-2.94)	0.001	1.62 (1.05-2.49)	0.029	1.90 (1.298-2.776)	0.001	1.56 (1.04-2.33)	0.032
Nonischemic cause	2.23 (1.53-3.24)	0.001	1.94 (1.31-2.88)	0.001	2.29 (1.62-3.26)	0.001	2.03 (1.41-2.93)	0.001
HF duration	0.93 (0.90-0.97)	0.001	0.91 (0.85-0.94)	0.001	0.94 (0.91-0.97)	0.001	0.91 (0.85-0.94)	0.001
LBBB	1.60 (1.05-1.42)	0.028	1.68 (1.08-2.61)	0.022	1.64 (1.10-2.43)	0.015	1.71 (1.12-2.59)	0.012

JACC. 2017;5:735-42

IC en la mujer: aspectos epidemiológicos

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Los estudios epidemiológicos de IC han **sugerido importantes diferencias** entre varones y mujeres.

Estas diferencias **no son uniformes** entre estudios y varían dependiendo de múltiples factores que incluyen criterios diagnósticos, entorno y época en que fue realizado el estudio y características de los pacientes.

✓Mayor **incidencia.**

✓Mayor **prevalencia** en población **anciana**.

✓Mayor **mortalidad en global**. Menor mortalidad prematura.

✓Mayor número de **ingresos hospitalarios**.

✓Predominio de IC **FEp.**

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¿Cómo condiciona el género el tratamiento de la IC avanzada?

2009 Focused Update: ACCF/AHA Guidelines for the Diagnosis and Management of Heart Failure in Adults

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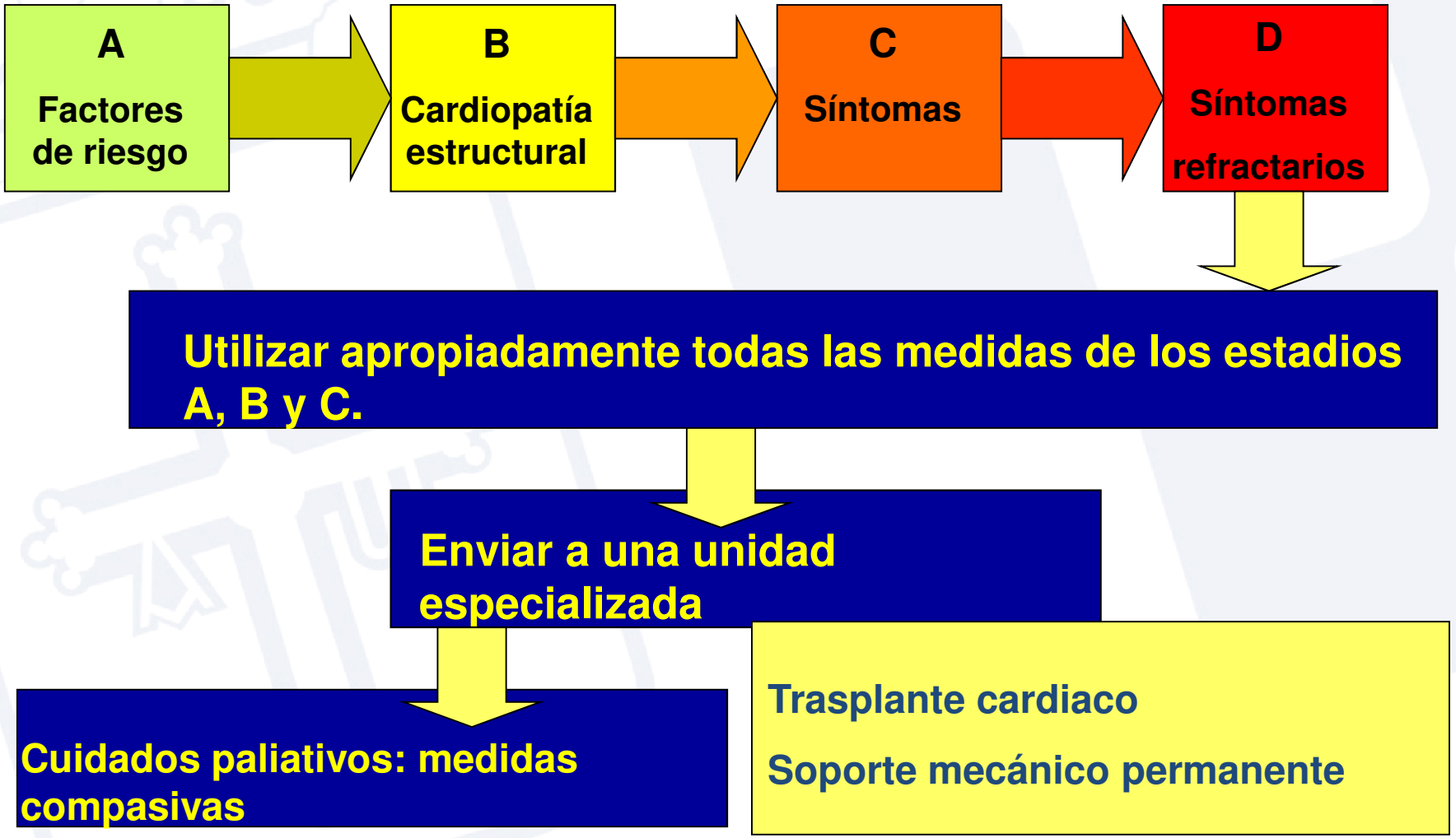
Tratamiento de insuficiencia cardiaca avanzada



