La repercusión de la fibrilación auricular

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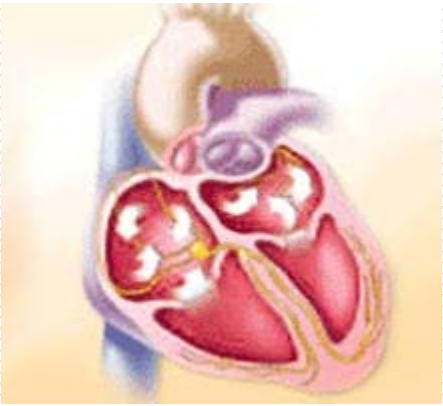
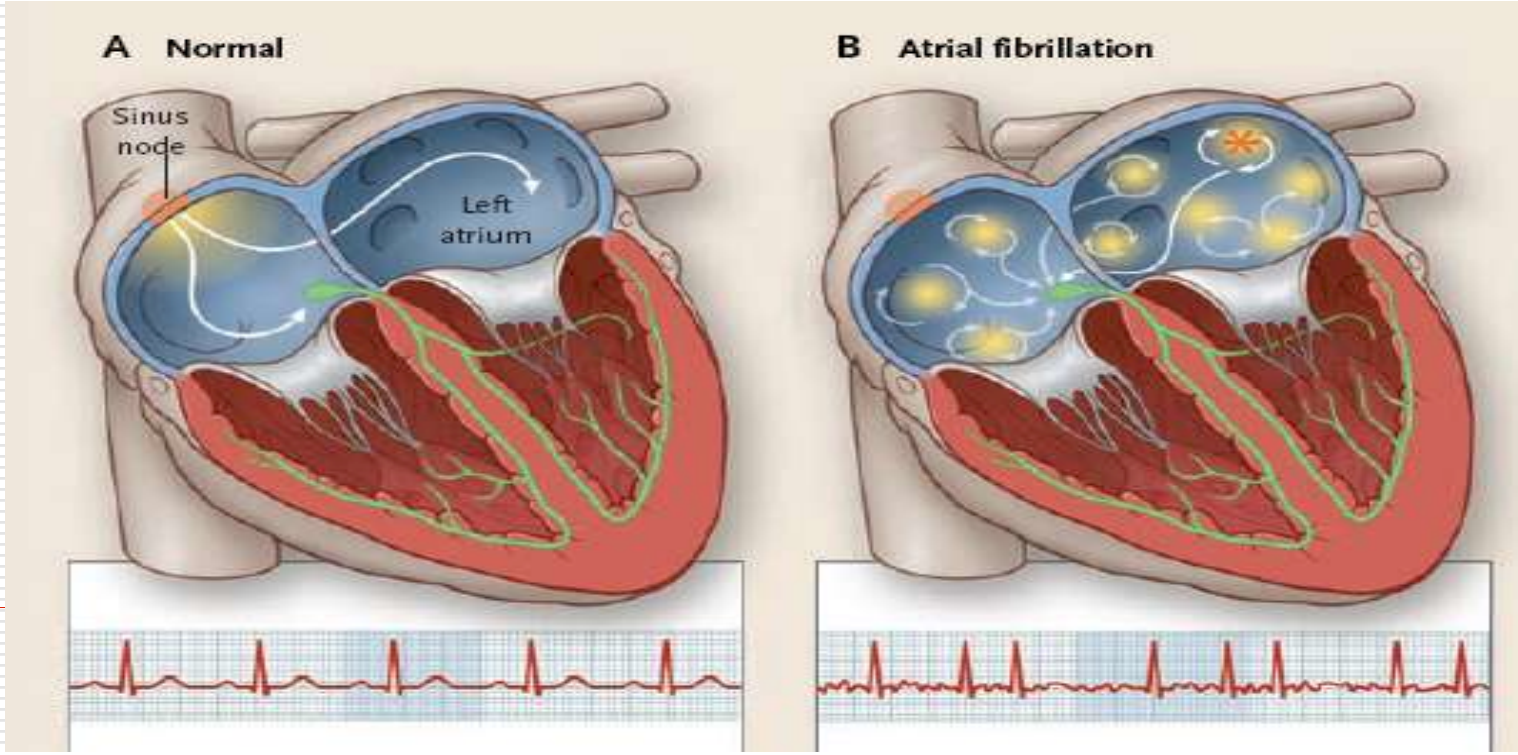


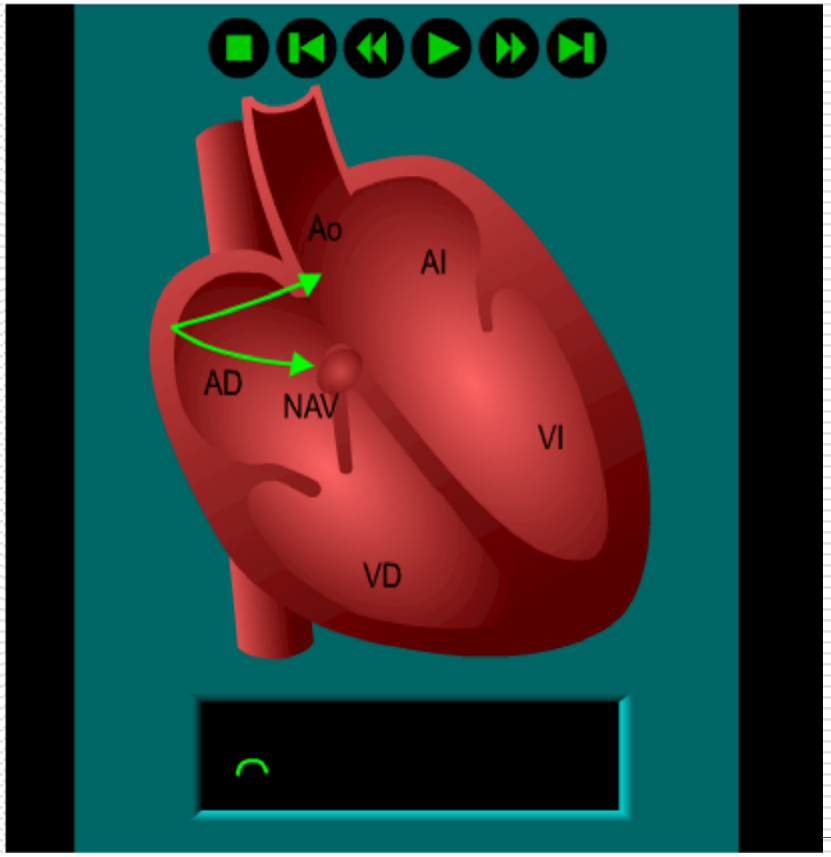
Definición

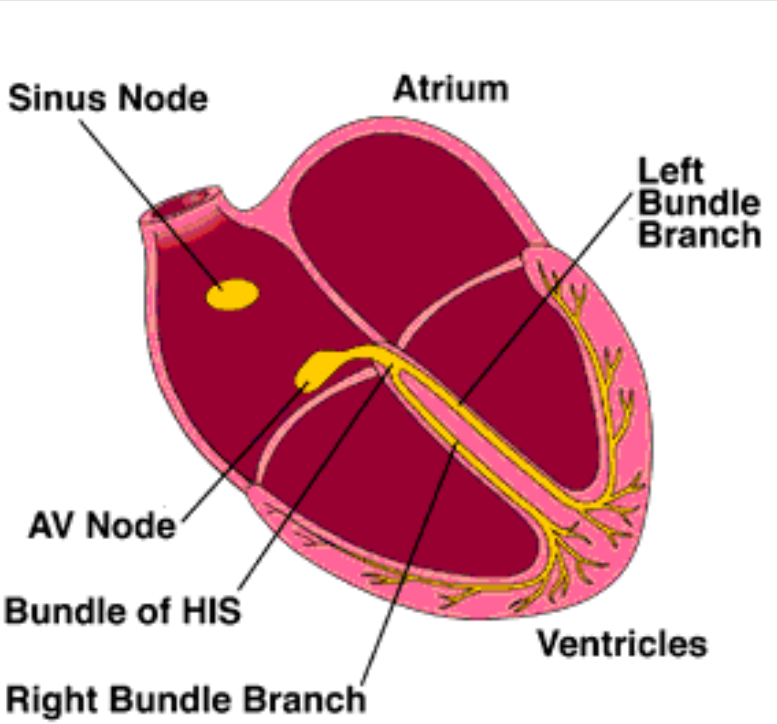
La fibrilación auricular (FA) es una arritmia auricular caracterizada por la activación auricular incoordinada con pérdida de la función de marcapasos por parte del nodo sinusal, con el consiguiente deterioro de la función mecánica auricular.



Definición

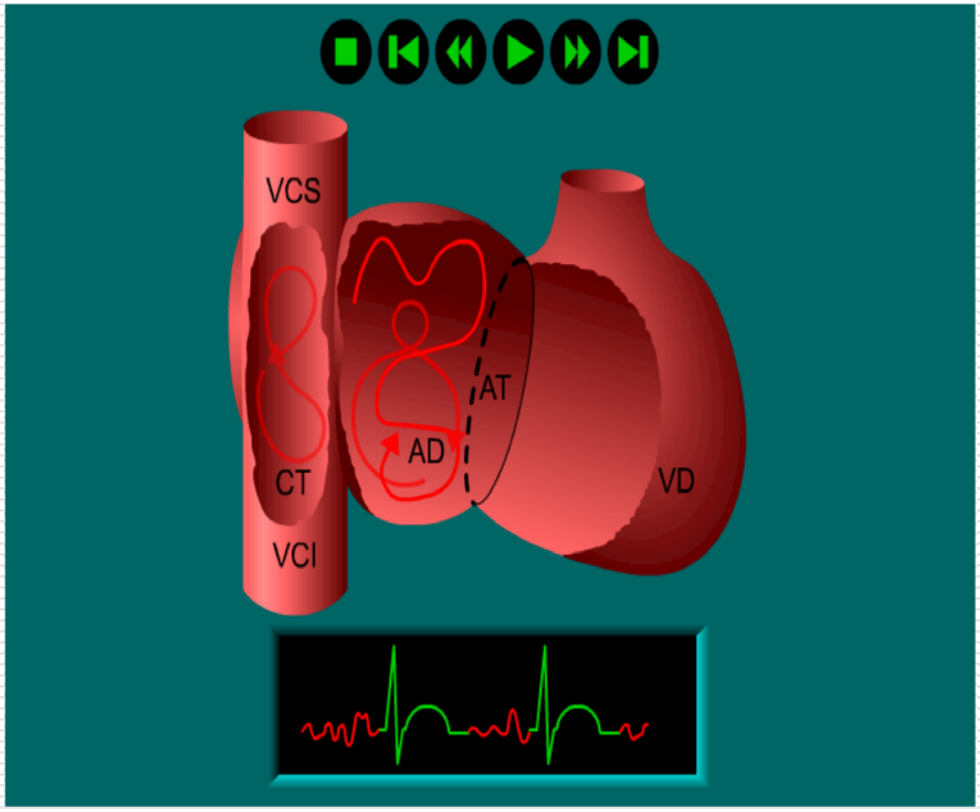
Ritmo normal cardiaco=RITMO SINUSAL

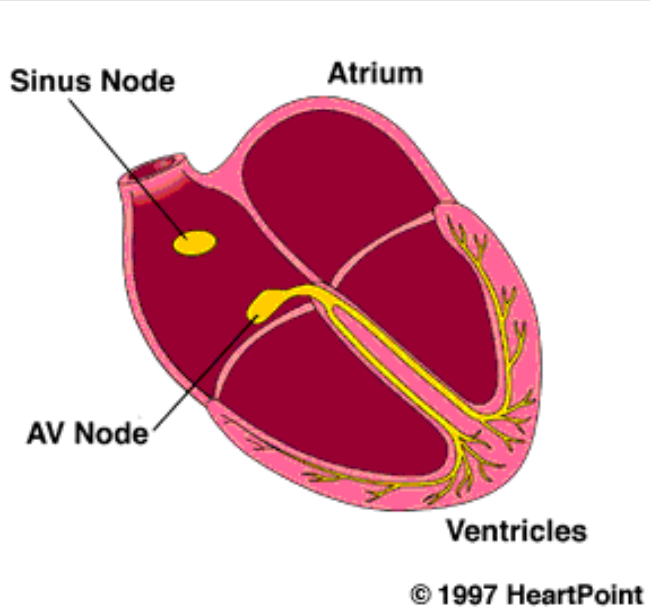




Definición

FIBRILACIÓN AURICULAR= ARRITMIA





Definición

El registro ECG se caracteriza por:

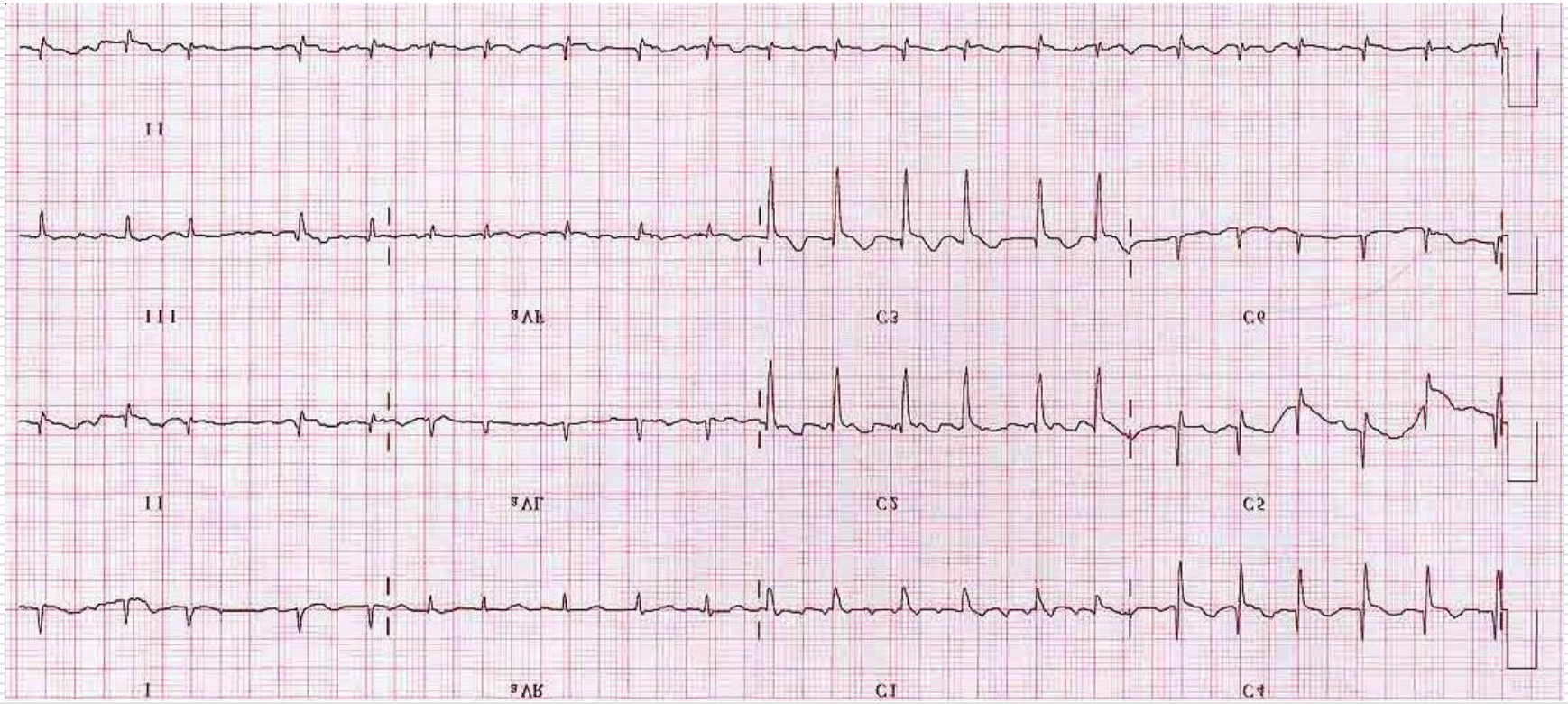
1-Desaparición de ondas P y la sustitución de estas por oscilaciones rápidas e irregulares que modifican la línea de base.

2-Actividad ventricular irregular cuya frecuencia es variable, aunque suele ser rápida en ausencia de tratamiento.

3-Complejos QRS estrechos, si no existe bloqueo de rama.

4-Intervalos RR irregulares

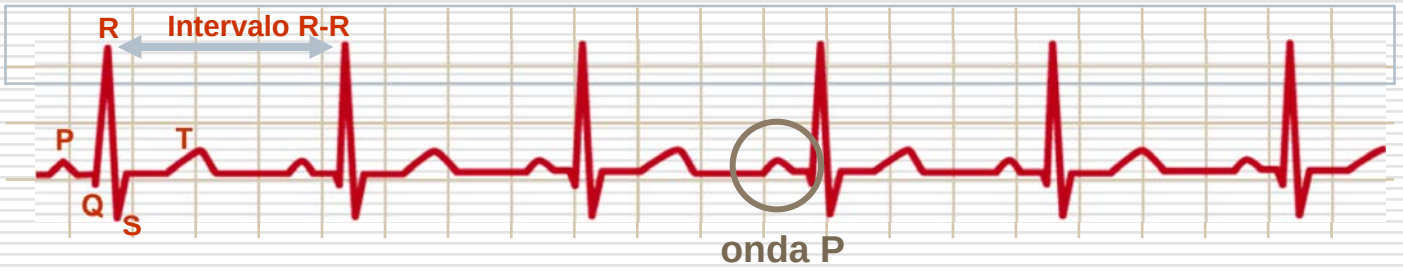
Fibrilación auricular : ECG



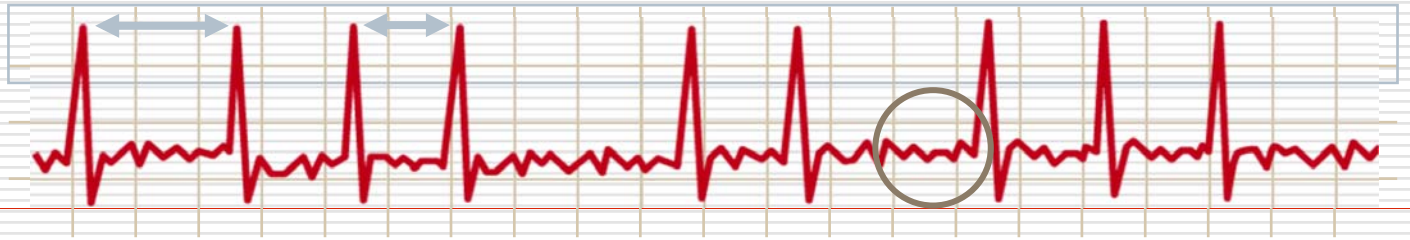
ECG: La señal evidente de la FA es la ausencia de ondas P en el ECG

- En el ECG las ondas P son reemplazadas por oscilaciones rápidas u ondas fibrilatorias que varían en amplitud, forma y momento de aparición.
- Hay una respuesta ventricular irregular que es rápida cuando la conducción no se ha alterado.

Ritmo sinusal

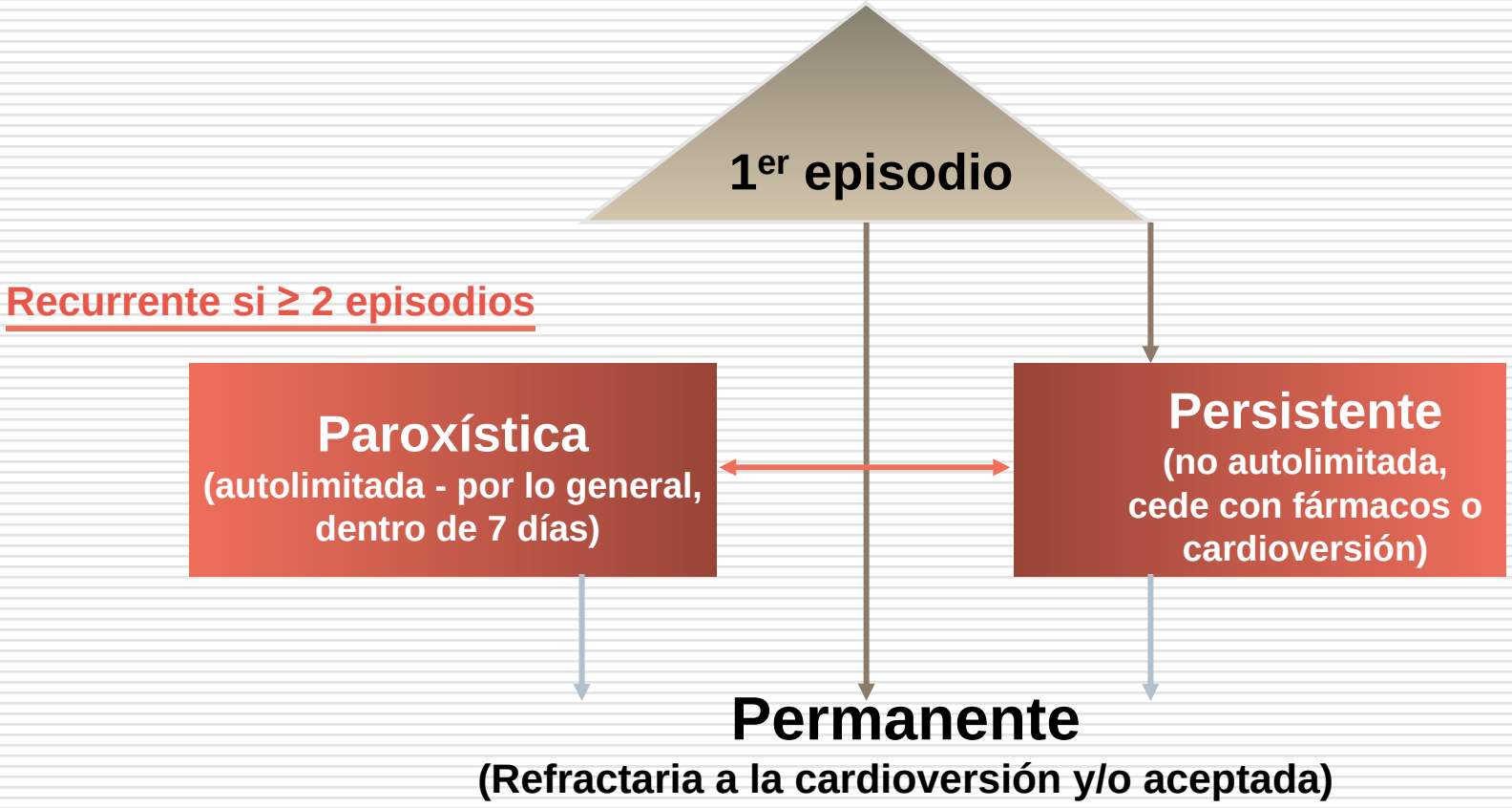


Fibrilación auricular



ACC/AHA/ESC 2006 guidelines J Am Coll Cardiol 2006;48:854-906

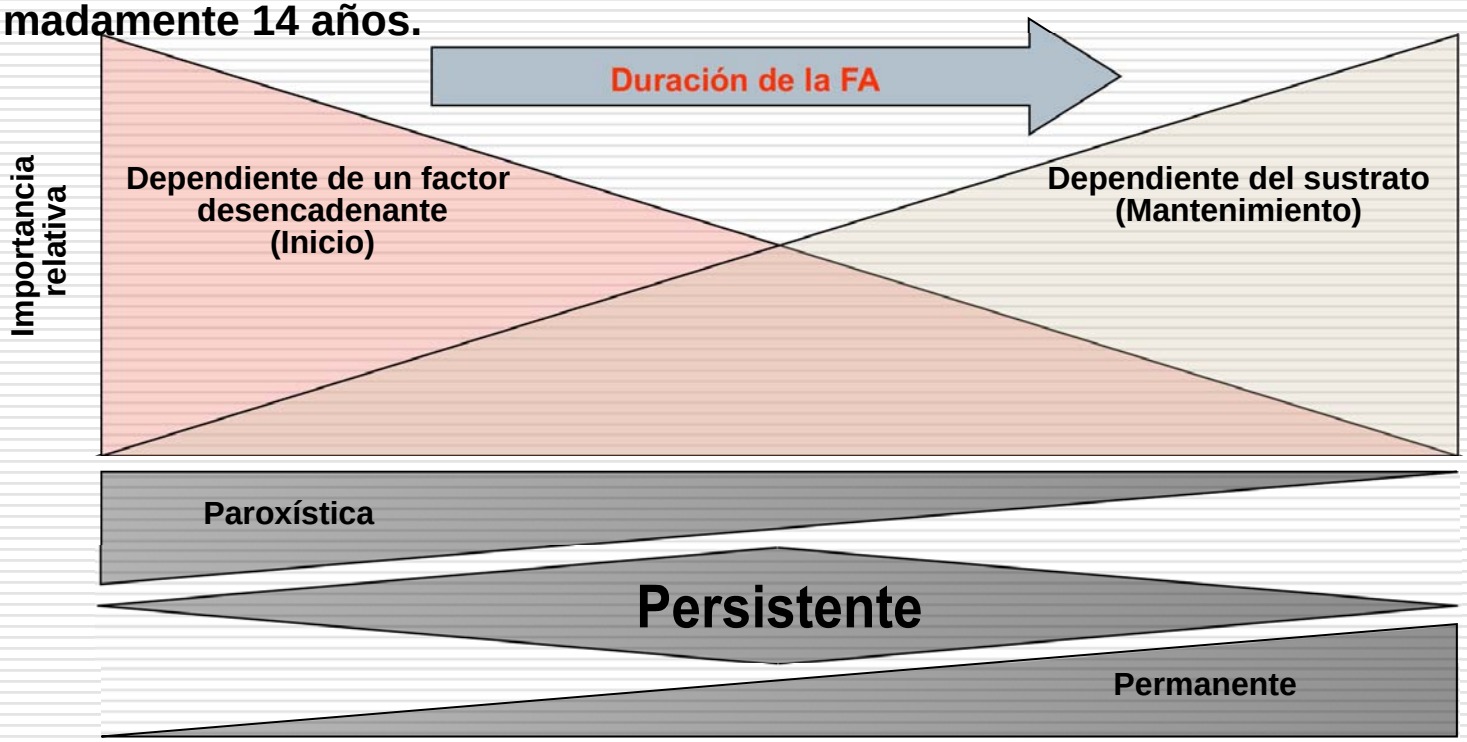
La FA se clasifica en función de la duración del episodio y de la capacidad de recuperar el ritmo sinusal



ACC/AHA/ESC 2006 guidelines *J Am Coll Cardiol* 2006;48:854-906

La fibrilación auricular es una enfermedad progresiva

En el 20% de los pacientes con FA recurrente se vuelve permanente después de 4 años, y en el 77% de los pacientes con FA paroxística esta es permanente después de aproximadamente 14 años.