Manejo de la IC avanzada en la mujer: TX C

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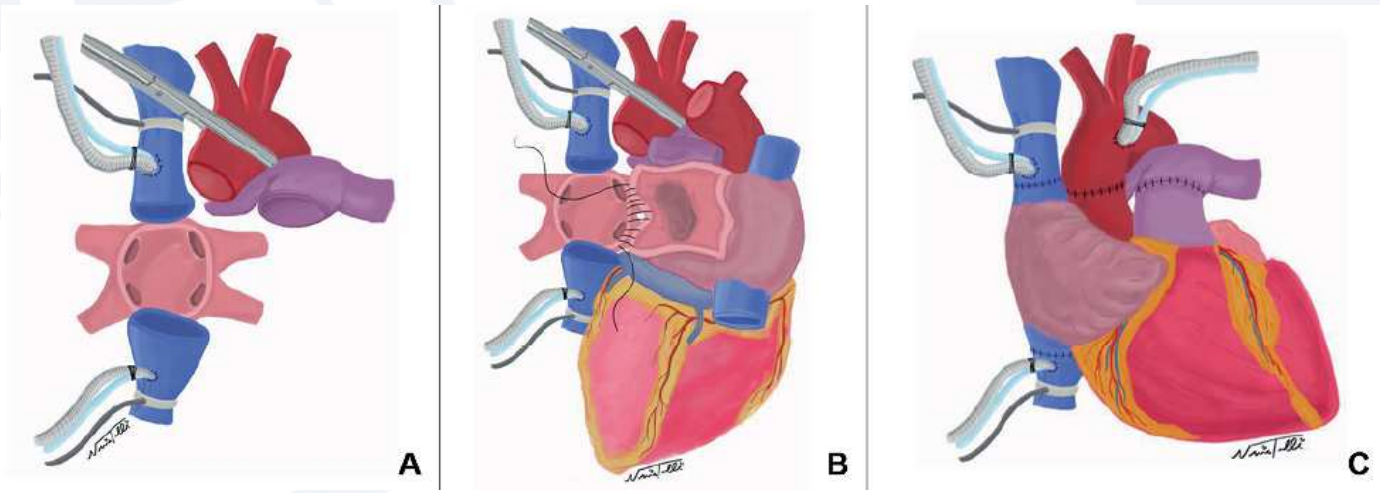
ISHLT • INTERNATIONAL SOCIETY FOR HEART AND LUNG TRANSPLANTATION