Khan IA. Int J Card. 2003;87:301-2; Kato et al. Circ J 2004;68:568-72

FIBRILACIÓN AURICULAR
FISIOPATOLOGIA

MECANISMOS

Macroentrada

Microentrada

EFECTOS HEMODINÁMICOS

Pérdida del sincronismo atrioventricular.

Incremento de la presión media auricular

Acortamiento de la diástole

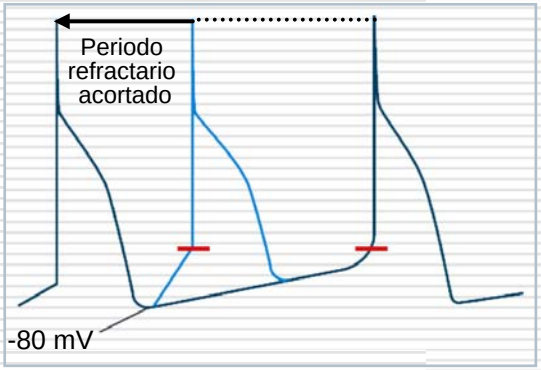
Decrecimiento del flujo coronario

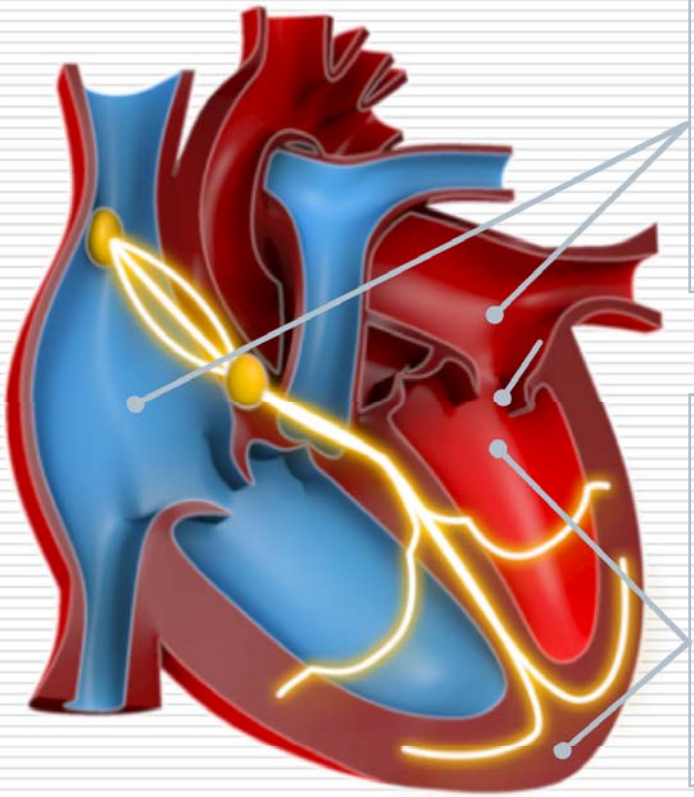
Miocardiopatía por taquicardia

Remodelación cardíaca

Con el tiempo, la FA causa remodelado auricular

- **Remodelado eléctrico**
  - Acortamiento de los periodos refractarios auriculares
  - Se produce rápidamente (en varios días) y contribuye a la mayor estabilidad de la FA





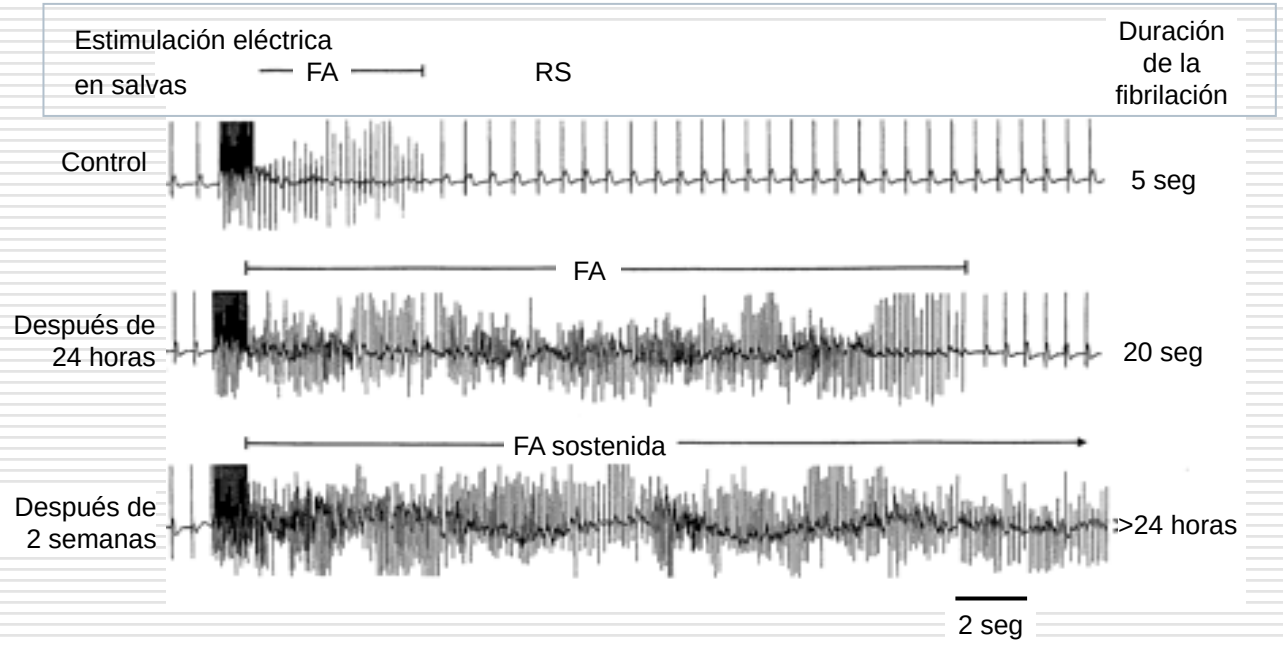
- **Remodelado contráctil**
  - Contractilidad auricular reducida
  - Ectasia sanguínea y formación de trombos
  - Puede llevar a una dilatación auricular que altera aún más sus propiedades electrofisiológicas
  - Se produce rápidamente

- **Remodelado estructural**
  - Cambios histológicos
  - Agrandamiento de la aurícula izquierda y de la orejuela auricular izquierda
  - Disminución del gasto cardiaco
  - Ocurre después de un periodo de semanas a meses

Van Gelder *et al. Europace* 2006;8:943-949

El remodelado auricular estimula aún más la FA

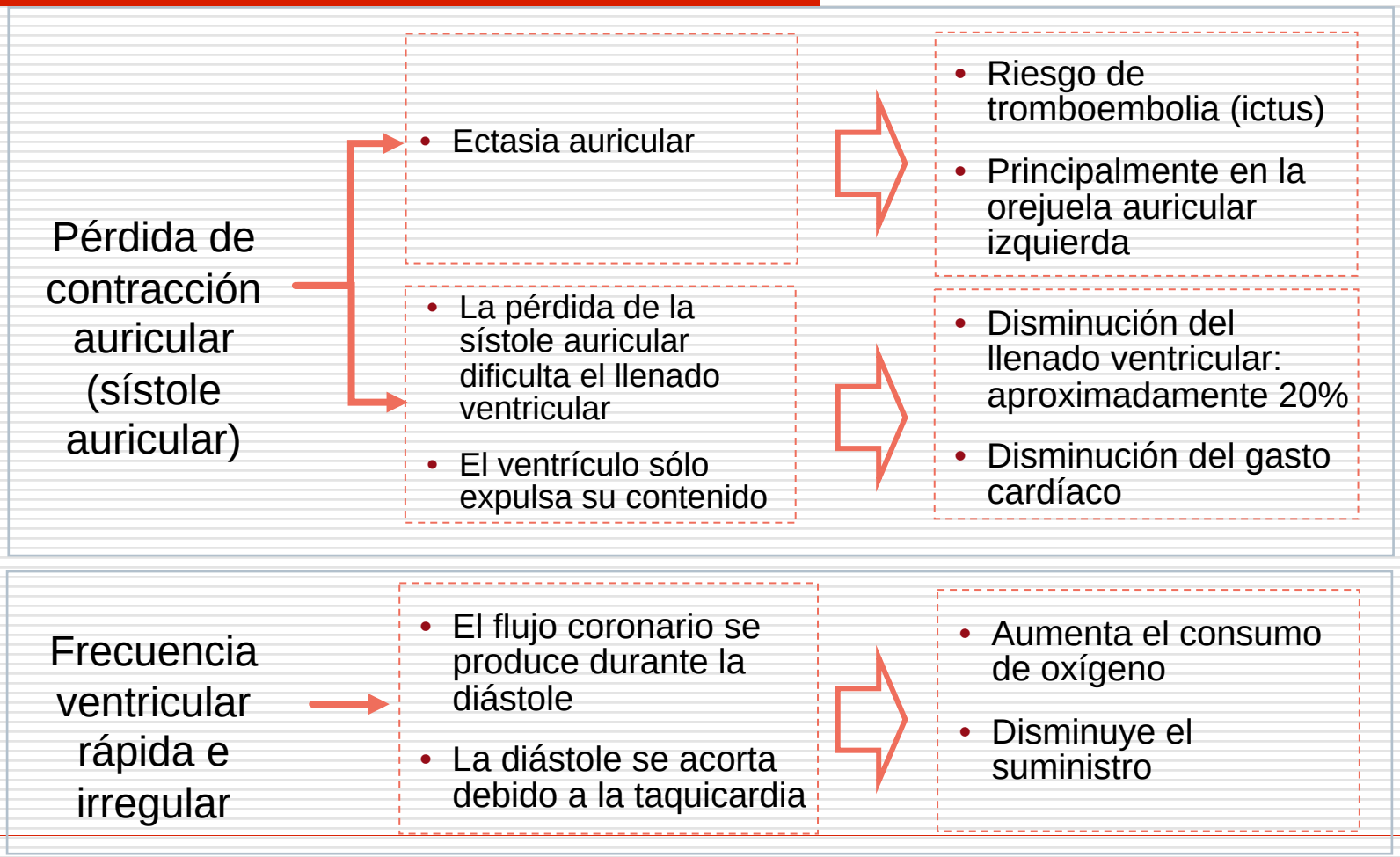
- La FA produce cambios electrofisiológicos que estimulan aún más la FA[1]
- Esos cambios son la causa y la consecuencia del remodelado auricular eléctrico, contráctil y estructural, y se producen en cuestión de días[2]



Estudio en animales de experimentación

1. Wijffels MCEF, *et al. Circulation*. 1995;92:1954-1968.
2. Schotten U, *et al. Circulation*. 2003;107:1433-1439.

El gasto cardíaco disminuye y el riesgo de tromboembolia aumenta



ACC/AHA/ESC 2006 guidelines *J Am Coll Cardiol* 2006;48:854-906

La FA puede dar lugar a miocardiopatía inducida por taquicardia

- Una frecuencia ventricular permanentemente elevada en la FA puede aumentar de manera negativa la regurgitación mitral y provocar miocardiopatía inducida por taquicardia

- El corazón se agranda y tiene un ventrículo izquierdo delgado y debilitado, lo que da lugar a una reducción de su capacidad funcional

- Se desconocen todavía los mecanismos concretos, pero puede deberse a:
  - Depleción de energía miocárdica
  - Isquemia
  - Regulación alterada del calcio
  - Remodelado

ACC/AHA/ESC 2006 guidelines *J Am Coll Cardiol* 2006;48:854-906

Causas de la fibrilación auricular

- ***Enfermedad cardiaca o valvular***
  - **Cardiopatía isquémica**
  - **Enfermedad cardiaca reumática, estenosis mitral**
  - **Enfermedad del seno**
  - **Síndrome de prexcitacion (WPW)**
  - **Insuficiencia cardiaca**
  - **Con menos frecuencia: cardiomiopatia, enfermedad pericárdica, defecto del tabique interauricular, mixoma auricular**
- ***Causas no cardíacas***
  - **HTA**
  - **Tirotoxicosis**
  - **Infecciones agudas (neumonía especialmente)**
  - **Depleción electrolítica**
  - **Cáncer de pulmón**
  - **Otros problemas intra torácicos**
  - **Embolismo pulmonar**

Causas de la fibrilación auricular

- ***Relacionados con la dieta y estilos de vida***
  - **Sobrecarga emocional o física**
  - **Consumo excesivo de cafeína**
  - **Consumo excesivo de alcohol**
  - **Consumo de cocaína**
  - **Obesidad**
- ***Tras cirugía*** **sobre todo cirugía cardiaca y toracotomía.**
- **Iatrogénica.**

Independent Contribution of Diabetes to Increased Prevalence and Incidence of Atrial Fibrillation

GREGORY A. NICHOLS, PHD[1]
KYNDARON REINIER, PHD[2]
SUMEET S. CHUGH, MD[2]

OBJECTIVE — Diabetes has long been recognized as a risk factor for atrial fibrillation, but its independent contribution to atrial fibrillation has not been fully evaluated. We sought to compare the prevalence and incidence of atrial fibrillation in age- and sex-matched patients with and without type 2 diabetes.

RESEARCH DESIGN AND METHODS — Using an observational cohort design, we selected 10,213 members of an HMO diabetes registry as of 1 January 1999 plus 7,159 patients who entered the registry by 31 December 2004 and matched them to patients without diabetes on year of birth and sex. All patients were followed until they died, left the health plan, or until 31 December 2008. We compared the baseline prevalence of atrial fibrillation and then followed patients without atrial fibrillation to compare atrial fibrillation incidence while controlling for known risk factors.

RESULTS — Atrial fibrillation prevalence was significantly greater among patients with diabetes (3.6 vs. 2.5%, $P < 0.0001$). Over a mean follow-up of 7.2 ± 2.8 years, diabetic patients without atrial fibrillation at baseline developed atrial fibrillation at an age- and sex-adjusted rate of 9.1 per 1,000 person-years (95% CI 8.6–9.7) compared with a rate of 6.6 (6.2–7.1) among nondiabetic patients. After full adjustment for other risk factors, diabetes was associated with a 26% increased risk of atrial fibrillation among women (hazard ratio 1.26 [95% CI 1.08–1.46]), but diabetes was not a statistically significant factor among men (1.09 [0.96–1.24]).

CONCLUSIONS — In this population, diabetes was an independent determinant of atrial fibrillation prevalence but predicted incidence only among women. These findings have potential public health implications and emphasize the need for further investigation of the mechanistic links between diabetes and atrial fibrillation.

Diabetes Care 32:1851–1856, 2009

ORIGINAL INVESTIGATION

Glucocorticoid Use and Risk of Atrial Fibrillation or Flutter

A Population-Based, Case-Control Study

Christian Fynbo Christiansen, MD; Steffen Christensen, MD; Frank Mehnert, MSc; Steven R. Cummings, MD; Roland D. Chapurlat, MD, PhD; Henrik Toft Sørensen, MD, PhD, DMSc

Background: Glucocorticoid use is associated with increased risk of myocardial infarction, stroke, and heart failure, but data are limited on the risk of atrial fibrillation or flutter. We examined whether glucocorticoid use is associated with the risk of atrial fibrillation or flutter.

Methods: For this population-based, case-control study, we identified all patients with a first hospital diagnosis of atrial fibrillation or flutter from January 1, 1999, through December 31, 2005, in Northern Denmark (population, 1.7 million). For each case we selected 10 population controls matched by age and sex. We obtained data on glucocorticoid prescriptions within 60 days (current users) or longer before the index date (former users), comorbidity, and medications from medical databases. We used conditional logistic regression to compute odds ratios (ORs), controlling for potential confounders.

Results: Among 20 221 patients with atrial fibrillation or flutter, 1288 (6.4%) were current glucocorticoid users and 2375 (11.7%) were former users. Among 202 130 population controls, 5245 (2.6%) were current glucocorticoid users and 19 940 (9.9%) were former users. Current glucocorticoid use was associated with an increased risk of atrial fibrillation or flutter compared with never use (adjusted OR, 1.92; 95% confidence interval [CI], 1.79-2.06). Among new glucocorticoid users, the adjusted OR was 3.62 (95% CI, 3.11-4.22) and among long-term users it was 1.66 (95% CI, 1.53-1.80). The increased risk remained robust in patients with and without pulmonary and cardiovascular diseases. Former glucocorticoid use was not associated with increased risk (adjusted OR, 1.00; 95% CI, 0.96-1.06).

Conclusion: Current glucocorticoid use was associated with an almost 2-fold increased risk of atrial fibrillation or flutter.

Arch Intern Med. 2009;169(18):1677-1683

European Heart Journal (2009) **30**, 2327–2336
doi:10.1093/eurheartj/ehp357

FASTTRACK
ESC CLINICAL TRIAL UPDATE

Effects of rosuvastatin on atrial fibrillation occurrence: ancillary results of the GISSI-HF trial

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See page 2302 for the commentary on this article (doi:10.1093/eurheartj/ehp362)

Aims This ancillary analysis of the GISSI-HF database aims at assessing the effect of rosuvastatin on the occurrence of atrial fibrillation (AF) in patients with chronic heart failure (HF) who were not in AF at study entry.

Methods and results GISSI-HF was a double-blind, placebo-controlled trial testing n-3 PUFA and rosuvastatin vs. corresponding placebos in patients with chronic HF. Atrial fibrillation occurrence was defined as the presence of AF in the electrocardiogram (ECG) performed at each visit during the trial or AF as a cause of worsening HF or hospital admission or as an event during hospitalization. Among the 3690 patients (80.7%) without AF on their baseline ECG, 15.0% developed AF during a median follow-up period of 3.7 years, 258 randomized to rosuvastatin (13.9%) vs. 294 allocated to placebo (16.0%). Although the difference was not significant at unadjusted analysis ($P = 0.097$) and multivariable analysis adjusting for clinical variables ($P = 0.067$), it became significant after adjustment for clinical variables and laboratory examinations ($P = 0.039$), and for clinical variables, laboratory examinations, and background therapies ($P = 0.038$).

Conclusion This study shows that there is some evidence of a beneficial effect of rosuvastatin in terms of reduction of AF occurrence in patients with HF. Larger populations are needed to provide a definite answer to the question.
ClinicalTrials.gov Identifier: NCT00336336

Statins for prevention of atrial fibrillation after cardiac surgery: A systematic literature review

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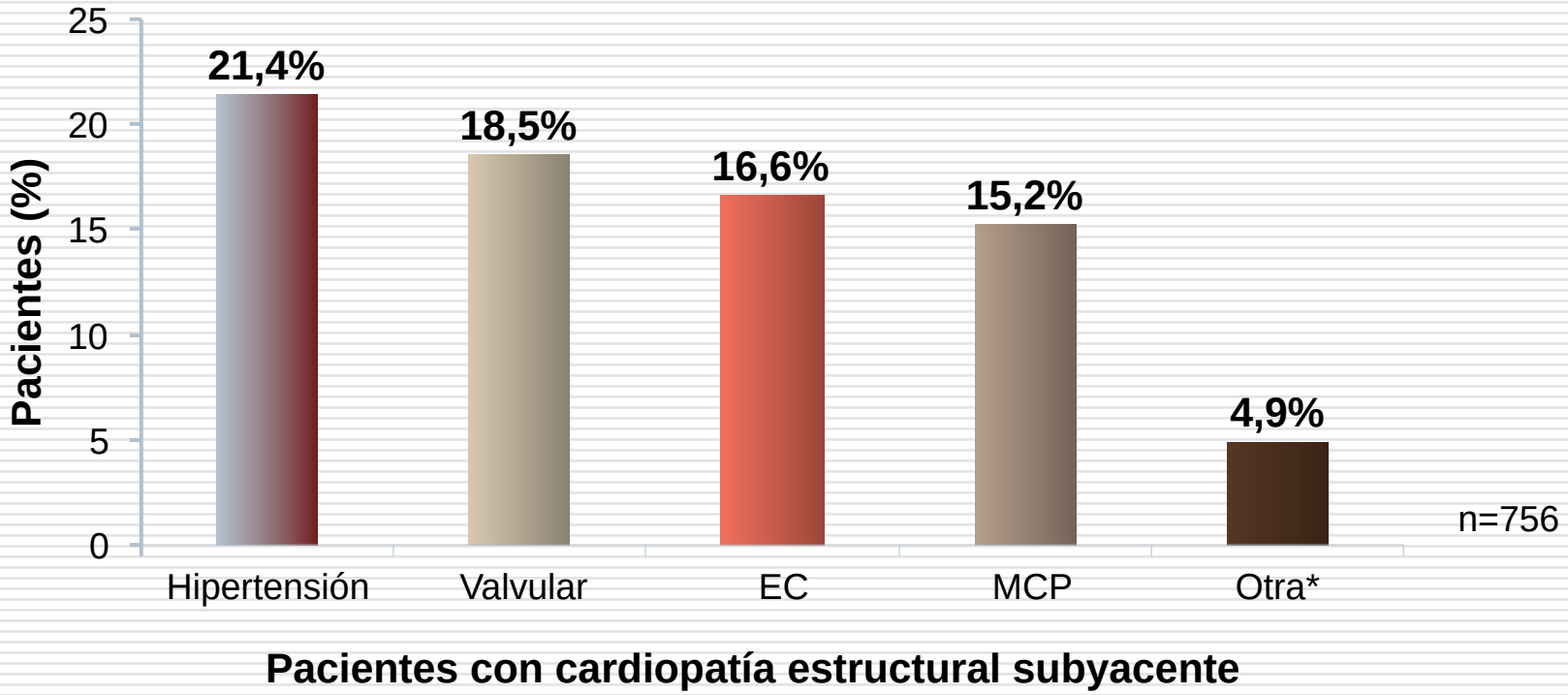
Objective: To determine the strength of evidence of preoperative statin therapy for prevention of atrial fibrillation after cardiac surgery.

Methods: A meta-analysis was performed of randomized controlled trials and observational trials reporting the impact of preoperative statin therapy on the incidence of any type and new-onset atrial fibrillation after cardiac surgery. Unadjusted and adjusted treatment effects (odds ratio, 95% confidence intervals) were pooled using a random-effects model, and publication bias was assessed.

Results: Thirteen studies were identified (3 randomized controlled trials, 10 observational trials) that reported the incidence of postoperative atrial fibrillation in 17,643 patients having cardiac surgery with (n = 10,304; 58%) or without (n = 7339; 42%) preoperative statin use. New-onset atrial fibrillation was reported in a total of 7855 patients. Postoperative incidence rates for any or new-onset atrial fibrillation were 24.6% and 29.9%, respectively. Preoperative statin use resulted in a 22% and 34% unadjusted odds reduction for any atrial fibrillation (odds ratio, 0.78; 95% confidence interval, 0.67–0.90) or new-onset atrial fibrillation (odds ratio, 0.66; 95% confidence interval, 0.51–0.84) after surgery ($P < .001$). Relevant publication bias and an unequal distribution of confounding variables favoring patients treated with statins were identified. Nevertheless, the beneficial actions of statins on atrial fibrillation persisted after pooled analysis of risk-adjusted treatment effects from randomized controlled trials and observational trials (any atrial fibrillation—odds ratio, 0.64; 95% confidence interval, 0.48–0.87; new-onset atrial fibrillation—odds ratio, 0.66; 95% confidence intervals, 0.48–0.89; $P < .01$).

Conclusion: Our meta-analysis provides evidence that preoperative statin therapy is associated with a reduction in the incidence of atrial fibrillation after cardiac surgery.