Registro voluntario internacional

>140.000 TX C



Manejo de la IC avanzada en la mujer: TX C

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	1992-2003 (N = 48,776)	2004-2008 (N = 18,785)	2009-6/2017 (N = 35,703)	p-value
Recipient gender (% male)	80.1%	77.4%	74.9%	<0.0001
Male recipient/female donor	20.6%	17.6%	16.4%	<0.0001
Female recipient/male donor	9.2%	9.9%	9.6%	0.0141
Recipient/donor diabetes mellitus	14.8%[1]/ 1.6%[1]	23.0%/ 2.5%	26.5%/ 3.4%	<0.0001/ <0.0001
Recipient history of prior dialysis	3.3%[1]	4.2%	4.7%	<0.0001
Recipient/donor cigarette history	-/ 36.2%[1]	49.3%[2]/ 23.8%	45.4%/ 15.2%	<0.0001/ <0.0001
Recipient/donor hypertension	35.3%[1]/ 11.0%[1]	42.6%/ 12.4%	50.8%/ 15.4%	<0.0001/ <0.0001
Recipient prior cardiac surgery	-	40.0%[2]	50.5%	<0.0001
Recipient previous malignancy	3.9%[1]	6.1%	8.6%	<0.0001
Ischemic time (hours)	3.0 (1.4 - 4.8)	3.3 (1.6 - 5.1)	3.2 (1.5 - 5.0)	<0.0001

(Cont'd)

Continuous factors are expressed as median (5th – 95th percentiles)

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[1] Based on 4/1994-2003 transplants.
[2] Based on 7/2004-2008 transplants.

Manejo de la IC avanzada en la mujer: TX C

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Clinical Characteristics by Gender (Unadjusted)

Variable	Males (N=190)	Females (N=76)	P Value
Age (mean+SD, years)	56+11	48+14	**<0.0001**
Family History of CAD	63/133 (47%)	20/56 (36%)	0.15
Hypertension	105/164 (64%)	30/63 (48%)	**0.034**
Dyslipidemia	105/157 (67%)	32/67 (48%)	**0.011**
History of Smoking	86/163 (53%)	22/68 (32%)	**0.006**
Atrial Arrhythmia	88/161 (55%)	29/62 (47%)	0.30
Atrial Fibrillation	74/161 (46%)	22/62 (35%)	0.18
Ventricular Arrhythmia	76/163 (47%)	22/66 (33%)	0.077
ICD or LVAD	90/190 (47%)	25/76 (33%)	**0.040**

Clinical and Gender Differences in Heart Transplant Recipients in the New Heart Study JHLT 2015,

Manejo de la IC avanzada en la mujer: TX C

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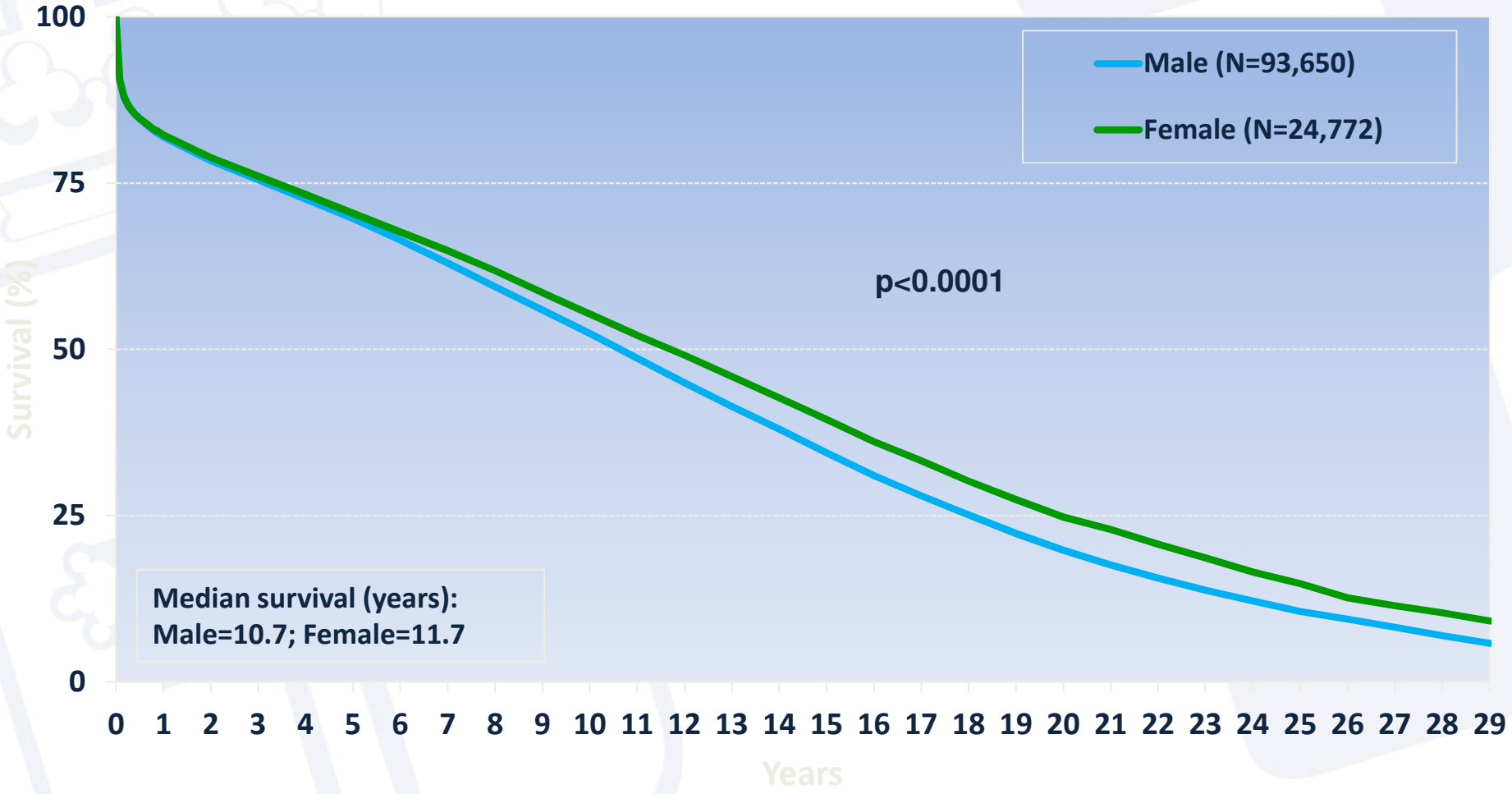
(Transplants: January 1982 – June 2016)