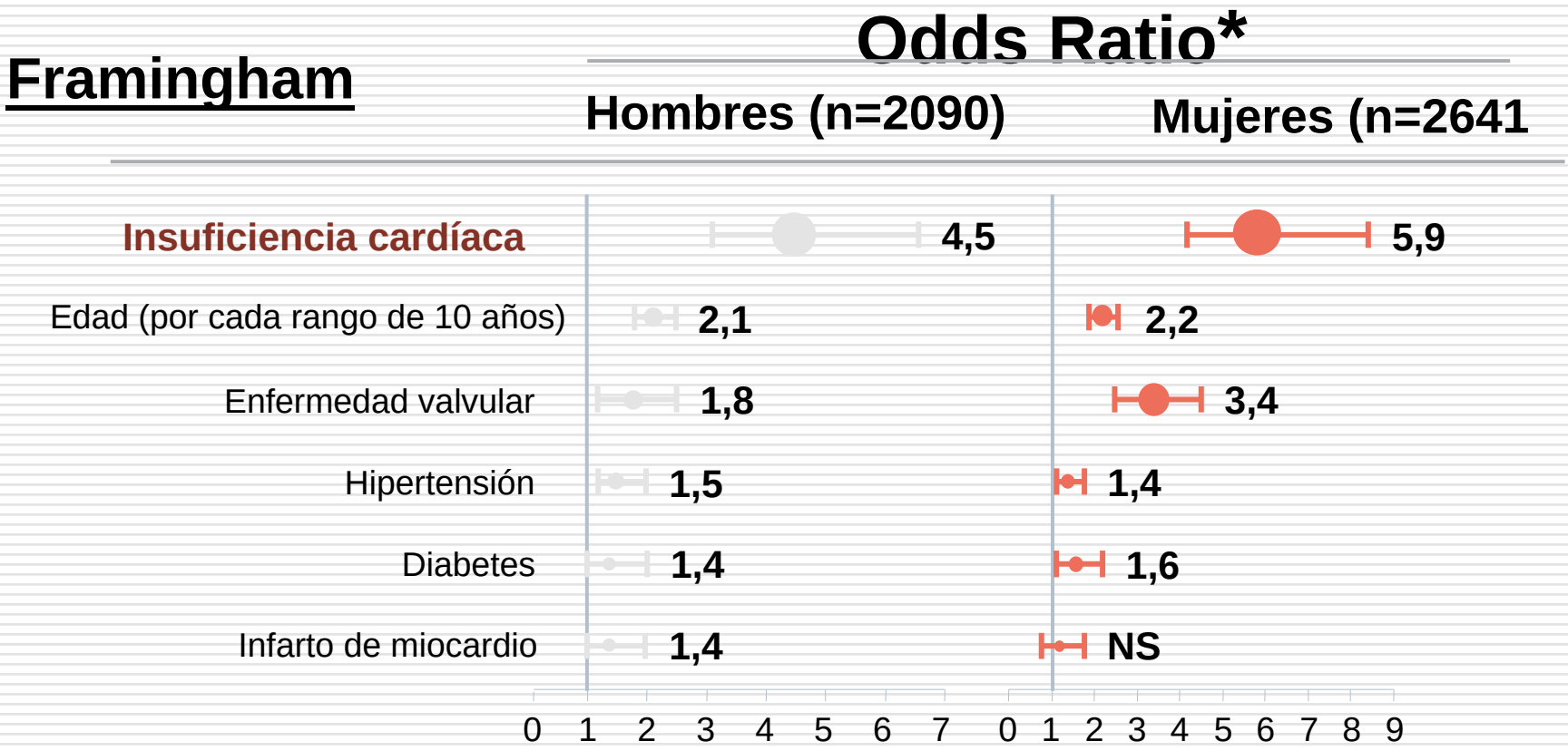
En el estudio ALFA, más del 70% de los pacientes con FA tenían factores de riesgo CV o una cardiopatía subyacente



EC = Enfermedad coronaria; MCP = Miocardiopatía.
*Otra incluye disfunción del nódulo sinusal y diagnósticos de cardiopatía estructural clasificados como miscelánea.

Lévy S, *et al. Circulation*. 1999;99:3028-35.

La insuficiencia cardíaca es un importante factor de riesgo independiente para la FA



*Análisis de regresión logística de datos de 2 años combinados.

Benjamin EJ, *et al. JAMA*. 1994;271:840-4.

La insuficiencia cardíaca es un importante factor de riesgo independiente para la FA

Table 1. Characteristics of Patients with Heart Failure and Preserved or Reduced Ejection Fraction.*

Characteristic	Reduced Ejection Fraction (N=2429)	Preserved Ejection Fraction (N=2167)	P Value	Adjusted P Value†
Age (yr)	71.7±12.1	74.4±14.4	<0.001	NA
Male sex (% of patients)	65.4	44.3	<0.001	<0.001
Body-mass index‡	28.6±7.0	29.7±7.8	0.002	0.17
Obesity (% of patients)‡§	35.5	41.4	0.007	0.002
Serum creatinine on admission (mg/dl)	1.6±1.0	1.6±1.1	0.31	0.30
Hemoglobin on admission (g/dl)	12.5±2.0	11.8±2.1	<0.001	<0.001
Hypertension (% of patients)	48.0	62.7	<0.001	<0.001
Coronary artery disease (% of patients)	63.7	52.9	<0.001	<0.001
Atrial fibrillation (% of patients)	28.5	41.3	<0.001	<0.001
Diabetes (% of patients)	34.3	33.1	0.42	0.61
Substantial valve disease (% of patients)	6.5	2.6	<0.001	0.05
Ejection fraction (%)	29±10	61±7	<0.001	NA

* Continuous variables are expressed as means ±SD. To convert values for creatinine to micromoles per liter, multiply by 88.4.
† The P values are adjusted for age. NA denotes not applicable.
‡ Data on height and weight were not consistently accessible by electronic means over the course of the study; during the three consecutive five-year periods of the study, the data were available for 9 percent, 31 percent, and 83 percent of the study population, respectively. The body-mass index is the weight in kilograms divided by the square of the height in meters.
§ Obesity was defined by a body-mass index of 30 or more.

Owan TE, et al. N Engl J Med. 2006; 355:251-9.

Development of a risk score for atrial fibrillation (Framingham Heart Study): a community-based cohort study

Renate B Schnabel, Lisa M Sullivan, Daniel Levy, Michael J Pencina, Joseph M Massaro, Ralph B D'Agostino Sr, Christopher Newton-Cheh, Jennifer F Yamamoto, Jared W Magnani, Thomas M Tadros, William B Kannel, Thomas J Wang, Patrick T Ellinor, Philip A Wolf, Ramachandran S Vasan, Emelia J Benjamin

Background Atrial fibrillation contributes to substantial increases in morbidity and mortality. We aimed to develop a risk score to predict individuals' absolute risk of developing the condition, and to provide a framework for researchers to assess new risk markers.

Methods We assessed 4764 participants in the Framingham Heart Study from 8044 examinations (55% women, 45–95 years of age) undertaken between June, 1968, and September, 1987. Thereafter, participants were monitored for the first event of atrial fibrillation for a maximum of 10 years. Multivariable Cox regression identified clinical risk factors associated with development of atrial fibrillation in 10 years. Secondary analyses incorporated routine echocardiographic measurements (5152 participants, 7156 examinations) to reclassify the risk of atrial fibrillation and to assess whether these measurements improved risk prediction.

Findings 457 (10%) of the 4764 participants developed atrial fibrillation. Age, sex, body-mass index, systolic blood pressure, treatment for hypertension, PR interval, clinically significant cardiac murmur, and heart failure were associated with atrial fibrillation and incorporated in a risk score ($p<0\cdot05$, except body-mass index $p=0\cdot08$), clinical model C statistic 0·78 (95% CI 0·76–0·80). Risk of atrial fibrillation in 10 years varied with age: more than 15% risk was recorded in 53 (1%) participants younger than 65 years, compared with 783 (27%) older than 65 years. Additional incorporation of echocardiographic measurements to enhance the risk prediction model only slightly improved the C statistic from 0·78 (95% CI 0·75–0·80) to 0·79 (0·77–0·82), $p=0\cdot005$. Echocardiographic measurements did not improve risk reclassification ($p=0\cdot18$).

Interpretation From clinical factors readily accessible in primary care, our risk score could help to identify risk of atrial fibrillation for individuals in the community, assess technologies or markers for improvement of risk prediction, and target high-risk individuals for preventive measures.

Lancet 2009; 373: 739–45

Development of a risk score for atrial fibrillation (Framingham Heart Study): a community-based cohort study

	Score
Age (years)	
45–49	−3 (women); 1 (men)
50–54	−2 (women); 2 (men)
55–59	0 (women); 3 (men)
60–64	1 (women); 4 (men)
65–69	3 (women); 5 (men)
70–74	4 (women); 6 (men)
75–79	6 (women); 7 (men)
80–84	7 (women); 7 (men)
≥85	8 (women); 8 (men)
Body-mass index (kg/m²)	
<30	0
≥30	1
Systolic blood pressure (mm Hg)	
<160	0
≥160	1
Treatment for hypertension	
No	0
Yes	1
PR interval (ms)	
<160	0
160–199	1
≥200	2
Age at which significant cardiac murmur developed (years)	
45–54	5
55–64	4
65–74	2
75–84	1
≥85	0
Age of heart failure (years)	
45–54	10
55–64	6
65–74	2
≥75–84	0

Scores are approximations for results from continous risk functions; categories assigned a score of zero should not be misconstrued to imply the presence of biological threshold effects.

Table 3: **Risk scores for factors associated with 10-year risk of atrial fibrillation**

Risk score	≤0	1	2	3	4	5	6	7	8	9	≥10
Predicted risk	≤1%	2%	2%	3%	4%	6%	8%	12%	16%	22%	>30%

Table 4: Predicted 10-year risk of atrial fibrillation assigned to the risk score

Lancet 2009; 373: 739–45

Electrophysiology

Electrocardiographic predictors of atrial fibrillation

Marco V. Perez, MD,[a] Frederick E. Dewey, MD,[a] Rachel Marcus, MD,[a] Euan A. Ashley, MRCP, DPhil, MD,[a] Amin A. Al-Ahmad, MD,[a] Paul J. Wang, MD,[a] and Victor F. Froelicher, MD, FACC[a,b] *Stanford, CA*

Background Atrial fibrillation (AF) is the most prevalent arrhythmia in the United States and accounts for more than 750,000 strokes per year. Noninvasive predictors of AF may help identify patients at risk of developing AF. Our objective was to identify the electrocardiographic characteristics associated with onset of AF.

Methods This was a retrospective cohort analysis of 42,751 patients with electrocardiograms (ECGs) ordered by physician's discretion and analyzed using a computerized system. The population was followed for detection of AF on subsequent ECGs. Cox proportional hazard regression analysis was performed to test the association between these ECG characteristics and development of AF.

Results For a mean follow-up of 5.3 years, 1,050 (2.4%) patients were found to have AF on subsequent ECG recordings. Several ECG characteristics, such as P-wave dispersion (the difference between the widest and narrowest P waves), premature atrial contractions, and an abnormal P axis, were predictive of AF with hazard ratio of approximately 2 after correcting for age and sex. P-wave index, the SD of P-wave duration across all leads, was one of the strongest predictors of AF with a concordance index of 0.62 and a hazard ratio of 2.7 (95% CI 2.1-3.3) for a P-wave index >35. These were among the several independently predictive markers identified on multivariate analysis.

Conclusions Several ECG markers are independently predictive of future onset of AF. The P index, a measurement of disorganized atrial depolarization, is one of the strongest predictors of AF. The ECG contains valuable prognostic information that can identify patients at risk of AF. (Am Heart J 2009;158:622-8.)

N-Terminal Pro-B-Type Natriuretic Peptide Is a Major Predictor of the Development of Atrial Fibrillation

The Cardiovascular Health Study

Kristen K. Patton, MD; Patrick T. Ellinor, MD, PhD; Susan R. Heckbert, MD, PhD;
Robert H. Christenson, PhD; Christopher DeFilippi, MD;
John S. Gottdiener, MD; Richard A. Kronmal, PhD

Background—Atrial fibrillation (AF), the most common cardiac rhythm abnormality, is associated with significant morbidity, mortality, and healthcare expenditures. Elevated B-type natriuretic peptide levels have been associated with the risk of heart failure, AF, and mortality.

Methods and Results—The relation between N-terminal pro-B-type natriuretic peptide (NT-proBNP) and AF was studied in 5445 Cardiovascular Health Study participants with the use of relative risk regression for predicting prevalent AF and Cox proportional hazards for predicting incident AF. NT-proBNP levels were strongly associated with prevalent AF, with an unadjusted prevalence ratio of 128 for the highest quintile (95% confidence interval, 17.9 to 913.3; $P<0.001$) and adjusted prevalence ratio of 147 for the highest quintile (95% confidence interval, 20.4 to 1064.3; $P<0.001$) compared with the lowest. After a median follow-up of 10 years (maximum of 16 years), there were 1126 cases of incident AF (a rate of 2.2 per 100 person-years). NT-proBNP was highly predictive of incident AF, with an unadjusted hazard ratio of 5.2 (95% confidence interval, 4.3 to 6.4; $P<0.001$) for the development of AF for the highest quintile compared with the lowest; for the same contrast, NT-proBNP remained the strongest predictor of incident AF after adjustment for an extensive number of covariates, including age, sex, medication use, blood pressure, echocardiographic parameters, diabetes mellitus, and heart failure, with an adjusted hazard ratio of 4.0 (95% confidence interval, 3.2 to 5.0; $P<0.001$).

Conclusions—In a community-based population of older adults, NT-proBNP was a remarkable predictor of incident AF, independent of any other previously described risk factor. (***Circulation***. **2009;120:1768-1774.**)

American Heart

Causas de la fibrilación auricular

- **EN ALGUNAS OCASIONES ES IDIOPATICA**

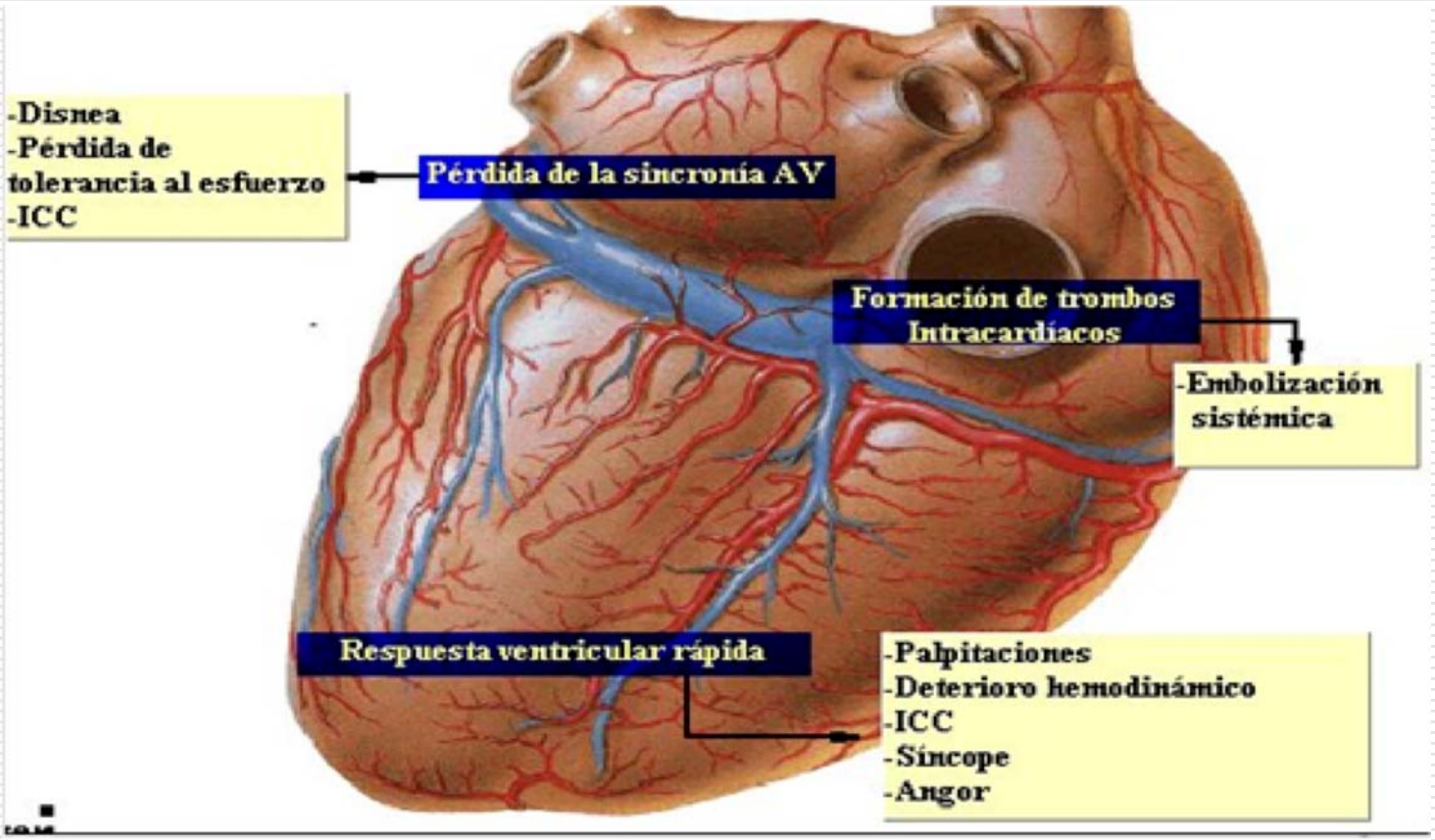
- **Así el 0.8 - 2.0% de los pacientes con fibrilación auricular (Framingham Study).**

  Brand FN. JAMA. 1985;254:3449-53.

- **Aumenta hasta el 10% en alguna serie.**

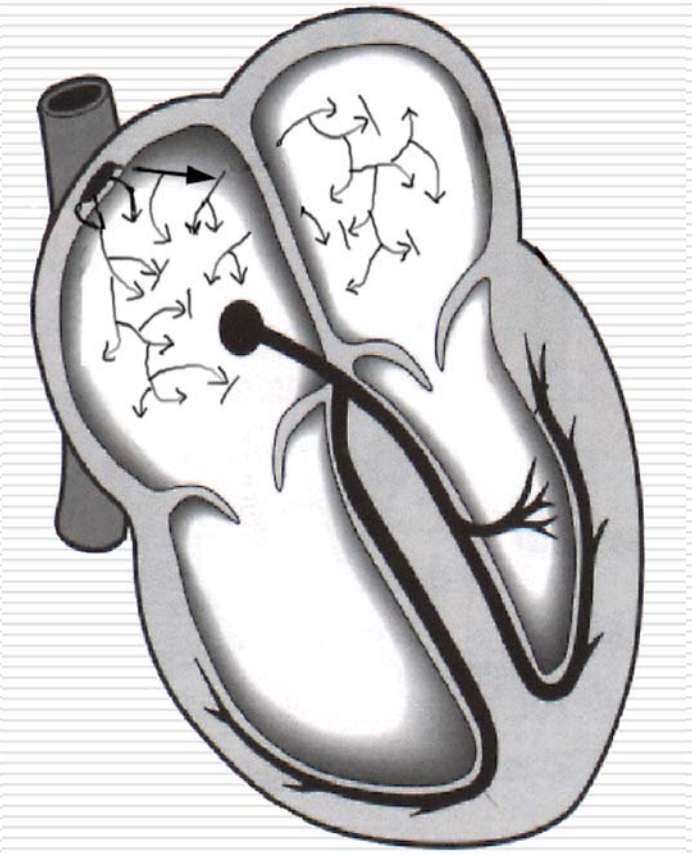
  Van Gelder IC. Am J Cardiol. 1991; 68:41-6.

Clínica de la fibrilación auricular



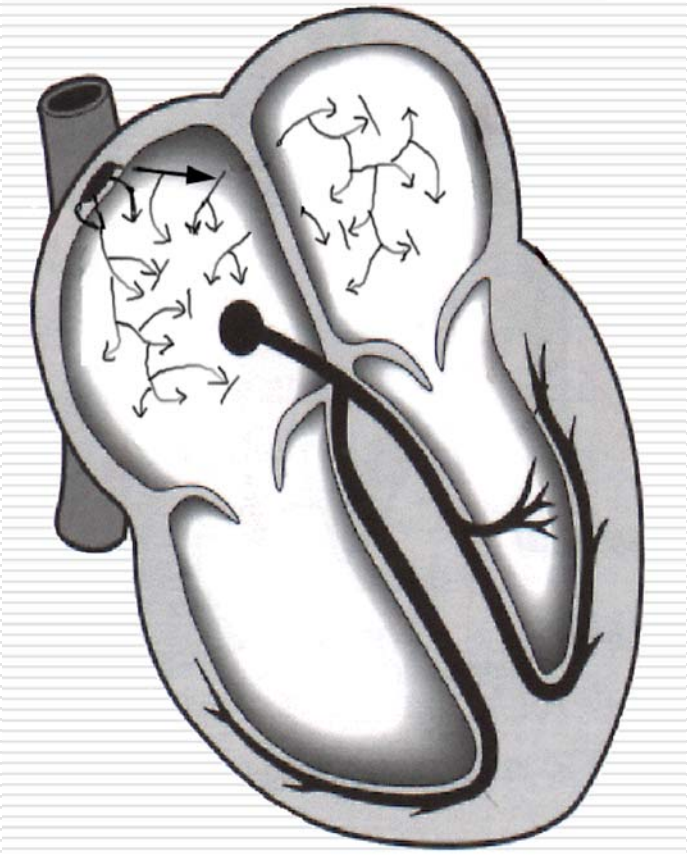
La repercusión de la fibrilación auricular

- Prevalencia
- Impacto en morbilidad
- Impacto en mortidad
- Impacto económico
- Impacto en el día a día en el paciente
- Impacto en el día a día del internista



La repercusión de la fibrilación auricular

- **Prevalencia**
- **Impacto en morbilidad**
- **Impacto en mortalidad**
- **Impacto económico**
- **Impacto en el día a día en el paciente**
- **Impacto en el día a día del internista**



Prevalencia: Epidemia

Es la arritmia más frecuente en la práctica clínica y tanto su incidencia como su prevalencia, están unidas a la edad.

EDITORIAL

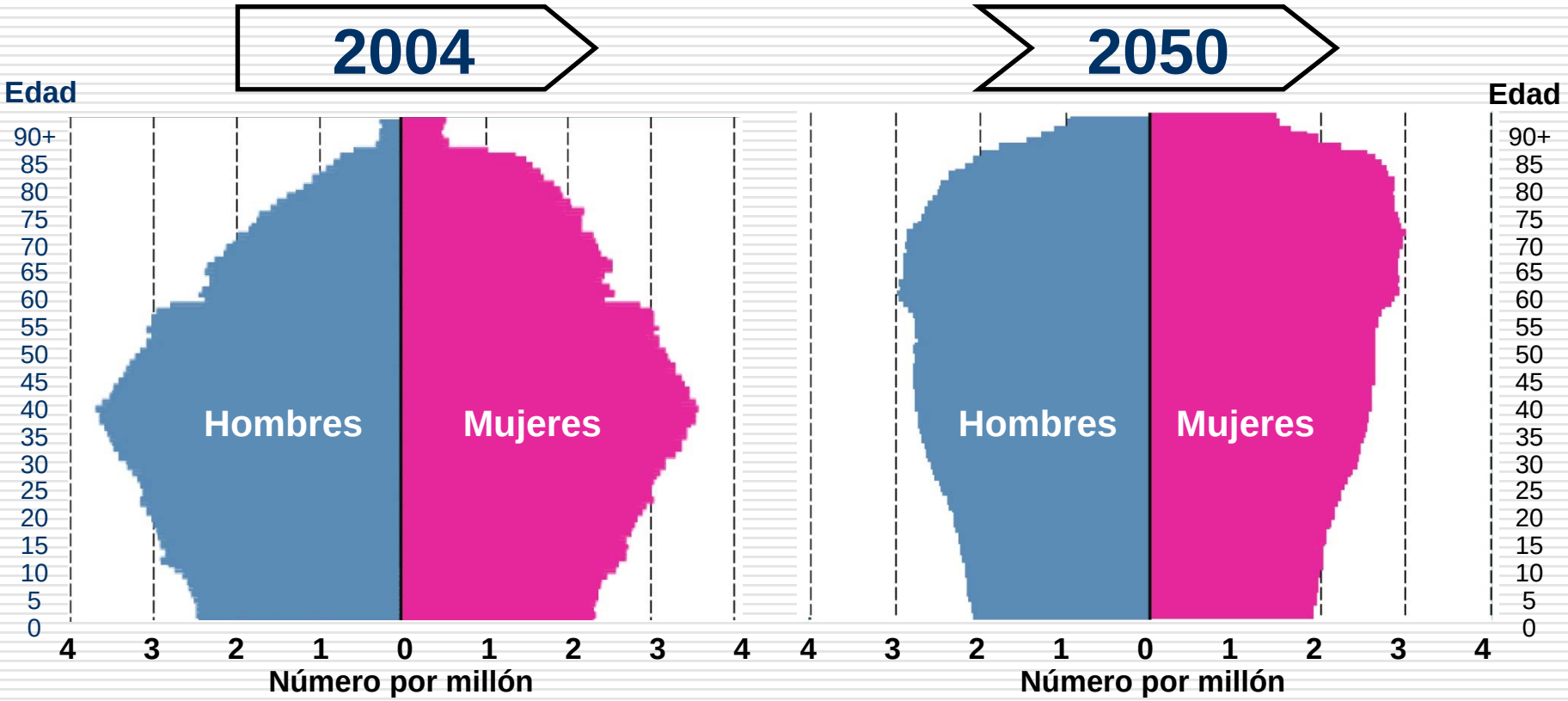
Rev Esp Cardiol. 2009;62(1):10-4

Fibrilación auricular: ¿estamos ante una epidemia?

Concepción Moro Serrano y Antonio Hernández-Madrid

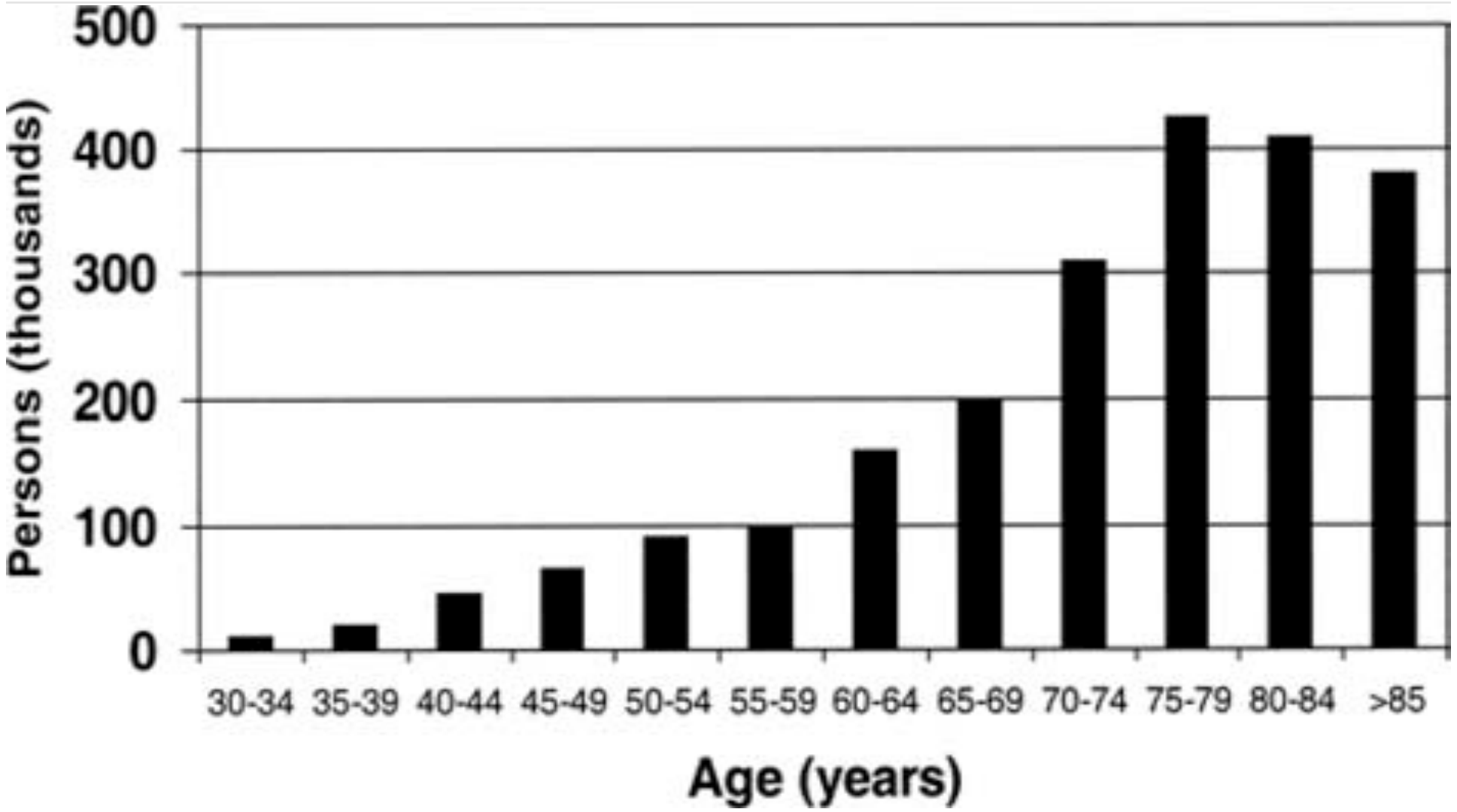
EPIDEMIOLOGIA

Pirámide de Edad en Europa



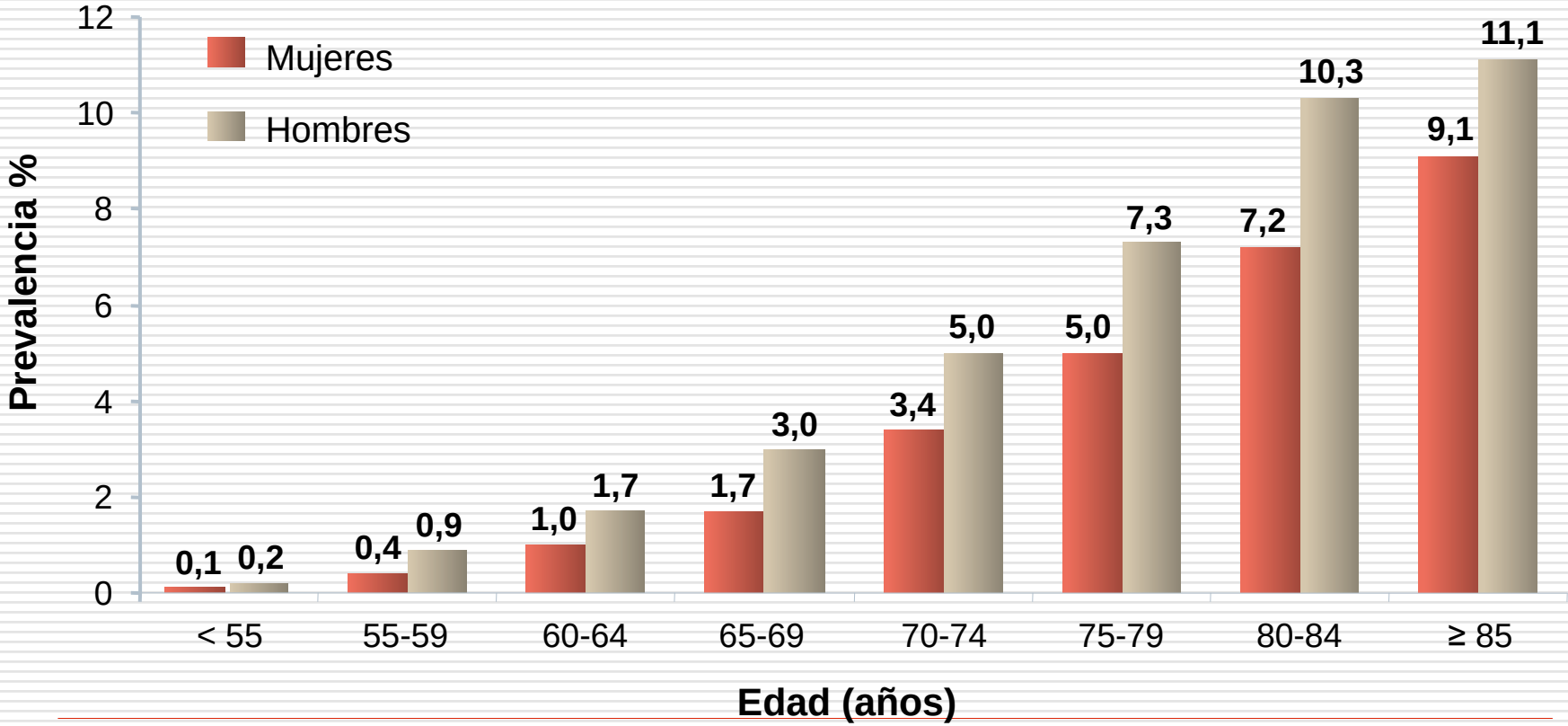
Euro Heart Survey 2006

La prevalencia de FA aumenta con la edad



Feinberg WM. Arch Int Med 1995; 155:469-73

La prevalencia de FA aumenta con la edad



Go AS. *et al. Atrai Study.JAMA* 2001; 285:2370-5.

La FA es la arritmia cardíaca más frecuente

- La FA afecta a un 0,95% de la población general.
  - 1 de cada 25 adultos de > 60 años[1]
  - 1 de cada 10 adultos de > 80 años[1]
- 6,8 millones de pacientes con FA en Europa y los EE.UU.[1,2]

1. Go AS, et al. JAMA. 2001; 285:2370-5
2. Fuster V, et al. J Am Coll Cardiol. 2001; 38:1231-5

Prevalencia de la fibrilación auricular

España: 4,8% en total, 11% en >80 años.

TABLA 1. **Prevalencia de la FA en los diferentes grupos de edad**

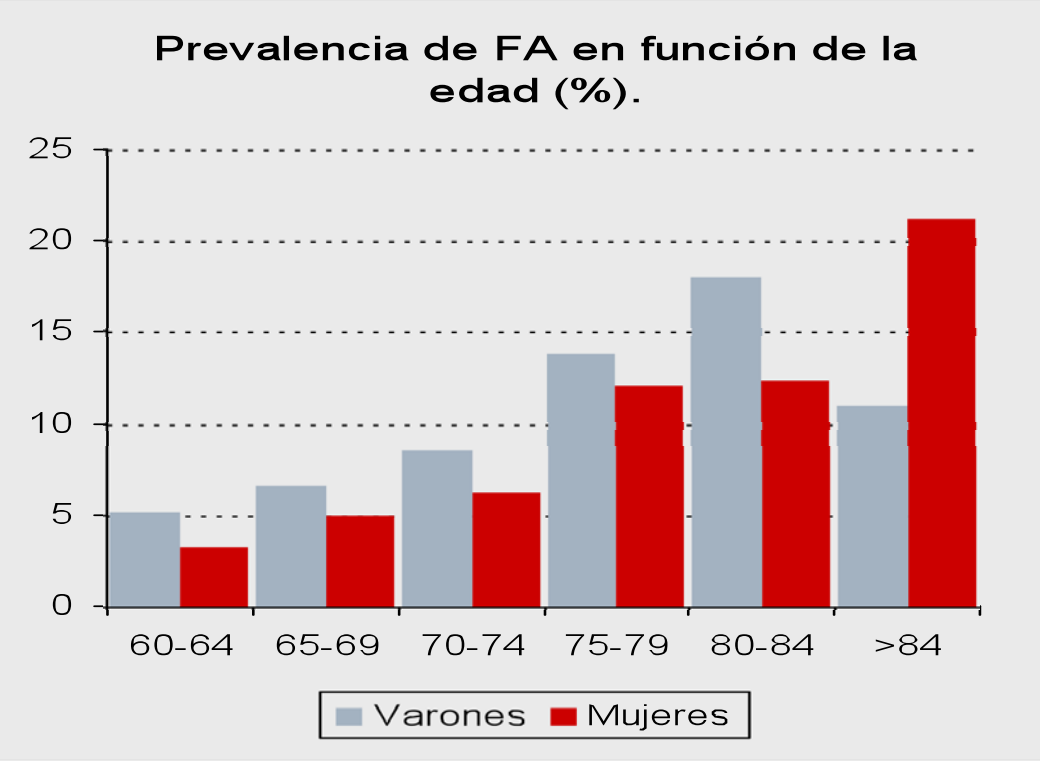
Edad (años)	Atención primaria	Atención especializada	Total
< 50	0,44% (46/10.778)	7,92% (70/883)	0,99% (116/11.661)
50-59	2,03% (84/4.145)	13,71% (109/795)	3,90% (193/4.940)
60-69	3,41% (198/5.804)	20% (250/1.280)	6,32% (448/7.084)
70-79	5,51% (274/4.974)	22,18% (256/1.104)	8,71% (530/6.078)
> 79	8,26% (160/1.935)	26,34% (93/353)	11,05% (253/2.288)
Sexo			
Mujer/Varón	2,94%/2,49%	18,75%/16,65%	5,53%/4,11%
Total	2,75% (762/27.636)	17,62% (778/4.415)	4,80% (1.540/32.051)

El denominador corresponde al número de pacientes vistos en cada grupo de edad en la consulta especializada y de atención primaria.

Garcia Acuña JM et al. La fibrilación auricular permanente en las enfermedades cardiovaculares en España. Estudio CARDIOTENS 1999. **Rev Esp Cardiol 2002; 55:943-52**

Prevalencia de la fibrilación auricular

España: 8,5% en >60 años, 16% en >80 años.

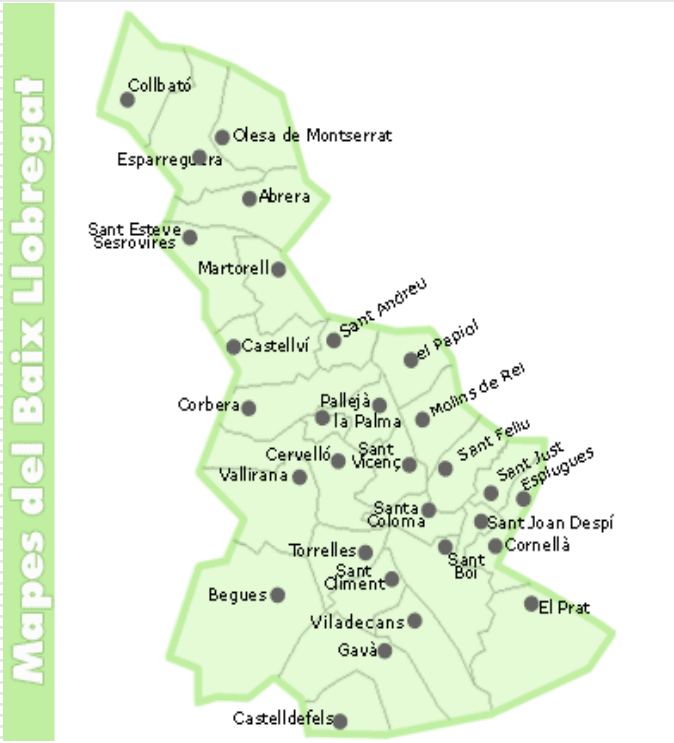


Cea-Calvo Let al. Prevalencia de fibrilación auricular en la población española de 60 o más años de edad. Estudio PREV-ICTUS. Rev Esp Cardiol 2007; 60: 616-24


Estudio NonaSantfeliu
SANT
FELIU
BELLVITGE
AEROPORT
RIU LLOBREGAT

Estudio NonaSantfeliu

Estudio descriptivo prospectivo longitudinal de una cohorte urbana de 186 personas mayores de 89 años.

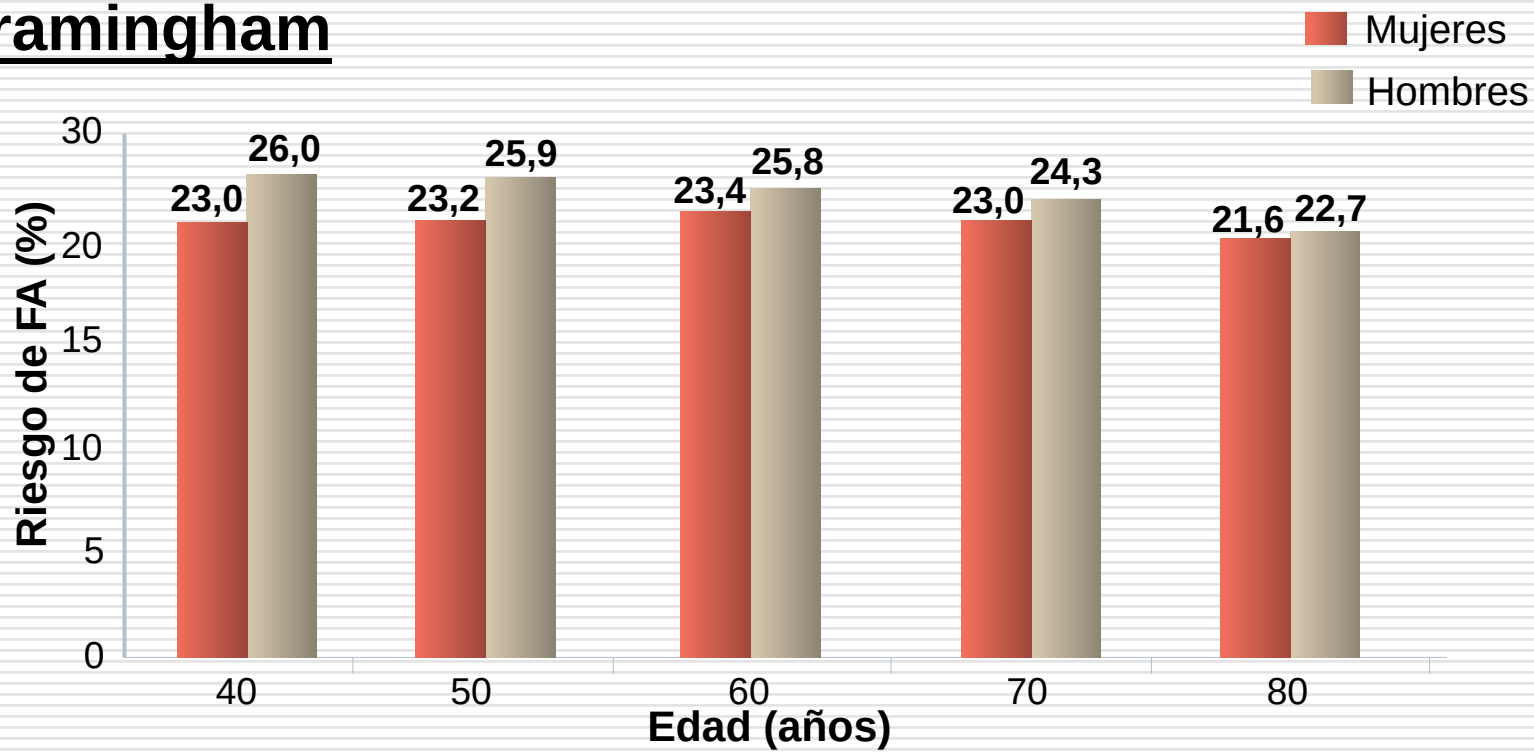


- **Existía el diagnóstico de fibrilación auricular permanente en el 16,6%.**

F.Formiga et al. Rev Clin Esp 2006; 206: 410-6.

Los riesgos de sufrir FA son 1 entre 4 para hombres y mujeres > 40 años

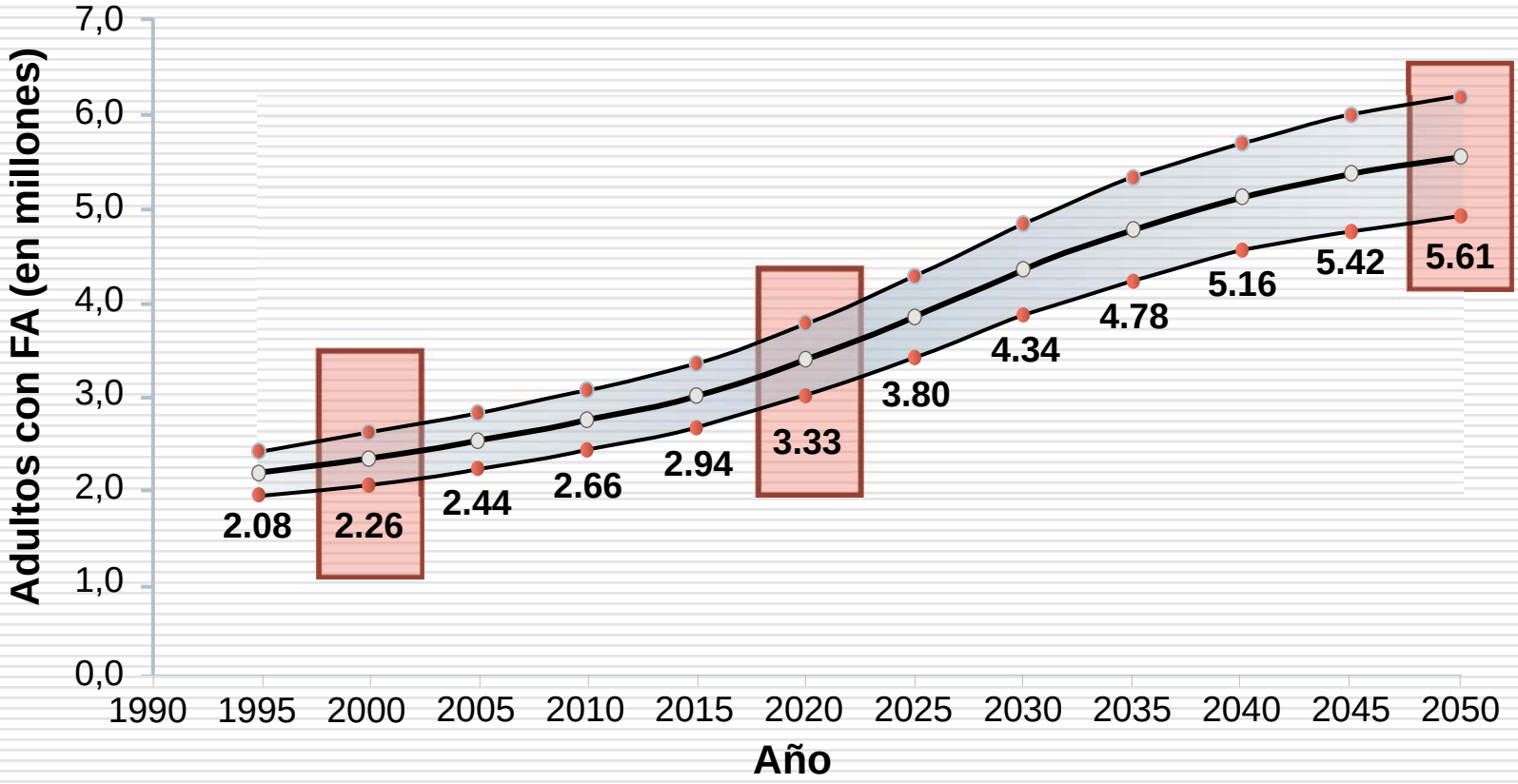
Framingham



- **Los riesgos de FA son altos aun cuando no hubiera antecedentes de IC o IAM**

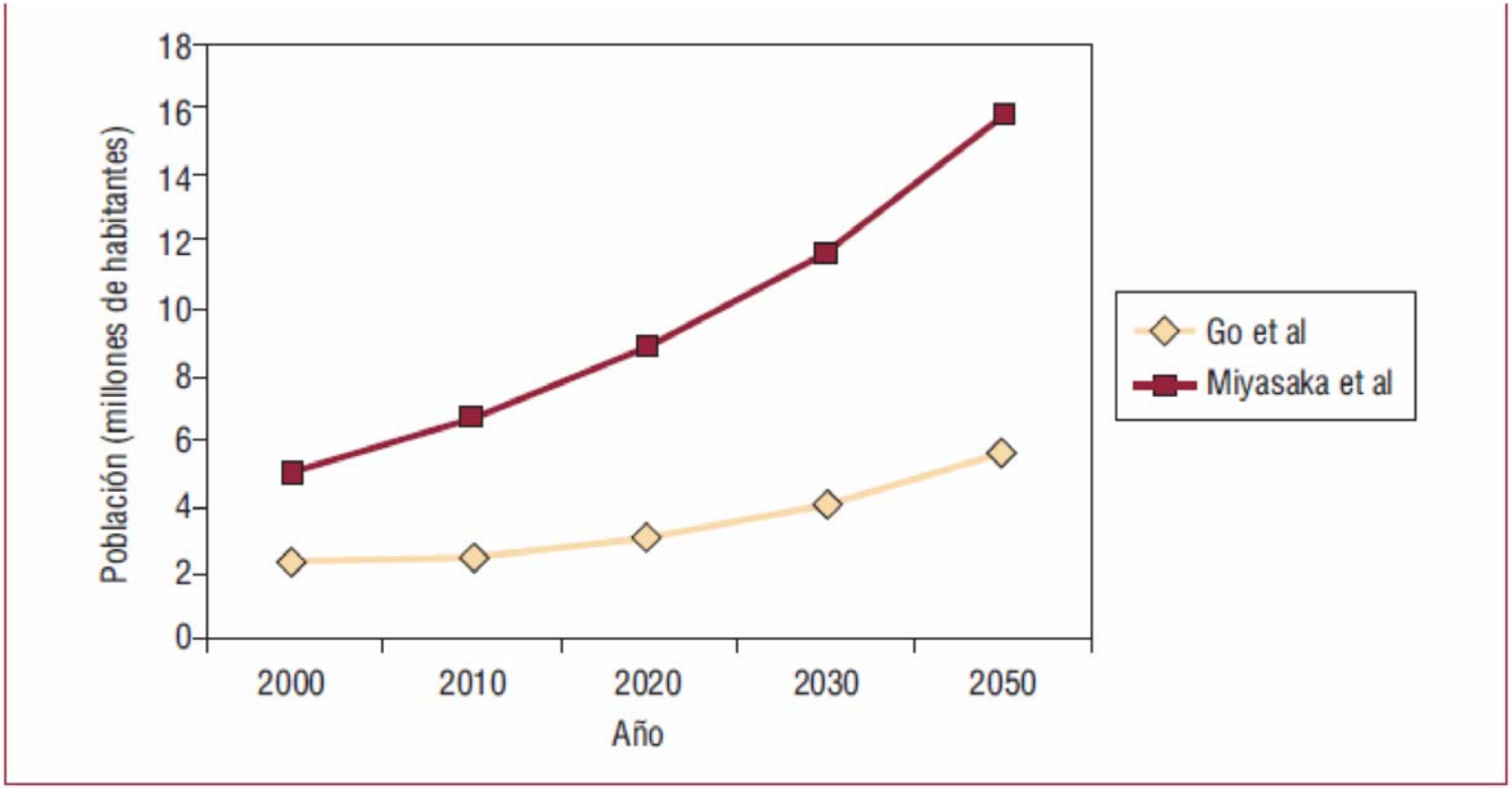
Lloyd-Jones DM, *et al. Circulation*. 2004; 110: 1042-6.