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Gender differences and outcomes in left ventricular assist device support: The European Registry for Patients with Mechanical Circulatory Support

Registro multicéntrico de 966 pacientes del EUROMACS

- ✓ Edad media 55 años
- ✓ 151 mujeres
- ✓ Seguimiento medio de 1,26 años

EUROMACS

JHLT 2018;37:61-70

Gender differences and outcomes in left ventricular assist device support: The European Registry for Patients with Mechanical Circulatory Support

Table 1 Selected General Characteristics of the Study Sample

Variable	Men (n = 815)	Women (n = 151)	*p*-value
Age, years	56 (46.2, 62)	53 (40.3, 62)	0.088
Body surface area, m^2	2.0 (1.9, 2.1)	1.7 (1.6, 1.9)	<0.001[a]
Diabetes, *n* (%)	200 (25.2)	38 (25.7)	0.92
Ever smoker, *n* (%)	294 (69.2)	25 (34.7)	<0.001[a]
Chronic obstructive pulmonary disease, *n* (%)	88 (11.1)	10 (6.8)	0.14
Symptomatic peripheral vascular disease, *n* (%)	61 (7.7)	5 (3.4)	0.077
Carotid artery disease, *n* (%)	22 (3.2)	3 (2.2)	0.78
Positive history of neurologic event, *n* (%)	89 (11.6)	16 (10.7)	0.89
Dialysis, *n* (%)	20 (2.5)	5 (3.3)	0.58
Ultrafiltration, *n* (%)	49 (6.1)	6 (4)	0.44
Intubation, *n* (%)	118 (14.7)	26 (17.3)	0.39
Currently on intravenous inotropes, *n* (%)	501 (65.9)	105 (71.4)	0.21
Intra-aortic balloon pump, *n* (%)	97 (12.1)	27 (18)	0.063
Extracorporeal membrane oxygenation, *n* (%)	75 (9.4)	19 (12.7)	0.23
Primary diagnosed cardiomyopathy, *n* (%)			<0.001[a]
Congenital	12 (1.6)	2 (1.4)	1.0
Ischemic	369 (47.8)	39 (26.7)	<0.001[a]
Dilated	367 (47.5)	97 (66.4)	<0.001[a]
Restrictive	5 (0.6)	4 (2.7)	0.040[a]
Valvular	19 (2.5)	4 (2.7)	0.78
INTERMACS patient profiles, *n* (%)			0.30
1 and 2: unstable	334 (41.6)	77 (51.7)	0.025[a]
1: critical cardiogenic shock	90 (11.2)	24 (16.1)	0.099
2: progressive decline	244 (30.4)	53 (35.6)	0.21
3: stable but inotrope dependent	253 (31.5)	37 (24.8)	0.12
4: resting symptoms	177 (22.1)	32 (21.5)	0.91
5: exertion intolerant	28 (3.5)	3 (2)	0.46
6: exertion limited	7 (0.9)	0 (0)	0.60
7: advanced NYHA class III	3 (0.4)	0 (0)	1.0