Se prevé que la prevalencia de FA aumente 2,5 veces o más en los EE.UU. en el 2050

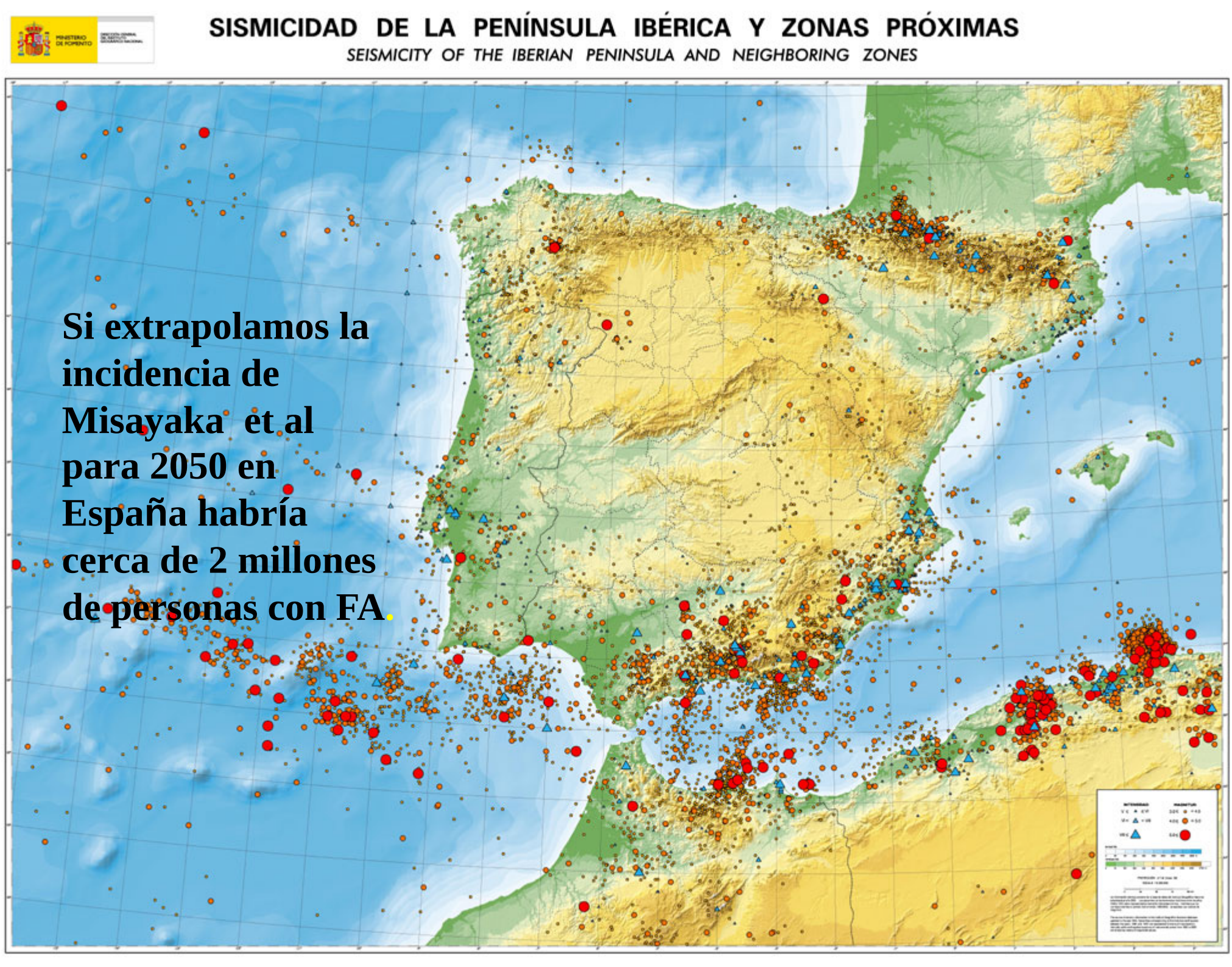


Go AS. *et al. JAMA* 2001;285:2370-5.

Un estudio posterior piensa que la prevalencia de FA aún será mayor al incorporar datos de FA paroxistica.



Misayaka Y *et al. Circulation 2006*; 114: 119-25.


SISMICIDAD DE LA PENÍNSULA IBÉRICA Y ZONAS PRÓXIMAS
SEISMICITY OF THE IBERIAN PENINSULA AND NEIGHBORING ZONES
Si extrapolamos la incidencia de Misayaka et al para 2050 en España habría cerca de 2 millones de personas con FA.

La repercusión de la fibrilación auricular

- Prevalencia
- Impacto en morbilidad
- Impacto en mortalidad
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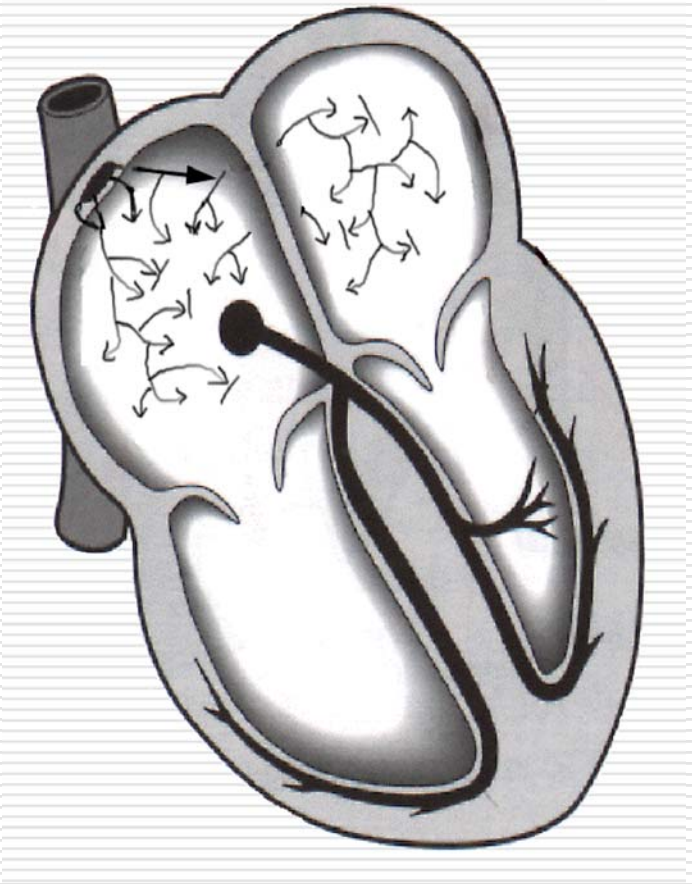
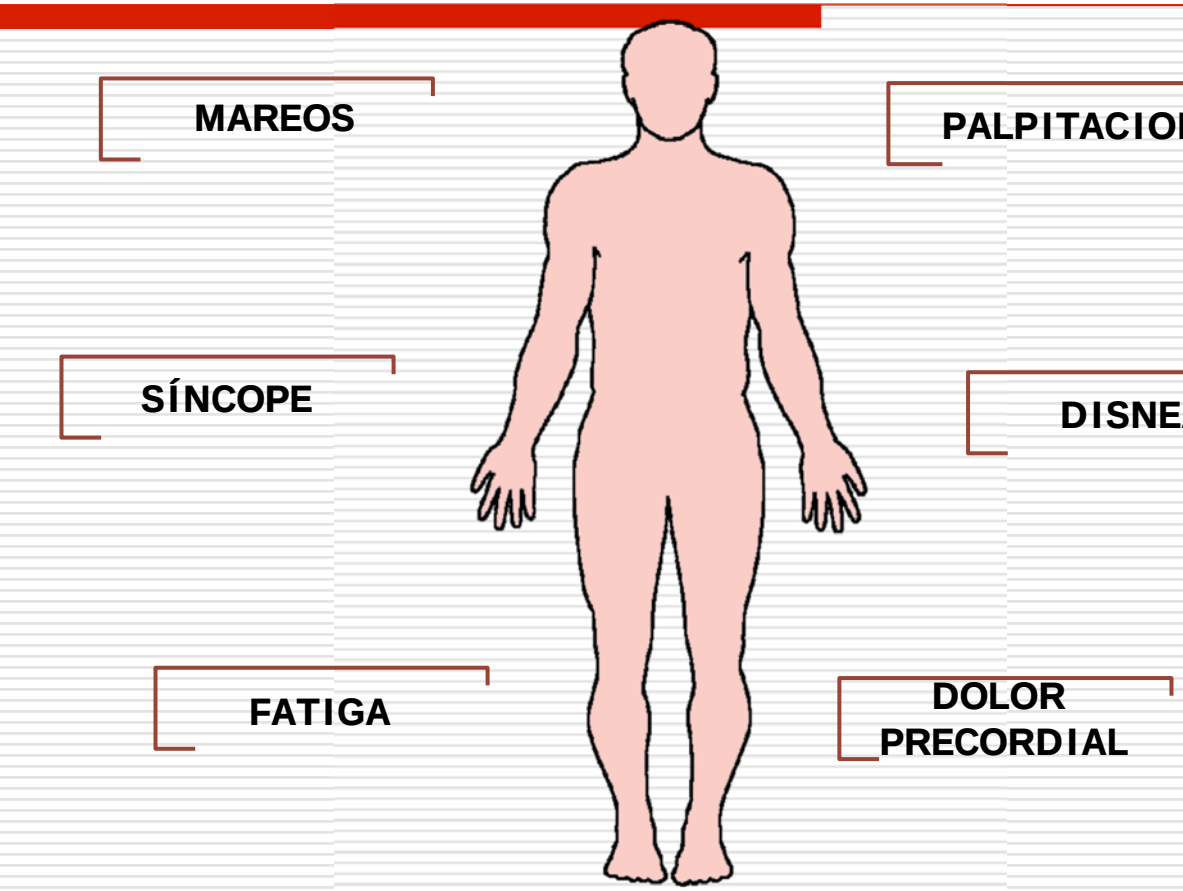
- Impacto en el día a día en el paciente
- Impacto en el día a día del internista



La FA puede manifestarse con un amplio rango de síntomas



- La FA también puede ser asintomática

ACC/AHA/ESC 2006 guidelines *Eur Heart J.* 2006;27(16):1979–2030

La FA asintomática es frecuente

- **Hasta un 33% de los pacientes con FA podrían ser asintomáticos.**

  Savelieva I, *et al. Pacing Clin Electrophysiol*. 2000;23:145-8

- **A partir de estudios con monitorización Holter y transtelefónica, se ha demostrado que los episodios asintomáticos de FA paroxística son de 10 a 12 veces más frecuentes que los episodios sintomáticos.**

  Page RL, *et al. Circulation*. 2003;107:1141-5
  Defaye P, *et al. Pacing Clin Electrophysiol*. 1998;21:250-5

La FA asintomática es frecuente

- **En el estudio AFFIRM el 12% pacientes asintomaticos.**

- **Eran más frecuentemente varones, de raza caucásica, y con una menor incidencia de cardiopatía isquémica, insuficiencia cardíaca y enfermedad arterial periferica.**

Flaker GC, *et al. Am Heart J* 2005;149: 657-63

La FA asintomática es frecuente

- **Los episodios de FA pueden pasar desapercibidos si son asintomáticos pero, no por ello, dejan de tener consecuencias perjudiciales para el paciente a largo plazo.**

Page RL, *et al. Circulation*. 2003;107:1141-5

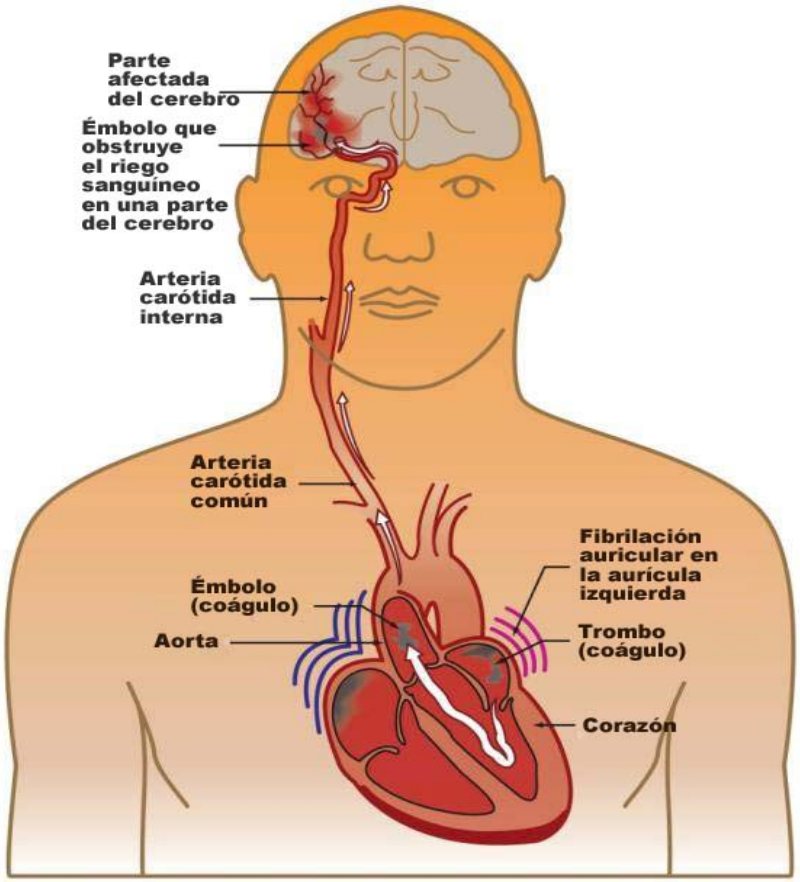
Así 21 de 115 (18%) AVC asociados con FA en una cohorte del Estudio Framinghan era FA no conocidas.

Lin H-J, *et al*. Stroke 1995; 26: 1527-30

La FA es un factor de riesgo independiente para el accidente cerebrovascular

- Los pacientes con FA tienen un aumento de casi 5 veces del riesgo de accidente cerebrovascular

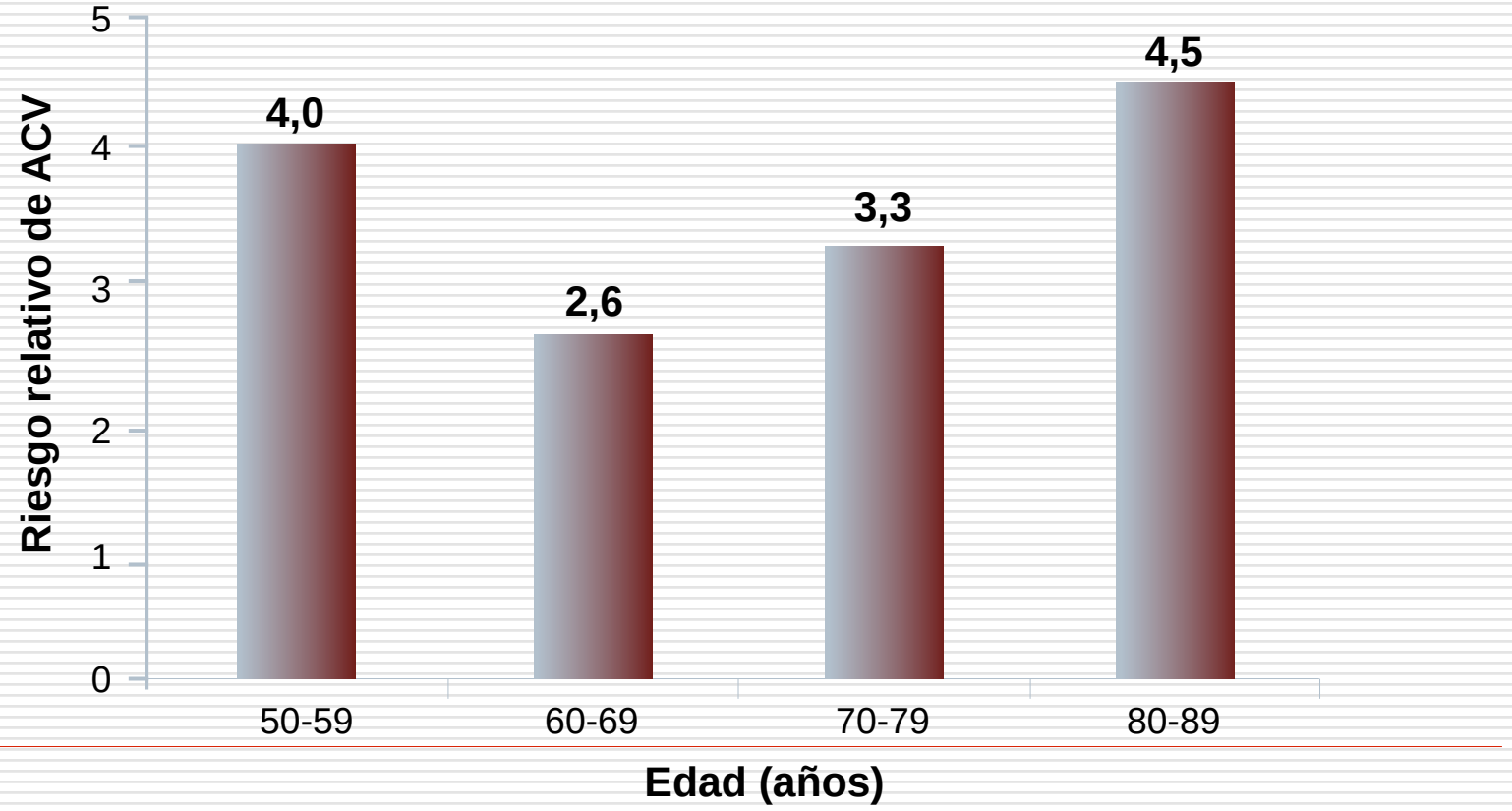
Wolf *et al. Stroke* 1991;22:983-98



La FA aumenta casi 5 veces el riesgo de accidente cerebrovascular

Framingham

***p*<0,001 frente a pacientes sin FA**

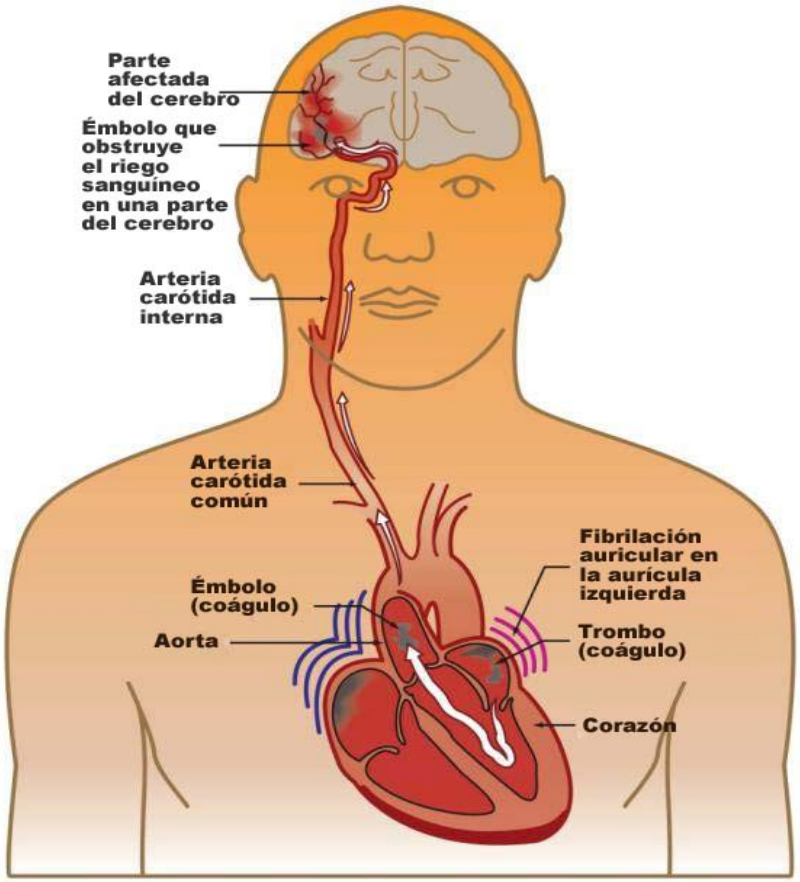


Wolf *et al. Stroke* 1991:22:983-88

La FA es un factor de riesgo independiente para el accidente cerebrovascular

- **1 de cada 6 AVC se da en un paciente con FA**

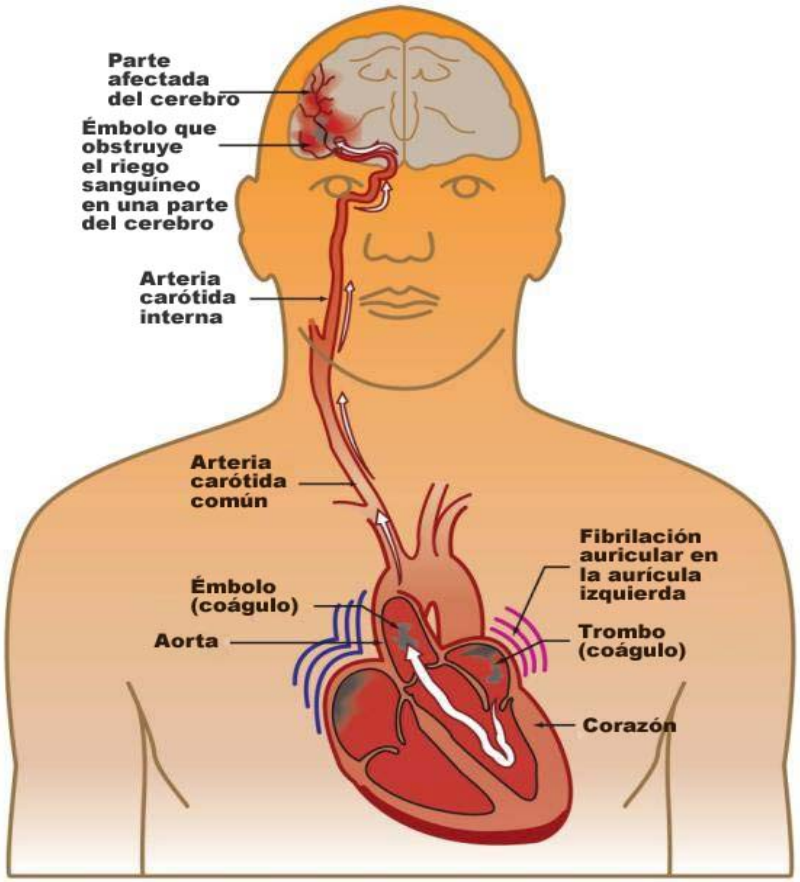
  Fuster V, *et al. Circulation*. 2006; 114:e257-e354



La FA es un factor de riesgo independiente para el accidente cerebrovascular

- El AVC isquémico asociado con FA generalmente es más grave que el AVC debido a otras etiologías

Dulli DA, *et al. Neuroepidemiology*. 2003;22:118-23



La FA afecta negativamente a la evolución del accidente cerebrovascular

- **La FA aumenta la mortalidad a los 30 días relacionada con el AVC**: 25% de los pacientes con AVC relacionado con FA fallecieron frente a 14% en los AVC sin FA
  - **Tras 1 año**, el 63% de los pacientes con FA había fallecido frente al 34% de los pacientes sin FA
  - **Tras 1 año,** hubo recurrencia del AVC en 23% de los pacientes con FA frente a 8% de los pacientes sin FA

Lin HJ *et al. Stroke* 1996;27:1760-4

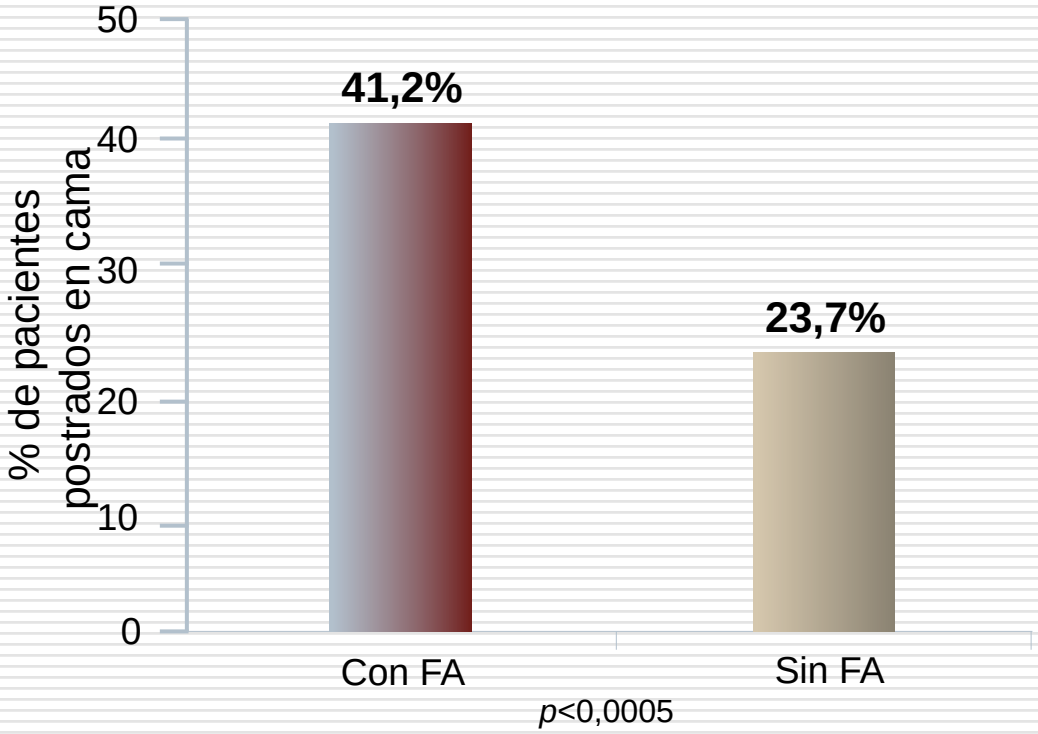
La FA aumenta el riesgo de recurrencia del ACV y de mortalidad después de un ACV

Framingham

	Pacientes con FA	Pacientes sin FA	
Recurrencia del ACV al cabo de un año	23%	8%	***p*<0,001**
Mortalidad a los 30 días después del ACV	25%	14%	**OR 1,84** (IC 95%; 1,04 a 3,27)
Mortalidad al cabo de un año después del ACV	63%	34%	***p*<0,001**

Lin HJ *et al. Stroke* 1996;27:1760-4

El ACV isquémico asociado con FA generalmente es más grave que el AVC debido a otras etiologías

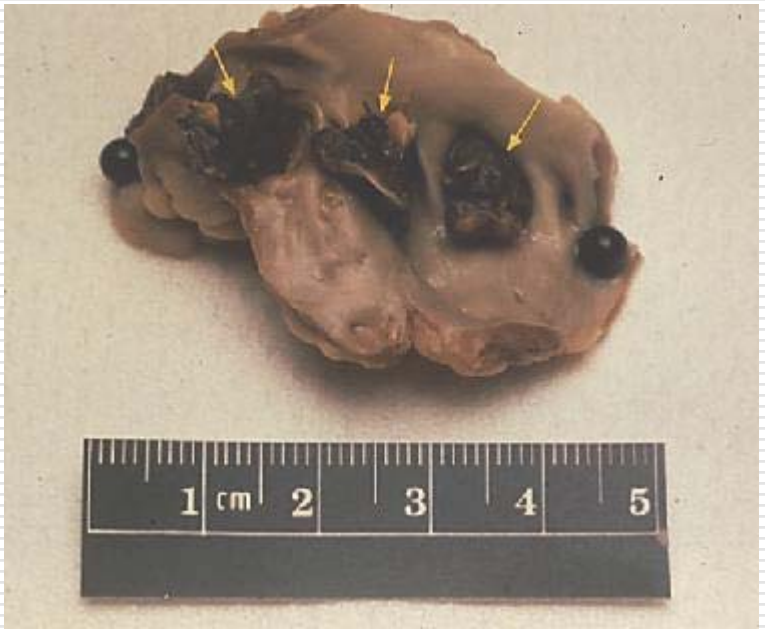


- **El odds ratio para postración en cama después de un AVC provocado por FA fue 2,23 (IC 95%; 1,87-2,59; *p*<0,0005)**

Dulli DA, *et al. Neuroepidemiology*. 2003;22:118-23.