JHLT 2018;37:61-70

Gender differences and outcomes in left ventricular assist device support: The European Registry for Patients with Mechanical Circulatory Support

Table 2 Selected Hemodynamic Parameters

	Men (n = 815)	Women (n = 151)	p-value
Heart rate, beats/min	86 (74, 99)	88 (74.2, 102.8)	0.20
Systolic blood pressure, mm Hg	100 (90, 110)	96 (86, 107.3)	0.11
Mitral regurgitation, n (%)			0.0075[a]
None/trivial	51 (7.4)/60 (8.7)	15 (12.0)/6 (4.8)	0.11/0.16
Mild	233 (33.7)	26 (20.8)	0.0046[a]
Moderate	225 (32.6)	49 (39.2)	0.15
Severe	122 (17.7)	29 (23.2)	0.17
Tricuspid regurgitation, n (%)			<0.001[a]
None/trivial	58 (8.5)/97 (14.2)	17 (13.4)/10 (7.9)	0.095/0.063
Mild	267 (39.1)	28 (22)	<0.001[a]
Moderate	175 (25.7)	41 (32.3)	0.13
Severe	85 (12.5)	31 (24.4)	<0.001[a]
Aortic regurgitation, n (%)			0.020[a]
None/trivial	345 (56.7)/123 (20.2)	77 (71.3)/15 (13.9)	0.0042[a]/0.15
Mild	96 (15.8)	15 (13.9)	0.77
Moderate	38 (6.2)	1 (0.9)	0.020[a]
Severe	7 (1.1)	0 (0)	0.6
Left ventricular ejection fraction, n (%)	20 (15, 24)	20 (15, 25)	0.15
Right ventricular function, n (%)			0.49
Normal/mild	128 (19.3)/151 (22.8)	29 (25.0)/26 (22.4)	0.17/1.0
Moderate/severe	267 (40.3)/117 (17.6)	45 (38.8)/16 (13.8)	0.84/0.35
Pulmonary artery systolic pressure, mm Hg	50 (39, 64)	48 (36, 57)	0.017[a]
Cardiac index, liter/min/m^2	1.4 (0, 2.1)	1.3 (0, 2.0)	0.40