La FA afecta negativamente a la evolución del AVC

- El resultado respecto a la recuperación funcional es más desfavorable en los pacientes con FA



Firedman PJ. *Stroke* 1991;2:209-214.

Current Status of Stroke Risk Stratification in Patients With Atrial Fibrillation

Stroke. 2009;40:2607-2610.

Robert G. Hart, MD; Lesly A. Pearce, MS

Table 1. Independent Risk Factors for Stroke in Atrial Fibrillation Patients: Summary of Studies Using Multivariate Analysis*

Feature	No. of Positive Studies/Total No. of Studies Analyzing	Pooled Relative Risk Estimate* (95% CI)
Prior stroke or TIA	5 of 5	2.5 (1.9–3.3)
Increasing age per decade	6 of 6	1.4 (1.3–1.6)
History of hypertension	4 of 5	1.9 (1.5–2.4)
Systolic blood pressure ≥160†	3 of 3	1.4 (1.2–1.6)
Diabetes	4 of 6	1.7 (1.5–2.1)
Female sex	3 of 6	NC
Left ventricular dysfunction by echocardiography	1 of 3	NC
Heart failure	0 of 4‡	NC
Coronary artery disease	0 of 5	NC
Paroxysmal vs permanent pattern	0 of 4	NC

Current Status of Stroke Risk Stratification in Patients With Atrial Fibrillation

Stroke. 2009;40:2607-2610.

Robert G. Hart, MD; Lesly A. Pearce, MS

Table 2. Stroke Risk Stratification in Atrial Fibrillation: Three Prominent Schemes

CHADS2[18]	ACC/AHA/ESC Guidelines (2006)[19]	ACCP Practice Guidelines (2008)[20]
Congestive heart failure*–1 point	**High risk**	**High risk**
Hypertension†–1 point	Prior thromboembolism‡	Prior thromboembolism‡
Age >75 yrs–1 point	≥2 moderate risk features	≥2 moderate risk features
Diabetes–1 point	**Moderate risk**	**Intermediate risk**
Stroke/TIA - 2 points	Age ≥75 years	Age ≥75 years
	Heart failure**	Heart failure**
Low risk=0 points	Hypertension†	History of hypertension†
Moderate risk=1 point‖	Diabetes	Diabetes
High risk ≥2 points	Left ventricular ejection fraction ≤35% or fractional shortening <25%	Moderately to severely impaired left ventricular systolic function¶
	Low risk§	**Low risk§**
	No moderate- or high-risk features	No intermediate or high risk features

Current Status of Stroke Risk Stratification in Patients With Atrial Fibrillation

Stroke. 2009;40:2607-2610.

Robert G. Hart, MD; Lesly A. Pearce, MS

Table 3. Ischemic Stroke Rates Associated With Classification as Moderate-Risk*

Study	Design	n	f/u	Antiplatelet Therapy	Time Period	Stroke Rate (95% CI)
CHADS2 score=1						
Gage et al[18]	HDC	463	1.2	31% ASA	late 1990s	2.8%/yr‡ (2.0–3.8)
Gage et al[23]	RCTs	752	1.9	100% ASA	1987–1996	2.2%/yr (1.6–3.1)
Go et al[14]	OLC	≈1628	2.2	≈45% ASA	1996–1999	1.5%/yr (1.2–1.9)
Healey et al[4]	RCT	2436	1.3	100% CPG+ASA	2003–2006	1.3%/yr (0.9–1.7)†
Ruiz Ortiz et al[24]	OLC	81	1.8	NR	2000–2006	2.8%/yr (1.1–5.7)
Mant et al[26]§	RCT	221	2.3	100% ASA	2003–2006	1.4%/yr (0.6–2.9)
ACTIVE A[25]	RCT	1338	3.6	100% ASA	2003–2008	2.4%/yr (2.0–2.9)
	RCT	1360	3.6	100% ASA+CPG	2003–2008	1.6%/yr (1.3–2.0)
AHA/ACC/ESC criteria for moderate-risk						
None identified						
ACCP Practice Guidelines criteria for intermediate-risk						
None identified						

Estratificación del riesgo trombótico para FANR

- **Criterios de riesgo CHADS2:**
  (JAMA 2001; 285: 2864-70)

- AIT, ACVA ó embolismo sistémico previo: 2

- ICC silente o disfunción ventricular moderada/severa: 1

- HTA: 1

- Edad >75 años: 1

- DM: 1

Índice CHADS2	Riesgo ictus	Nº de pacientes a tratar para prevenir un episodio embolígeno/ año
0	1,9 (1,2-3,0)	417
1	2,8 (2,0-3,8)	125
2	4,0 (3,1-5,1)	81
3	5,9 (4,6-7,3)	33
4	8,5 (6,3-11,0)	27
5	12,5 (8,2-17,5)	44
6	18,2 (10,5-27,4)	44

Mayor beneficio absoluto de tto si alto riesgo
0-1 puntos: AAS
2-3 puntos: AAS o ACO
>3 puntos: ACO

Tabla 4 Tasa ajustada de ictus según la puntuación CHAD2*

Pacientes (nº1733)	Puntuación CHADS2	Tasa de ictus ajustada (%/año)* (IC 95%)
120	0	1.9 (1,2 a 3,0)
463	1	2.8(2,0 a 3,8)
523	2	4.0 (3,1 a 5,1)
337	3	5.9 (4,6 a 7,3)
220	4	8.5 (6,3 a 11,1)
65	5	12.5 (8,2 a 17,5)
5	6	18.2 (10,5 a 27,4)

La tasa ajustada de ictus derivada de análisis multivariantes asumiendo que no había uso de aspirina van Walraven et al [24] y Gage et al[25].

*Tomado de European Heart Rhythm Association; Heart Rhythm Society, Fuster V, Rydén LE, Cannom DS, Crijns HJ, et al[23]

Escala CHADS2 (año 2003)

Insuficiencia cardiaca congestiva	1
Hipertensión	1
Edad => 75	1
Diabetes	1
Episodio previo de AVC	2

CHADS2	Mortalidad anual (%) con dicumarínicos	Mortalidad anual (%) sin dicumarínicos	Nº de pacientes a tratar para prevenir un episodio embolígeno/año
0	0,25	0,49	417
1	O,72	1,52	125
2	1,27	2,5	81
3	2,20	5,27	33
4	2,35	6,02	27
5 o 6	4,6	6,88	44

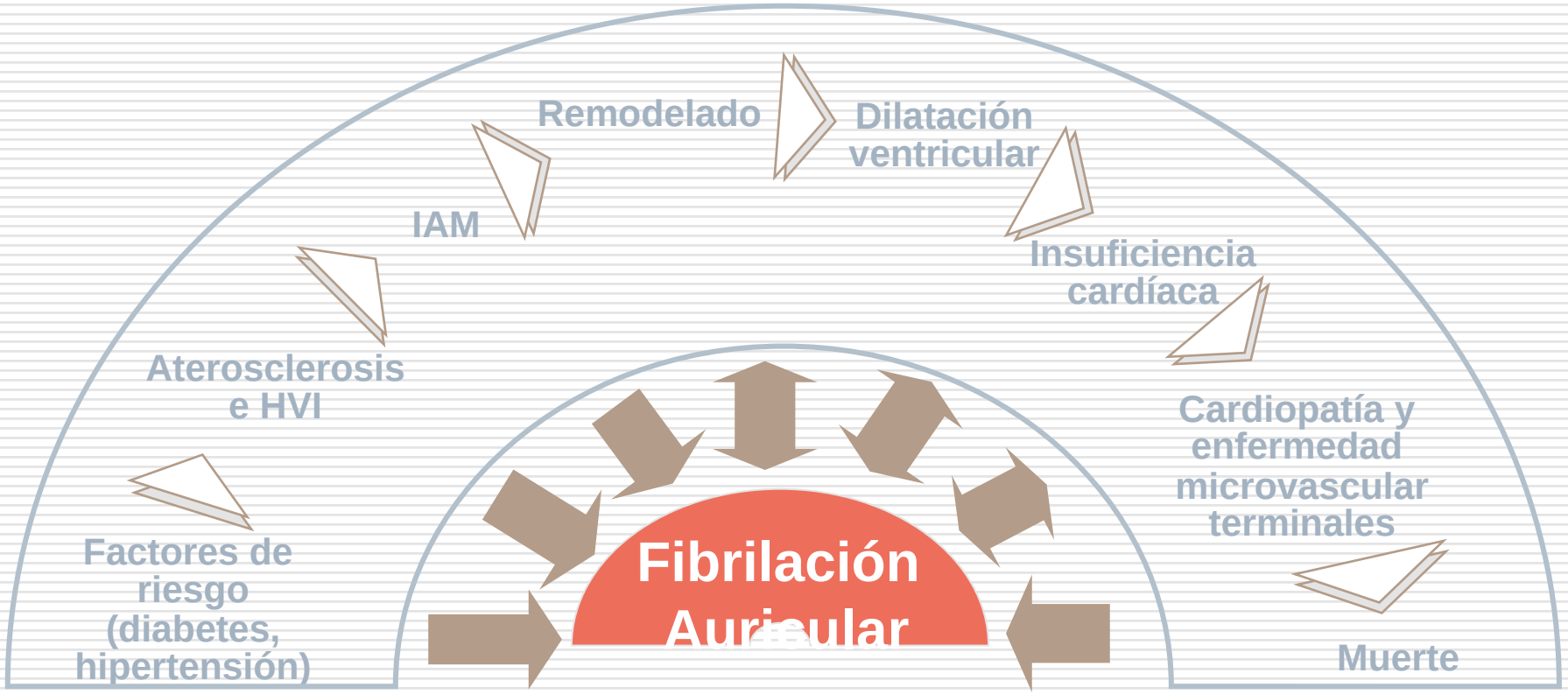
CHADS2 = 0 → aspirina

CHADS2 = 1 Ó 2 -> Riesgo intermedio

Podemos elegir entre aspirina (325 mg diarios) o dicumarínicos en función de la valoración del riesgo, de las posibles complicaciones y, por qué no, de la preferencia del paciente.

CHADS2 => 3 anticoagulación oral crónica con dicumarínicos.

La FA aumenta el riesgo en la cadena cardiovascular



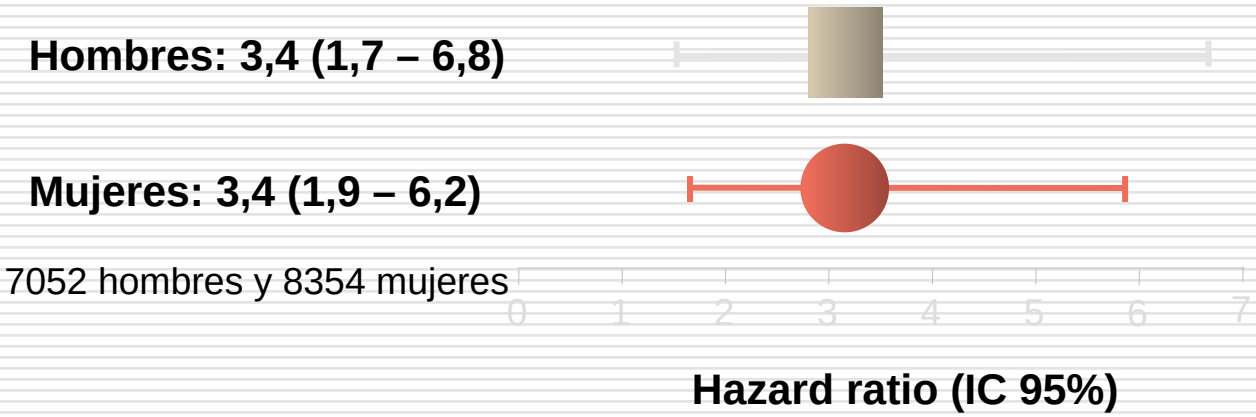
El SRAA puede afectar a la progresión de la FA y la inhibición del SRAA puede tener algunos efectos beneficiosos[3,4]

1. Benjamin EJ, *et al. JAMA*. 1994;271:840-4; 2. Krahn AD, *et al. Am J Med*. 1995;98:476-84;
3. Nakashima H, *et al. Circulation*. 2000;101:2612-7; 4. Tsai CT, *et al. Circulation*. 2004;109:1640-6.

La FA aumenta el riesgo de insuficiencia cardíaca

Renfrew/Paisley

Riesgo de insuficiencia cardíaca en pacientes con FA comparados con pacientes sin FA



- **La presencia de FA fue un factor pronóstico independiente de IC en hombres y mujeres**

Stewart *et al*. Am J Med. 2002;113:359 –64

La FA empeora el pronóstico de los pacientes con comorbilidades

Pacientes con FA de diagnóstico reciente	Eventos	Riesgo
Hipertensión[1] • n=8851 • Seguimiento: 4,8 ± 1 año	Acontecimientos cardiovasculares	X 1,88
	AVC mortal y no mortal	X 3
	Hospitalización por insuficiencia cardíaca	X 5
ICC[2] • n=1470 • Seguimiento: 5,6 años	Mortalidad en hombres	X 1,6
	Mortalidad en mujeres	X 2,7
IM[3] • n= 17944 • Seguimiento: 4 años	Mortalidad hospitalaria	X 1,98
	Mortalidad a largo plazo (4 años)	X 1,78

1. Adaptado de Wachtell K, *et al. J Am Coll Cardiol*. 2005;45:712-9.
2. Adaptado de Wang *et al. Circulation* 2003;107:2920-5.
3. Adaptado de Pizzetti F, *et al. Heart*. 2001;86:527-32.

Fibrilación auricular y demencia

Atrial Fibrillation in Elderly Patients with Dementia

Francesc Formiga[a] Isabel Fort[b] Lluis Reig[c] Maria Jose Robles[d] Maria Carmen Espinosa[e]
Daniel Rodriguez[f]

Gerontology

[a]Geriatric Unit, Internal Medicine Service, Hospital Universitari de Bellvitge, L'Hospitalet de Llobregat, [b]Alzheimer's Disease and Other Dementias Integral Care Unit, El Carme Social Health Centre, Badalona Healthcare Services, Badalona, [c]Geriatric Unit, Hospitalet Social Health Hospital, Integral Health Consortium, Barcelona, [d]Geriatric Service, IMAS (Municipal Healthcare Institute), Convalescent Unit, Hospital de la Esperanza, Centro Forum, Hospital del Mar, Institute for Geriatric, Social and Health Care (IAGS), Barcelona, [e]Psychogeriatric Unit, Sant Jaume y Santa Magdalena Hospital, Maresme Health Consortium, Mataró, and [f]Integral Outpatient Cognitive Disorder Evaluation Service, Terrassa Health Consortium, Terrassa, Spain

En un estudio de 515 pacientes con demencia; 84 (16,3%) tenían fibrilación auricular.
Sólo 46% recibían tratamiento anticoagulante oral.

Formiga F, *et al*. Gerontology 2009;55:202-4

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Neurobiology of Aging xxx (2009) xxx–xxx

NEUROBIOLOGY OF AGING

www.elsevier.com/locate/neuaging

Negative results

Atrial fibrillation, stroke and dementia in the very old: A population-based study

Alessandra Marengoni [a,b,*], Chengxuan Qiu [a], Bengt Winblad [a], Laura Fratiglioni [a,c]

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[b] *Geriatric Unit, Civili Hospital, Department of Medical and Surgery Sciences, University of Brescia, Piazzale Spedali Civili 1, 25121 Brescia, Italy*

[c] *Stockholm Gerontology Research Center, Gävlegatan 16, SE-113 30 Stockholm, Sweden*

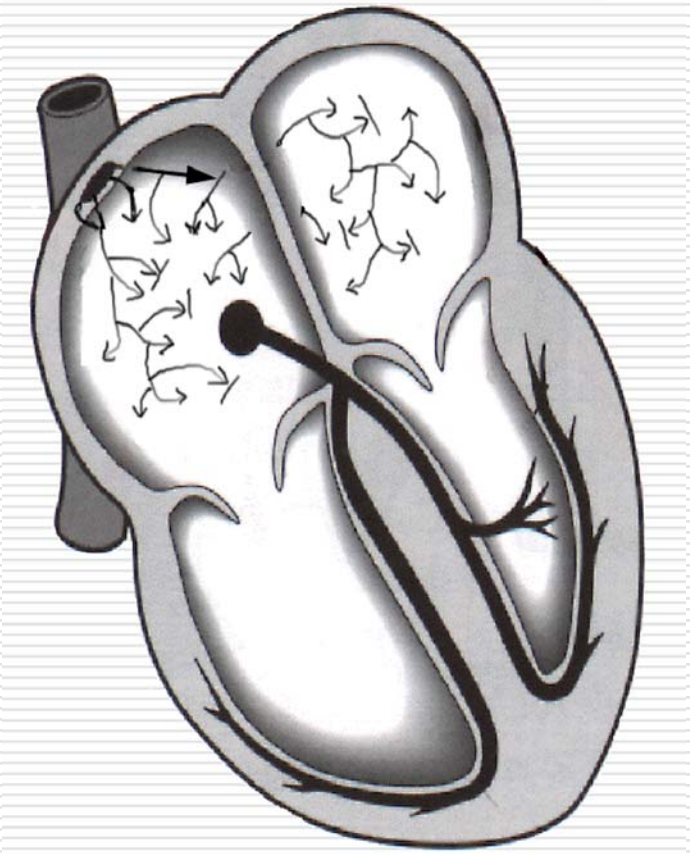
Received 11 April 2009; received in revised form 20 July 2009; accepted 3 August 2009

Abstract

We explored the association of chronic AF with stroke, dementia and Alzheimer's disease (AD) among community-dwelling elderly people. The study population consisted of 685 individuals from Stockholm (The Kungsholmen Project) who were aged 78 years and were free of dementia and clinical stroke. During the 6-year follow-up, 170 subjects developed dementia, and 86 persons experienced first-ever stroke. The incidence rate (per 1000 person-years) of dementia, AD and first-ever stroke was 72.3, 52.2, and 52.2 in persons with AF and 63.8, 54.6 and 30.6 in those without AF, respectively. AF was associated with the hazard ratio of 1.8 (95%CI, 1.0–3.4) for first-ever stroke, but not significantly associated with dementia or AD.

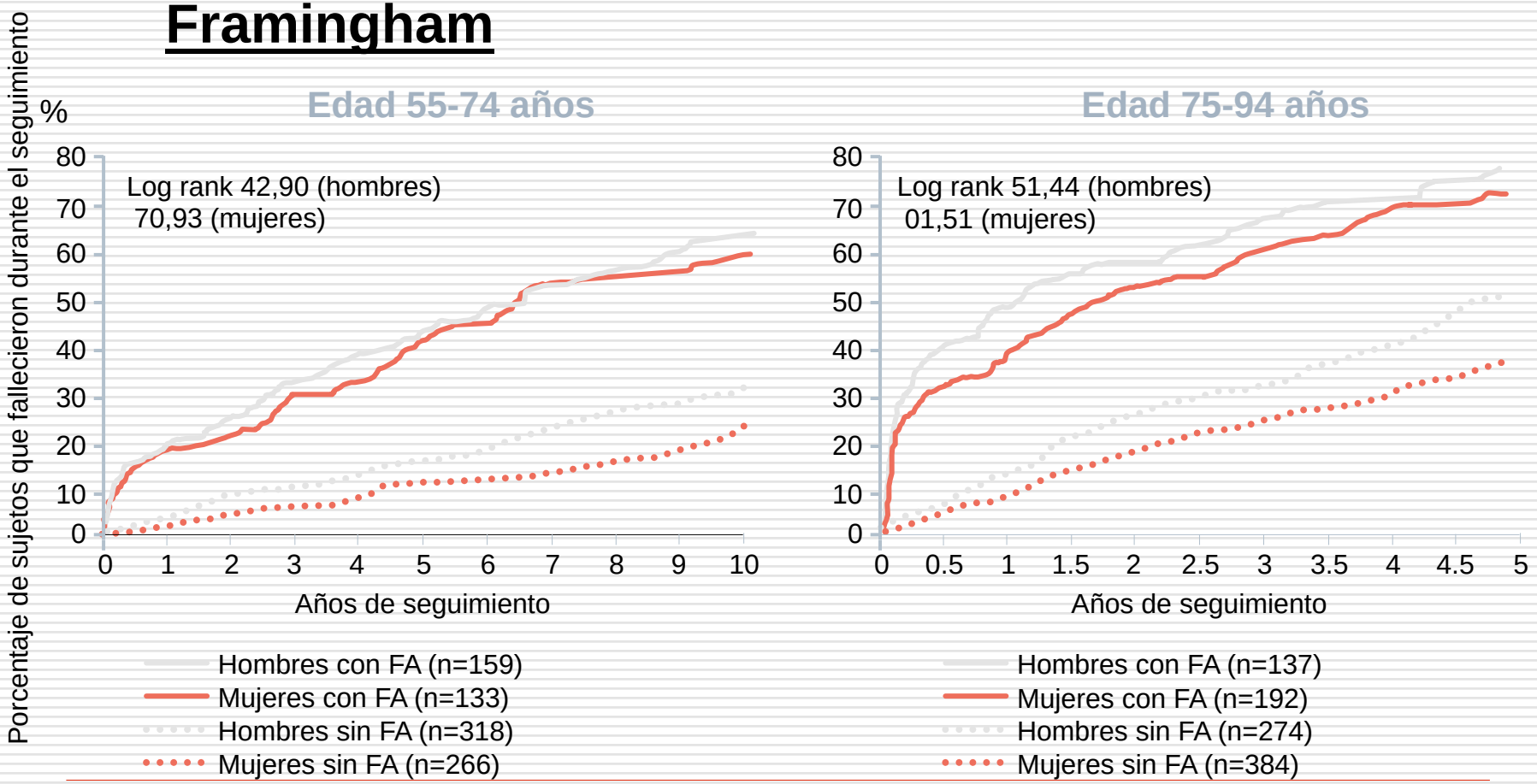
La repercusión de la fibrilación auricular

- Prevalencia
- Impacto en morbilidad
- Impacto en mortalidad
- Impacto económico
- Impacto en el día a día en el paciente
- Impacto en el día a día del internista



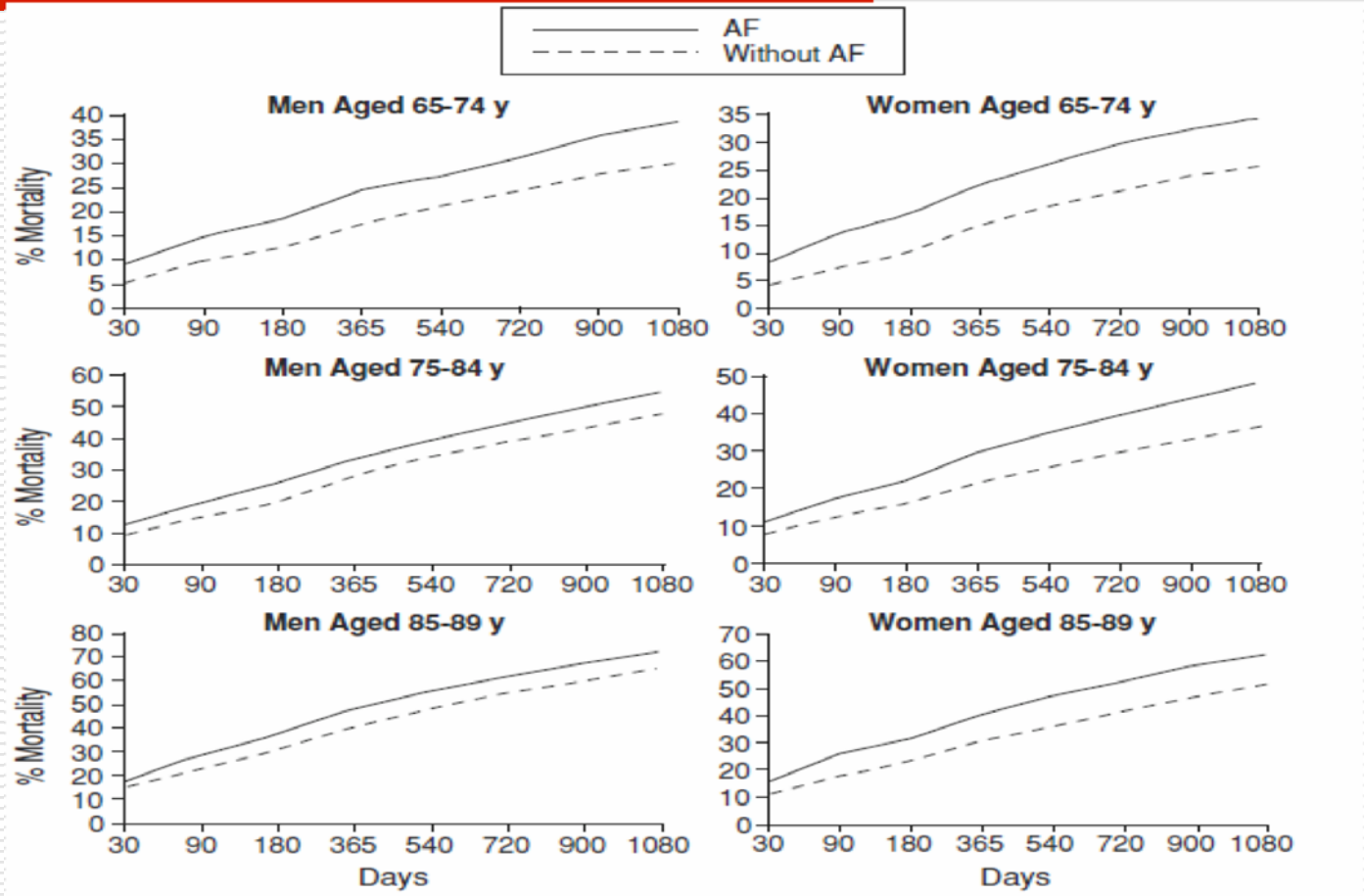
La FA duplica aproximadamente el riesgo de mortalidad tanto en los pacientes jóvenes, como los de más edad

Framingham



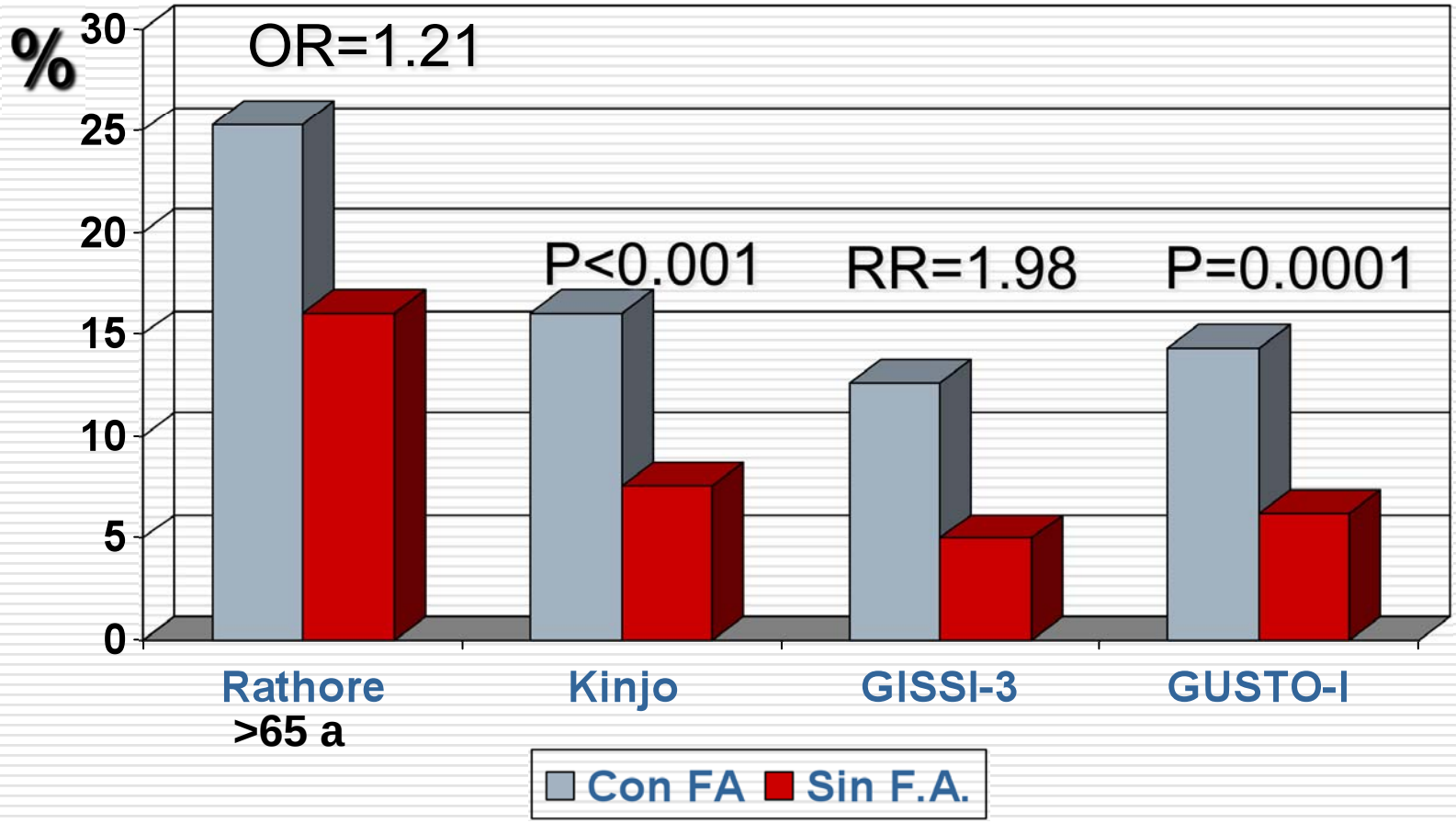
Benjamin EJ, *et al. Circulation*. 1998;98: 946-52

La FA aumenta el riesgo de mortalidad después de un ingreso hospitalario.



Wolf PA. Arch Intern Med 1998; 158: 229-34

Mortalidad hospitalaria: IAM Y FA

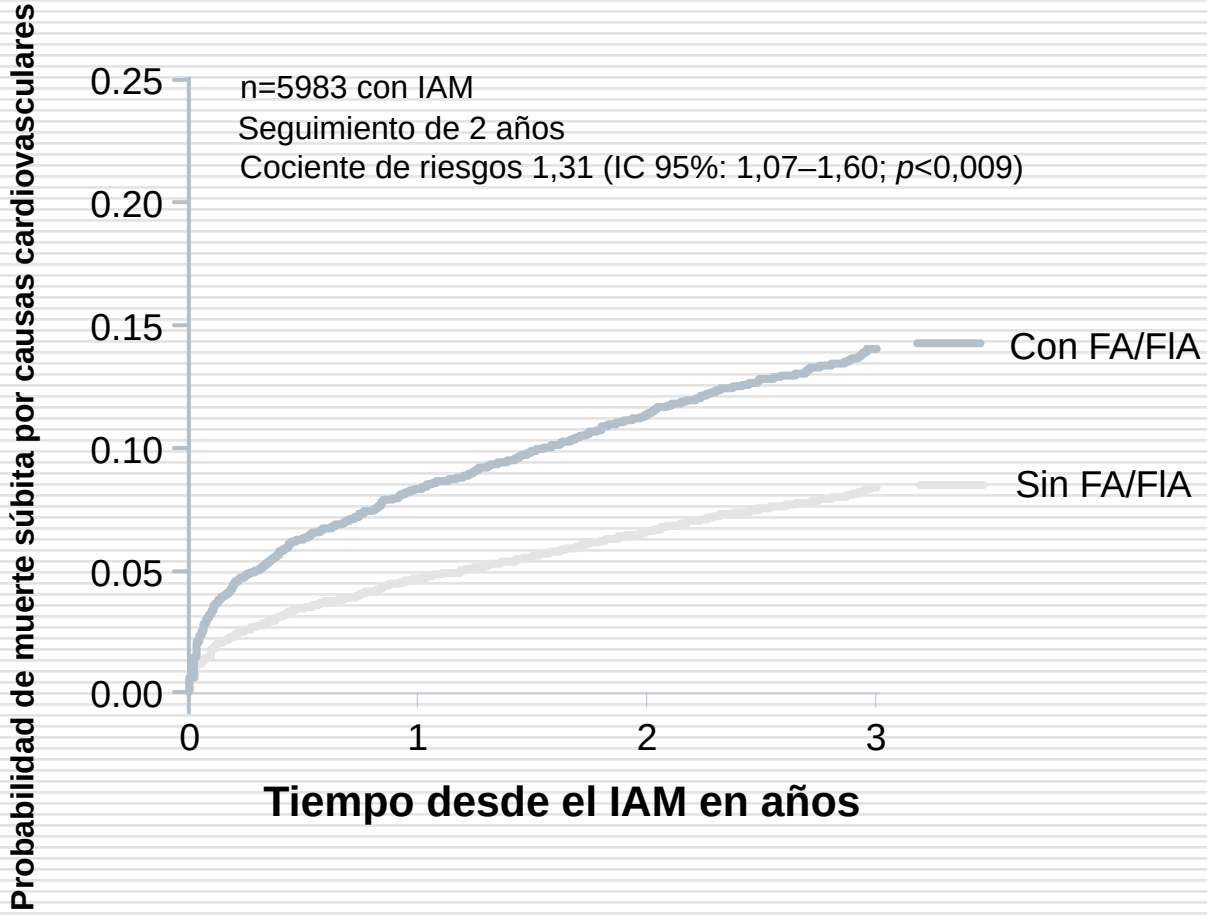


Rathore SS Circulation 2000;101:969

Kinjo. Am J Cardiol. 2003; 92:1150-4.

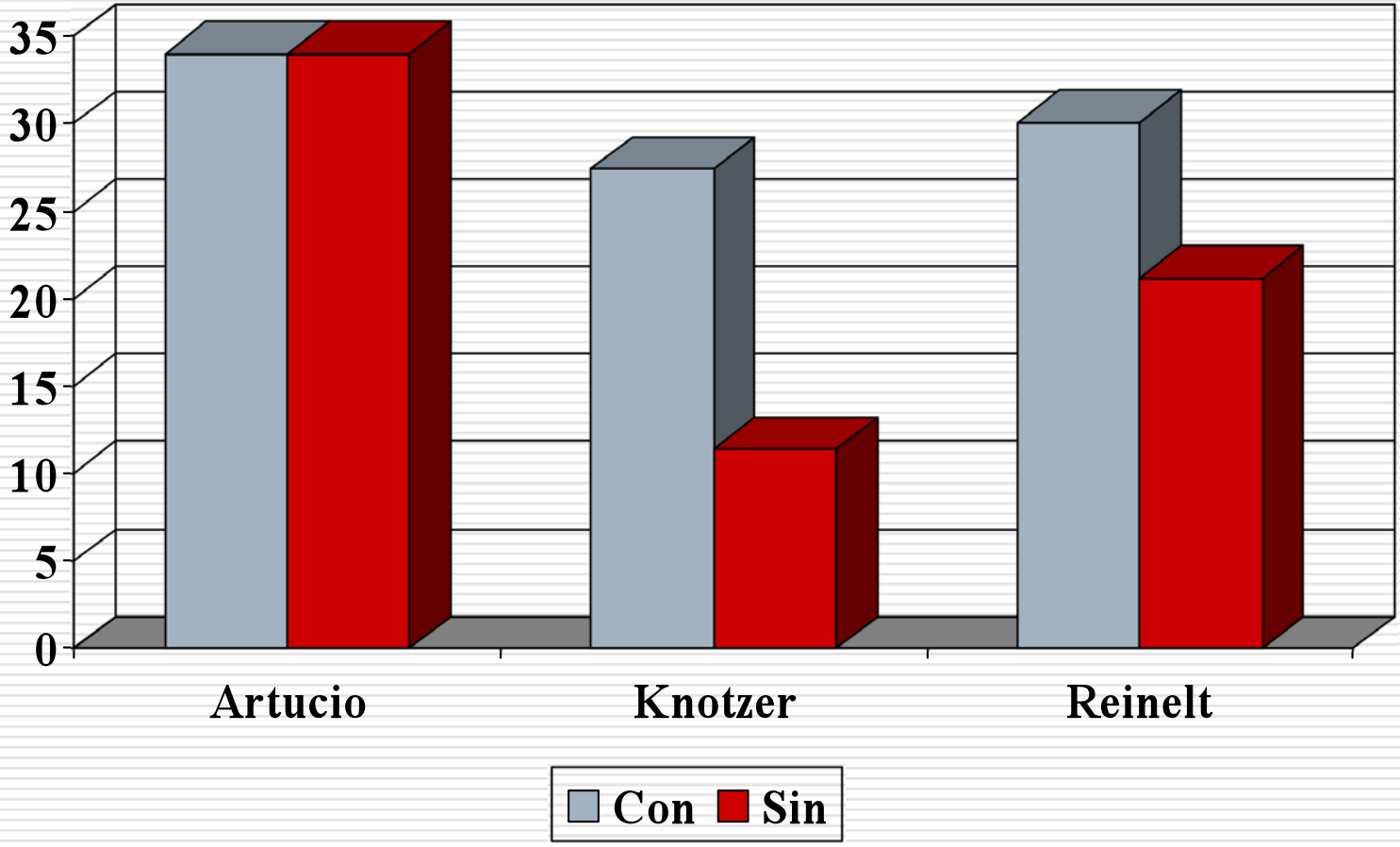
La FA aumenta el riesgo de muerte súbita

TRACE



Pedersen OD, *et al. EHJ* 2006; 27: 290-5.

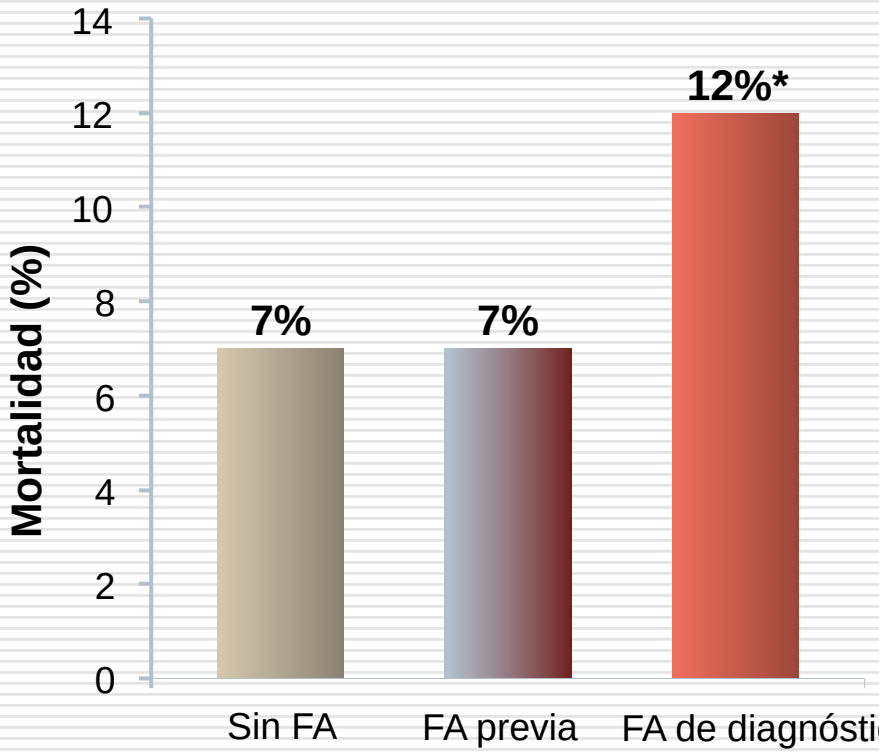
Fibrilación auricular
Mortalidad en cuidados intensivos



Artucio et al. Crit Care Med. 1990;18:1383-8. Knotzer et al. Curr Opin Crit Care. 2004;10:330-5.
Reinelt et al. Intensive Care Med. 2001; 27:1466-73.

La FA de diagnóstico reciente aumenta la mortalidad hospitalaria

EuroHeart Failure Survey (Encuesta Europea sobre IC)



*p<0,001 frente a pacientes con FA previa y sin FA

- **La FA de diagnóstico reciente es un factor pronóstico independiente mortalidad hospitalaria**

Rivero-Ayerza *et al. Eur Heart J.* 2008;29:1618-24.

Prevalence and prognostic significance of atrial fibrillation in outpatients with heart failure due to left ventricular systolic dysfunction

Pernille Corell [a,*], Finn Gustafsson [b], Morten Schou [a], John Markenvard [c], Tonny Nielsen [d], Per Hildebrandt [a]

Abstract

Introduction: Atrial fibrillation (AF) is common in patients with heart failure (HF) due to left ventricular systolic dysfunction (LVSD), with conflicting prognostic data. The aim of our study was to assess the prevalence and incidence of AF in patients with HF and to determine the prognostic impact of baseline AF and the development of new onset AF.

Methods and results: We included 1019 outpatients with HF due to LVSD; follow-up time ranged from 3 to 64 months. At baseline 26.4% of patients had AF. Of the 284 patients with a follow-up ECG and baseline SR, 18.7% developed new onset AF.

Patients with AF were older ($p<0.001$), more often male ($p=0.04$), and more likely to have a history of stroke ($p=0.03$), but were less likely to have IHD ($p<0.001$). Baseline rhythm was independent of LVEF and NYHA-class. Baseline AF was associated with increased all-cause mortality (HR 1.38; CI 1.07–1.78, $p=0.01$) and all-cause mortality/hospitalisation (HR 1.43; CI 1.22–1.68, $p<0.001$). When adjusted for baseline covariates, baseline AF was independently associated with an increased risk of experiencing the combined endpoint (HR 1.29; CI 1.05–1.58; $p=0.02$), but did not predict all-cause mortality. By multivariable analyses, new-onset AF was associated with increased risk of all-cause mortality/hospitalisation (HR 1.45; CI 1.05–2.00; $p=0.02$).

Conclusion: In outpatients with HF due to LVSD, AF is a common co-morbidity, which adversely affects morbidity and mortality outcomes.

European Journal of Heart Failure 9 (2007) 258 – 265

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European Journal of Heart Failure (2009) **11**, 676–683
doi:10.1093/eurjhf/hfp085

A meta-analysis of the prognostic significance of atrial fibrillation in chronic heart failure

Mamas A. Mamas[1,2]*, Jane C. Caldwell[1,2], Sanoj Chacko[2], Clifford J. Garratt[1,2], Farzin Fath-Ordoubadi[2], and Ludwig Neyses[1,2]

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Received 2 December 2008; revised 15 April 2009; accepted 12 May 2009

Aims Atrial fibrillation (AF) is one of the commonest sustained arrhythmias in chronic heart failure (CHF), although the prognostic implications of the presence of AF in CHF remain controversial. We have therefore performed this meta-analysis to study the effects of the presence of AF on mortality in CHF patients.

Methods and results A systematic MEDLINE search for all randomized trials and observational studies in which the influence of AF on CHF mortality was investigated and meta-analysis of the mortality data was performed. A total of 16 studies were identified of which 7 were randomized trials and 9 were observational studies including 30 248 and 23 721 patients, respectively. An adjusted meta-analysis of the data revealed that the presence of AF is associated with an adverse effect on total mortality with an odds ratio (OR) of 1.40 [95% confidence interval (CI) 1.32–1.48, $P < 0.0001$] in randomized trials and an OR of 1.14 (95% CI 1.03–1.26, $P < 0.05$) in observational studies. This increase in mortality associated with the presence of AF was observed in subgroups of CHF patients with both preserved and impaired left ventricular (LV) systolic function.

Conclusion In conclusion, meta-analysis of 16 studies involving 53 969 patients suggests that the presence of AF is associated with an adverse prognosis in CHF irrespective of LV systolic function.

Mortalidad y fibrilación auricular

Europace (2008) 10, 389–390
doi:10.1093/europace/eun054

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EDITORIAL

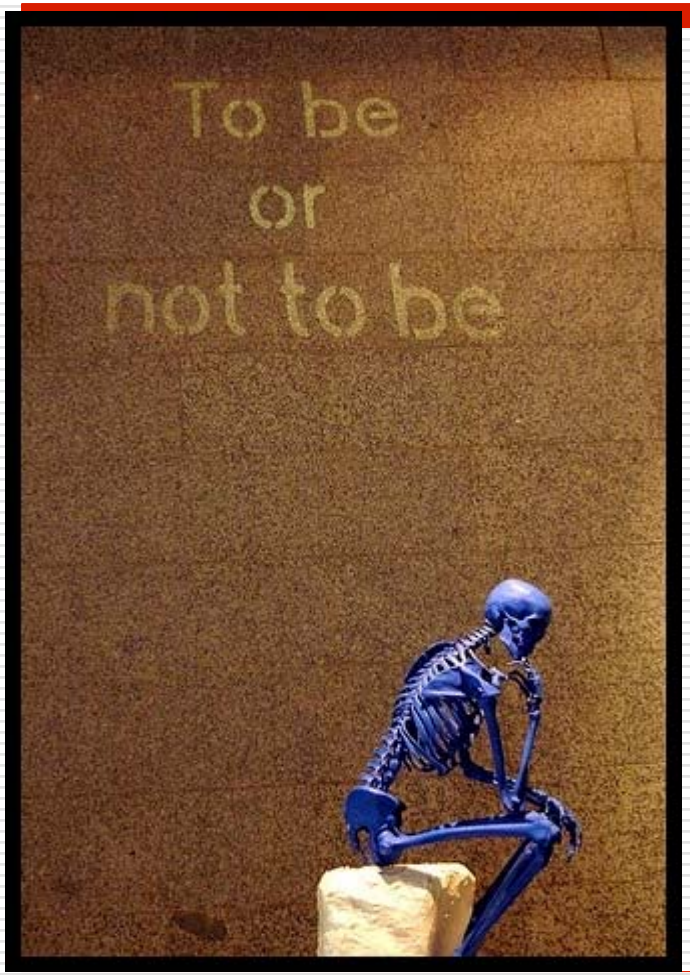
Mortality in patients with atrial fibrillation: improving or not?

Jaspal S. Taggar[1], Francisco Marín[2], and Gregory Y.H. Lip[1]*

[1]*Hemostasis Thrombosis and Vascular Biology Unit, University Department of Medicine, City Hospital, Birmingham B18 7QH, UK; and* [2]*Department of Cardiology, Hospital Virgen de la Arrixaca, Murcia, Spain*

-Si, si sólo fibrilación auricular.
-No, cuando hay importante comorbilidad.

Mortalidad y fibrilación auricular



- **Casi todos los estudios muestran que la FA se asocia con mayor mortalidad.**

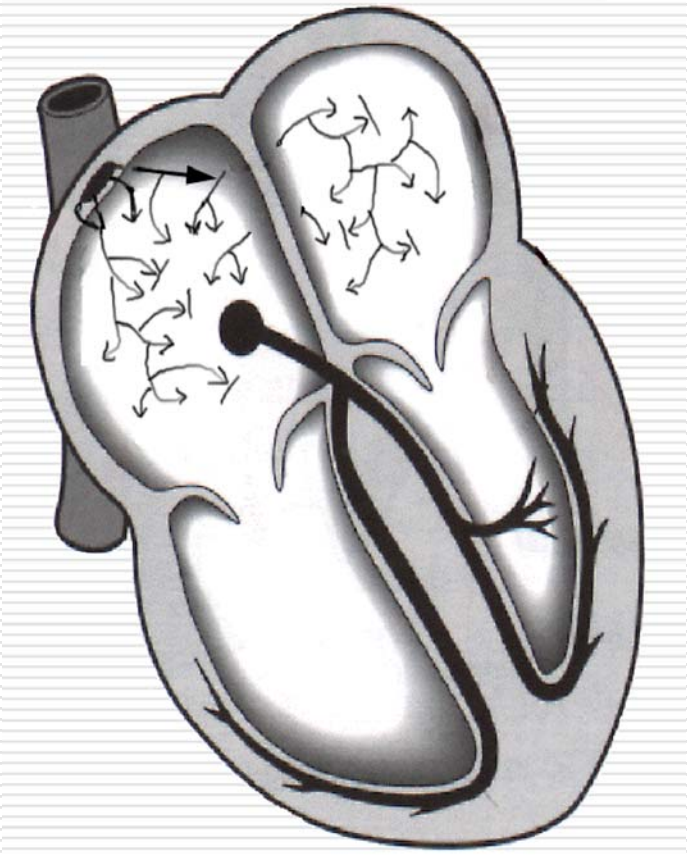
¿Qué es menos cierto?.

Es esta asociación una relación causa-efecto, o bien la FA es simplemente un marcador de severidad de la enfermedad cardiovascular o del proceso de envejecimiento.

Levitt H, Coplan NL .Mortality and atrial fibrillation: is there a causal relationship? Rev Cardiovasc Med. 2009; 10:25-8.