JHLT 2018;37:61-70

Manejo de la IC avanzada en la mujer: Asistencia V

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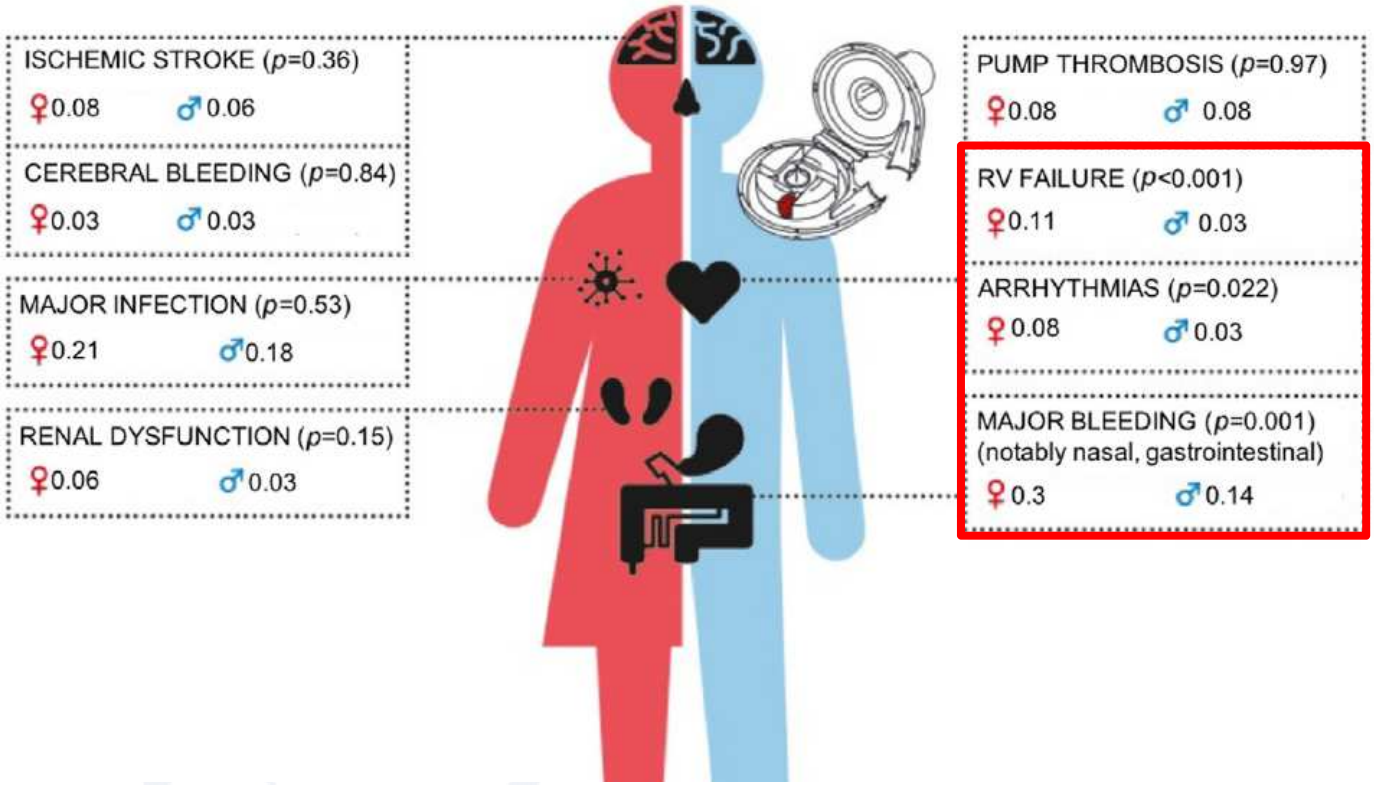
Gender differences and outcomes in left ventricular assist device support: The European Registry for Patients with Mechanical Circulatory Support

Eventos /pacientes-año



JHLT 2018;37:61-70

Manejo de la IC avanzada en la mujer: Asistencia V

HOSPITAL UNIVERSITARIO CENTRAL de ASTURIAS

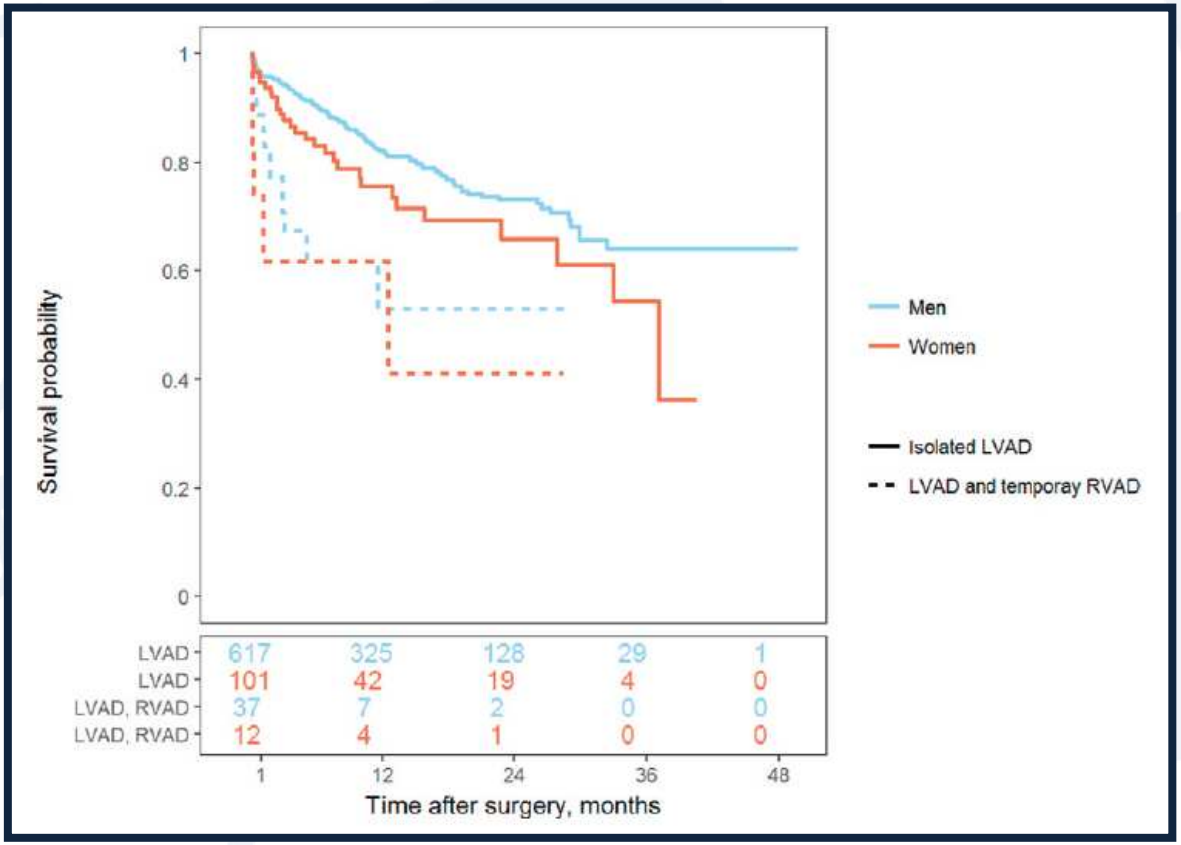
Gender differences and outcomes in left ventricular assist device support: The European Registry for Patients with Mechanical Circulatory Support

Exitus

♂ 247/815
♀ 62/151

SV (1 año)

♂ **83,2** %
♀ **75,5** %



JHLT 2018;37:61-70

Gender differences and outcomes in left ventricular assist device support: The European Registry for Patients with Mechanical Circulatory Support

Table 4 Cox Regression Analyses for Selected Hemodynamic Parameters and Mortality With Interaction by Gender

Model	Gender	Hazard ratio (95% CI)	*p*-value	*N* events/ *N* individuals	*p*-value interaction
(1) Currently on intravenous inotropes					0.61
	Men	10.90 (7.59, 15.66)	<0.001	161/617	
	Women	13.19 (6.91, 25.19)	<0.001	39/108	
(2) Percutaneous mechanical circulatory support (IABP or ECMO)					0.034[a]
	Men	1.31 (0.93, 1.86)	0.13	204/723	
	Women	2.70 (1.54, 4.73)	<0.001	56/135	
(3) INTERMACS profile unstable condition					0.52
	Men	1.88 (1.42, 2.49)	<0.001	205/727	
	Women	2.29 (1.31, 4.01)	0.0036	54/134	
(4) Preoperatively highly reduced RV function[b]					0.5
	Men	2.69 (1.64, 4.44)	<0.001	176/613	
	Women	6.84 (2.14, 21.84)	0.0012	43/107	

JHLT 2018;37:61-70

Manejo de la IC avanzada en la mujer, en resumen...

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✓ **La mayoría** de los pacientes con IC avanzada que reciben un trasplante cardiaco o una AV largo plazo **son varones**.

✓ Hay pocos estudios que comparen las características de los receptores de trasplante cardiaco en función del género. Las **mujeres son más jóvenes**.

✓ La **SV del TXC** es ligeramente **superior en la mujer**.

✓ Las mujeres a las que se les implanta un DAVI tienen unas **condiciones preoperatorias más desfavorables** que los varones.

✓ Las probabilidad de eventos adversos en las mujeres es mayor, fundamentalmente por arritmias, fallo de VD y sangrado y **la SV a corto y largo plazo es menor**.

DUDAS

Menor proporción de mujeres que reciben un trasplante:

- ✓ Presentación a edades avanzadas?
- ✓ Menor mortalidad de la IC?
- ✓ Infradiagnóstico de la IC en la mujer?
- ✓ Rechazo de la mujer a recibir un trasplante?

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Muchas gracias por su atención

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