La repercusión de la fibrilación auricular

- Prevalencia
- Impacto en morbilidad
- Impacto en mortalidad
- Impacto económico
- Impacto en el día a día en el paciente
- Impacto en el día a día del internista



La FA es motivo de hospitalización

- La FA es la causa principal de hospitalizaciones por arritmia
  - La FA es responsable de aproximadamente un tercio de las hospitalizaciones por alteraciones del ritmo cardíaco[1]

Hospitalizaciones aumentaron x 2 a 3
(EE.UU. - 1985 a 1999)[2]

1. Go AS *et al. JAMA* 2001;285:2370-5.
2. Wattigney WA, *Circulation*. 2003;108:711-6.

La FA de diagnóstico reciente aumenta la duración de la hospitalización

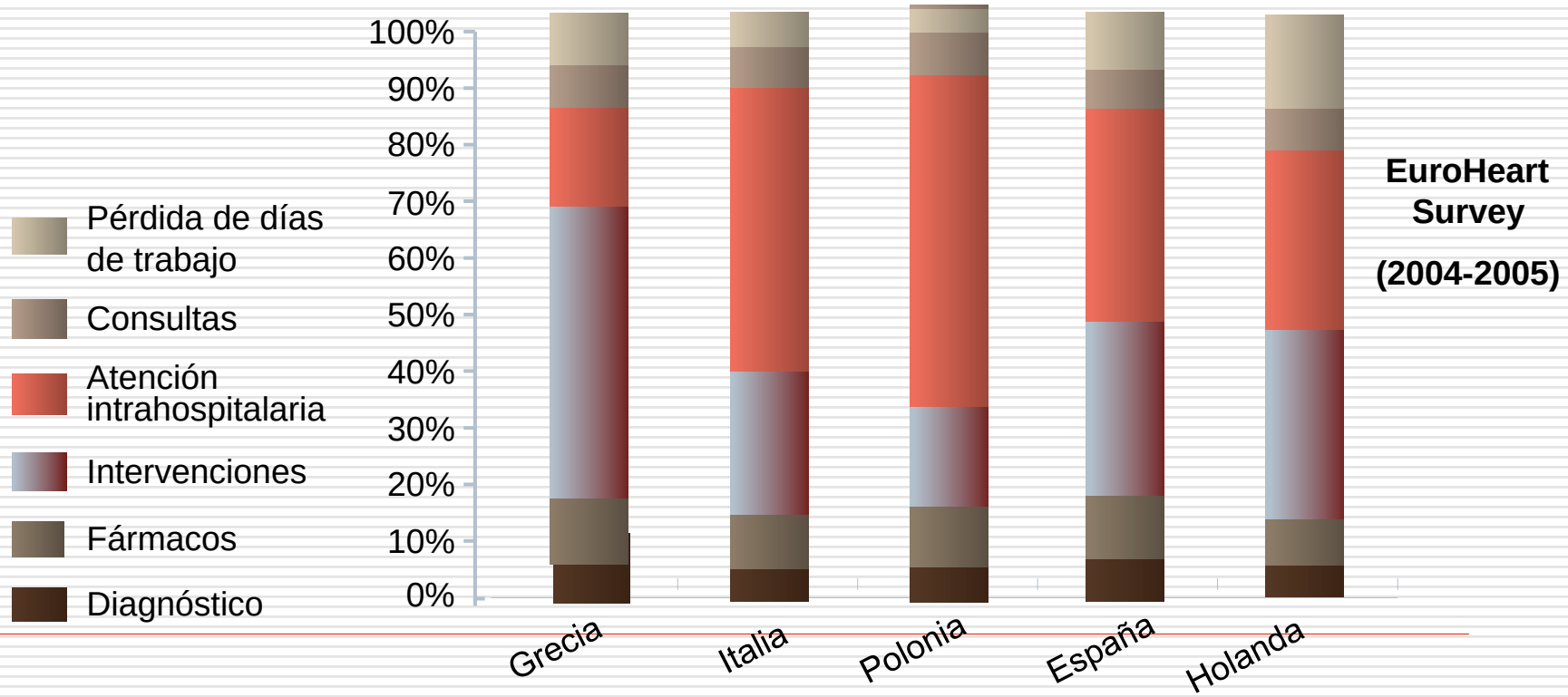
EuroHeart Failure Survey (Encuesta Europea sobre IC)

- **Prolongación de la estancia en la UCI**
- **Prolongación de la estancia en el hospital**

Rivero-Ayerza *et al. Eur Heart J.* 2008;29:1618-24.

Las hospitalizaciones representan uno de los principales costes en la atención de los pacientes con FA

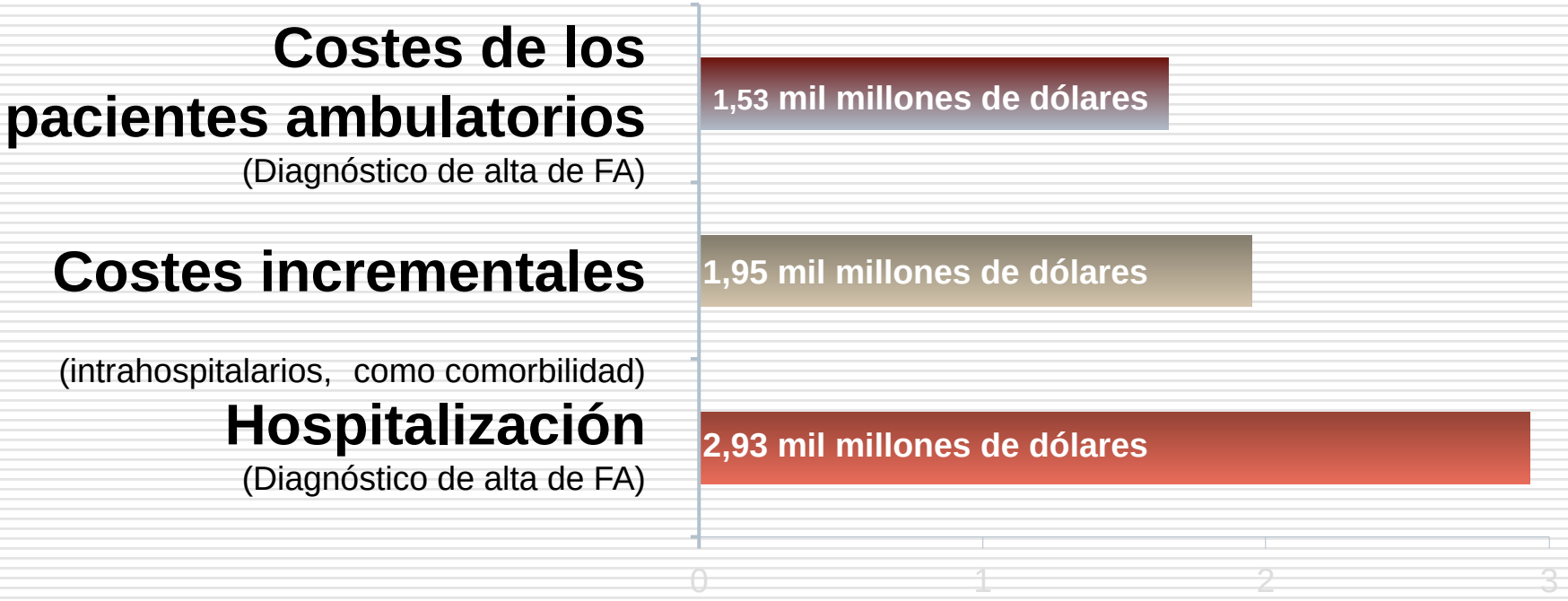
- **El 70% del coste del tratamiento de la FA se debe a la atención hospitalaria y a los procedimientos intervencionistas**



Ringborg *et al. Europace* 2008; 10:403–11.

Las hospitalizaciones representan uno de los principales costes de la atención de los pacientes con FA

- **En el año 2001, la atención de la FA costó aproximadamente 6,65 mil millones de dólares* en los EE.UU., gastos que se destinaron en gran parte a la atención intrahospitalaria**



*** No incluye costes de prescripción**

Coyne K *et al. Value Health* 2006; 9:348-56.

Las hospitalizaciones representan uno de los principales costes de la atención de los pacientes con FA

Las personas de mayor edad más responsables del gasto.

Table 2 AF costs by age group

Age, yrs	% of Population	% of AF Costs
<45	63%	3%
45–64	24%	20%
65–74	6.5%	24%
≥75	6.2%	53%

Coyne K *et al. Value Health* 2006; 9:348-56.

Las hospitalizaciones representan uno de los principales costes de la atención de los pacientes con FA

DATO MUY IMPORTANTE:

No se incluyen costes indirectos.

Ni los debidos a los cuidados directos o crónicos de un posible AVC, ni complicaciones post sangrado.

Coyne K *et al. Value Health* 2006; 9:348-56.

La repercusión de la fibrilación auricular

- Prevalencia
- Impacto en morbilidad
- Impacto en mortalidad
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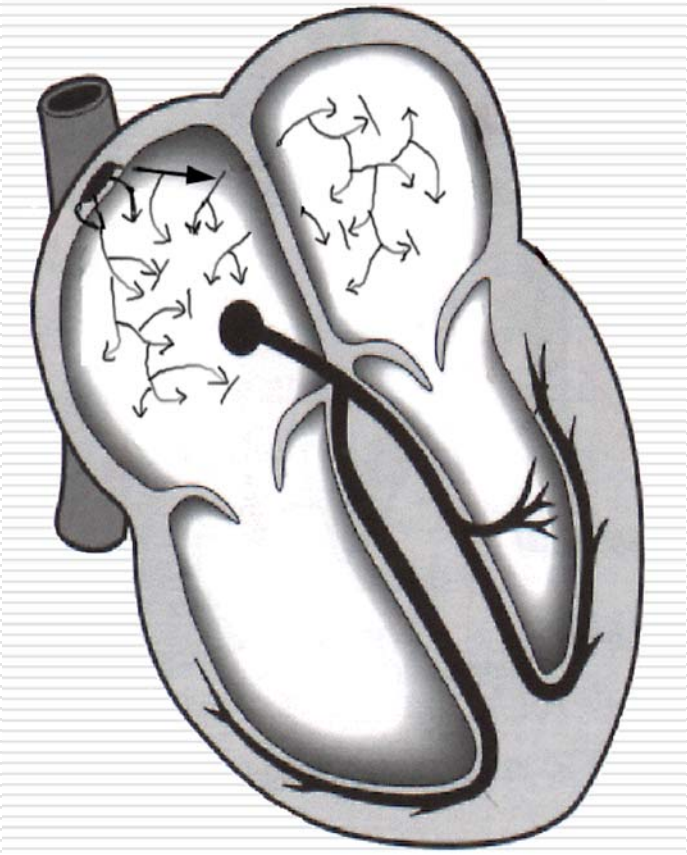
- Impacto en el día a día en el paciente
- Impacto en el día a día del internista




... Y SI NO REENVÍAS ESTA CARTA A POR LO MENOS 15 AMIGOS, TENDRÁS VARIOS AÑOS DE MALA SUERTE...
terra

J Interv Card Electrophysiol (2009) 25:37–42
DOI 10.1007/s10840-008-9318-y

Quality of life in older people with atrial fibrillation

Deirdre A. Lane · Gregory Y. H. Lip

Quality of Life in Atrial Fibrillation: Measurement Tools and Impact of Interventions

MATTHEW R. REYNOLDS, M.D., M.Sc.,*,† ETHAN ELLIS, M.D.,*
and PETER ZIMETBAUM, M.D.*,†

From the *Beth Israel Deaconess Medical Center; and †Harvard Clinical Research Institute, Boston, Massachusetts, USA

QoL in AF. **Quality of life (QoL) is of central importance in atrial fibrillation as both a treatment goal and an endpoint in the evaluation of new therapies. QoL appears to be impaired in the majority of patients with AF. A number of interventions for AF have been shown to improve QoL, including pharmacologic and nonpharmacologic rate control, antiarrhythmic drugs, and nonpharmacologic rhythm control strategies. This paper will review the rationale, design, strengths, and limitations of the questionnaires most commonly used to assess QoL in AF studies, and present QoL outcomes from major studies of AF interventions.**
(J Cardiovasc Electrophysiol, Vol. 19, pp. 762-768, July 2008)

La FA tiene un impacto significativo en la calidad de vida

TABLE 1

Quality of Life Measures Used in Atrial Fibrillation Studies

Generic Measures	Disease-Specific Measures
SF-36	Quality of life index: Cardiac version
SF-12	Karolinska questionnaire
PGWB index (Psychological General Well Being)	Minnesota Living with Heart Failure Questionnaire
McMaster Health Index	Arrhythmia Syndrome scale
WHO-26	Arrhythmia Symptoms Checklist: Frequency and Severity
Quality of life diaries	University of Toronto AF Severity Scale
Nottingham Health Profile	Specific Symptoms Scale
Ladder of Life	Specific Activity Scale
EuroQOL	Quality of Life of Atrial Fibrillation Scale
SF-6	CAST QoL
Health Locus of Control Scale	Symptom Specific Checklist
Hopkins Symptom Checklist	Symptom Severity Questionnaire
Psychosocial Adjustment to Illness scale	
Global Health Status Questionnaire	
Coping Strategies Questionnaire	
Psychosocial Adjustment to Illness	
State-Trait Anxiety Inventory	
Medical Outcomes Study Depression Scale	
Health Status Questionnaire	
Assessment of Quality of Life Instrument (AQoL)	
Sickness Impact Profile	
Duke Activity Status Index	

Al menos 34 escalas diferentes de calidad de vida se han utilizado en los diferentes estudios

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International Journal of Cardiology xx (2009) xxx–xxx

International Journal of Cardiology

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Validating a new quality of life questionnaire for atrial fibrillation patients

Érika O.V. Braganca*, Bráulio Luna Filho, Veruska H. Maria, Daniela Levy, Angelo A.V. de Paola

La FA tiene un impacto significativo en la calidad de vida

- La FA paroxística tiene un impacto significativo en la calidad de vida de los pacientes, con independencia de la frecuencia o la duración de los síntomas.
  - Dos tercios de los pacientes comunicaron que sus síntomas alteraban moderadamente sus vidas.
  - No fue posible distinguir a esos pacientes de los que no informaron alteraciones en función de la incidencia o duración de los síntomas.

1. Van den Burg MP *et al. Neth J Med* 2005;63:170-4.
2. Hamer ME *et al. Am J Cardiol* 1994;74:826-9.

La FA tiene un impacto significativo en la calidad de vida

- **Un tercio de los pacientes con FA experimenta ansiedad o depresión, directamente relacionados con la calidad de vida.**

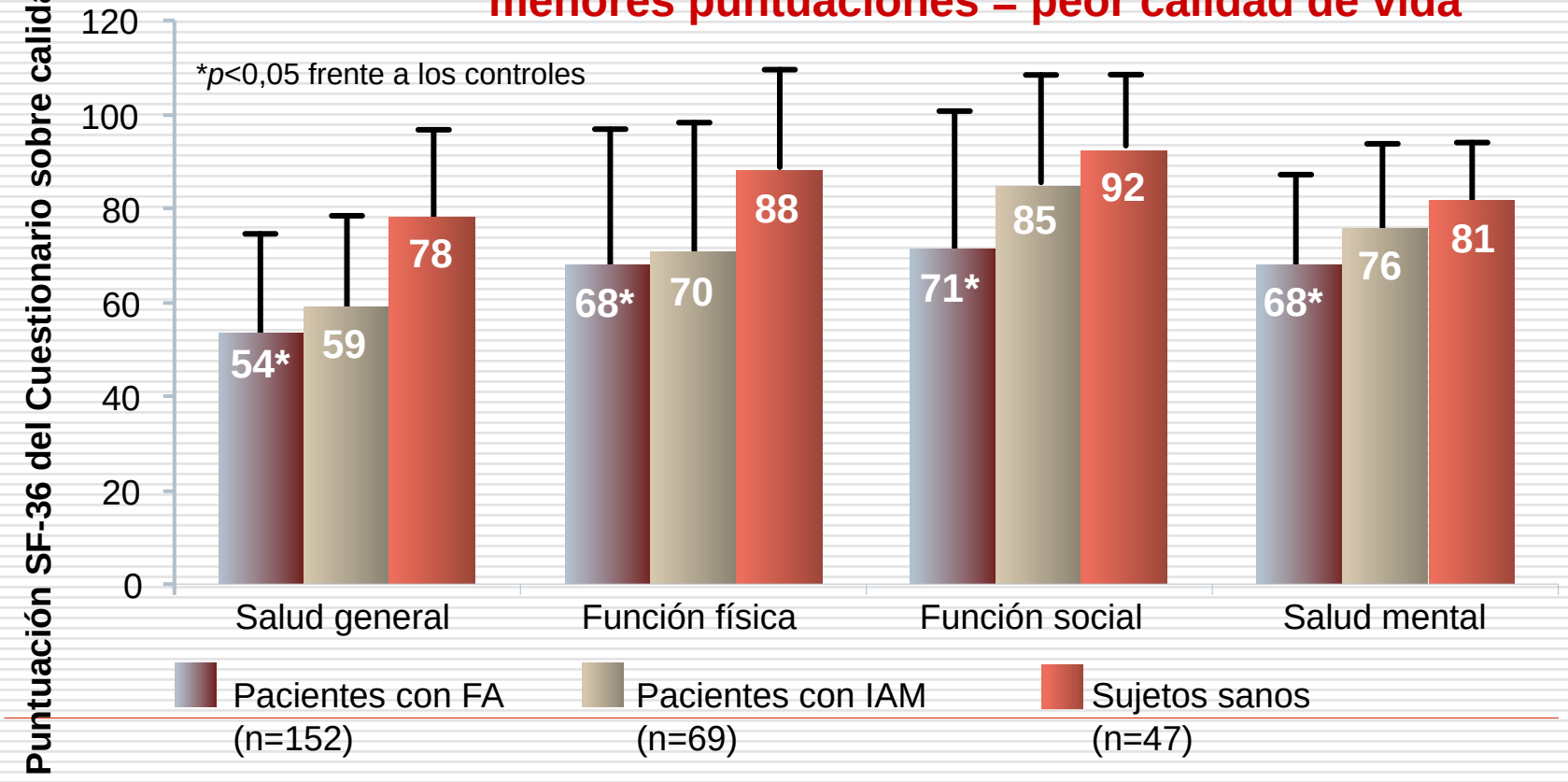
  Thrall G *et al. Chest* 2007;132:1259–64.

- **La alteración de la calidad de vida que se observa en la FA es similar a la de la ICC, el IAM y la angioplastia.**

  Dorian P *et al. J Am Coll Cardiol*. 2000;36:1303-9

La FA afecta negativamente a la calidad de vida

- La calidad de vida fue significativamente peor en los pacientes con FA



Dorian P *et al. J Am Coll Cardiol*. 2000;36:1303-9.

La FA tiene un impacto significativo en la calidad de vida

Influence of age, sex, and atrial fibrillation recurrence on quality of life outcomes in a population of patients with new-onset atrial fibrillation: The Fibrillation Registry Assessing Costs, Therapies, Adverse events and Lifestyle (FRACTAL) study

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Background Most quality of life (QoL) data in AF have been collected from clinical trial patients. We sought to characterize symptoms and QoL in a large inception cohort of unselected patients with AF and explore the impact of age, sex, and AF clinical course on QoL measures over time.

Methods We collected symptom and QoL data on 963 patients with new onset AF enrolled in a multicenter observational registry. Patients were primarily managed with pharmacologic therapy and cardioversion. Quality of life instruments including the Medical Outcomes Study Short Form-12, University of Toronto AF Severity Scale, and the AF Symptom Checklist were completed at baseline and repeated over 2.5 years. Time-weighted QoL summary scores over the first year were calculated for each patient. Factors associated with those summary scores were explored in multivariable analyses.

Results Quality of life was moderately impaired at baseline, but quickly approached population norms and remained stable thereafter. After multivariable adjustment, female sex was strongly associated with higher symptom scores and lower QoL scores. Older (age >65 years) patients reported less prominent disease-specific impairment in QoL than younger patients. In part because 73% of patients appeared to maintain sinus rhythm for the first year, AF clinical course had a comparatively small impact on QoL during this timeframe.

Conclusions Quality of life is impaired in newly diagnosed patients with AF, but improves to normal levels with standard treatments. Within the first year after diagnosis, sex, age, and comorbid conditions are more strongly associated with QoL outcomes than the clinical course of AF itself. (Am Heart J 2006;152:1097-103.)

Peor calidad de vida: mujeres y > 65 años

La FA tiene un impacto significativo en la calidad de vida

TABLE 2
Selected Quality of Life Studies in Atrial Fibrillation

Trial Name	Population	Study Design	Measure of QoL	Results
Anti-Arrhythmic Drug Studies				
CTAF[1]	264 patients with recent paroxysmal or persistent AF without prior AAD exposure	Randomized (2:1:1) to amiodarone, sotalol, or propafenone	SF-36, Symptom Checklist, Duke Activity Status Index, University of Toronto AF Severity Scale	Modest improvements in SF-36 PCS and MCS scores and ~20% reduction in Symptom Checklist scores. No differences between groups, despite less AF in amio group
SAFE-T[34,35]	665 patients (99% men) with persistent AF	Randomized to amiodarone, sotalol, or placebo. Those in AF after 4 weeks were electrically cardioverted	SF-36, Symptom Checklist, Specific Activity Scale, University of Toronto AF Severity Scale	By intention to treat, no differences between groups at 1 year except for decreased mental health score in amio group
Rate Versus Rhythm Control Studies				
PIAF[10,16]	252 patients with AF between 7 and 360 days duration	Randomized to rhythm control (amiodarone +/− cardioversion) versus rate control. QoL data obtained at baseline and 12 months	SF-36	4/8 subscales improved in rhythm control versus 6/8 in rate control. No significant differences observed between groups
STAF[23]	AF for >4 weeks, excluding those with low and very high risk of recurrence (N = 200)	Randomized to rhythm control (cardioversion + AAD) versus rate control (drugs). QoL data obtained at baseline and 12 months	SF-36	At 12 months, 2/8 subscales improved in rhythm control group versus 5/8 in rate control group. No overall between-group differences
RACE[24]	352 patients with persistent AF included in the RACE study	Randomized to rate (drugs) or rhythm control (cardioversion, AADs). QoL data collected at baseline, 1 year, and 24–36 months	SF-36	QoL similar between groups at study end. Rate control group had improvement in 3 subscales versus 0 subscales in rhythm control group
AFFIRM[7]	25% of AFFIRM sites participated in QoL substudy (N = 716)	Patients randomly assigned to rate or rhythm control group. QoL data collected at baseline, 2 months, 12 months, and annually for 4 years	Perceived health, Ladder of life, SF-36, QoL index, Symptom Checklist	Quality of life scores improved modestly and to a similar degree in rate and rhythm control groups

AAD = antiarrhythmic drug; PCS = physical component summary score; MCS = mental component summary score.

Mejora de la calidad de vida con ambas estrategias sin diferencias entre ellas.

La FA tiene un impacto significativo en la calidad de vida

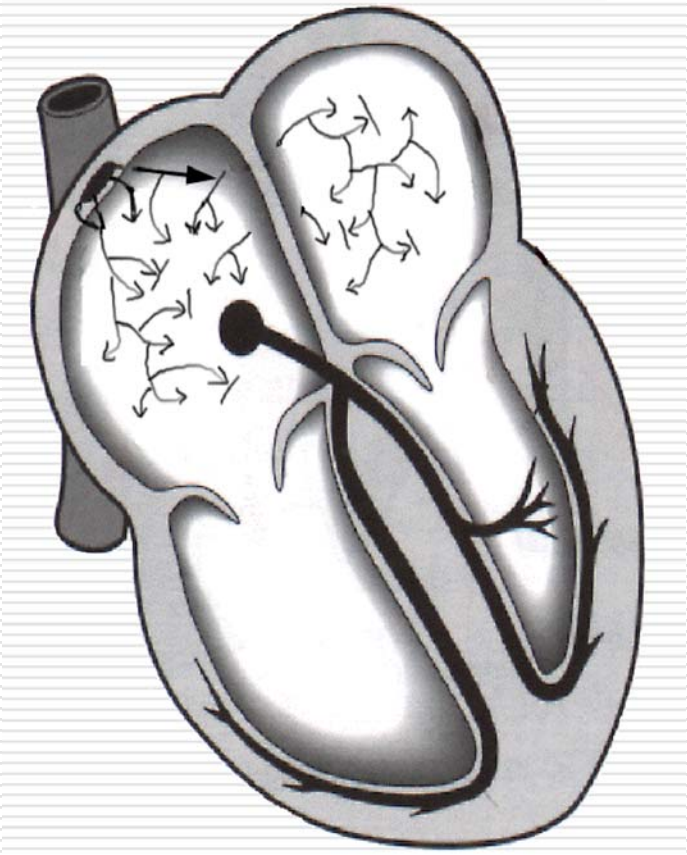
AF Catheter Ablation Studies with Quality of Life Assessment

Authors	Population	Study Design/ Ablation Approach	Measure of QoL	Results
Nonrandomized Series				
Erdogan *et al.*[38]	30 patients with paroxysmal AF refractory to multiple AADs	Linear RF ablation in the right atrium only ("catheter Maze"). QoL data obtained pre- and 3, 6, 9, 12, 24, 36 months postablation	SF-36, symptom specific checklist (locally derived)	Patients without AF recurrence (9/30) had statistically significant improvements in all eight SF-36 subscales over 2 years. Pts with AF recurrence had little change
Goldberg *et al.*[39]	33 patients with paroxysmal AF who failed multiple AADs	RF ablation of focal triggers in pulmonary veins and RA. QoL measures obtained at baseline, 1, and 3 years of follow up	SF-36	At 1 and 3 years post-ablation, significant improvements seen in all SF-36 scales except bodily pain
Pappone *et al.*[41]	589 ablation patients with drug-refractory AF (70% paroxysmal), compared with 582 patients who declined ablation	109 ablated and 102 medically treated patients did QoL surveys every 3 months for 1 year. Patients were treated with circumferential isolation of all PVs using RF	SF-36	PCS and MCS scores significantly rose from ~40 to ~50 within 6 months after ablation, but did not change in reference cohort treated with drugs
Hsu *et al.*[40]	58 pts with CHF, LVEF <45% and AF (>90% persistent or permanent)	Cohort matched (by age, sex, AF type) to additional 58 pts without CHF. RF ablation: PVI, usually with linear in ablation in LA roof and/or mitral isthmus	SF-36, Symptom Checklist	Significant improvements in Symptom Checklist and SF-36 scores reported for both groups after ablation. PCS/MCS increased 24/21 points in CHF group, 18/14 points in control group
Chen *et al.*[37]	377 consecutive patients with symptomatic AF refractory to AADs. Study focused on 94 patients with LVEF <40%	Ostial PVI performed with closed internally irrigated RF catheter; 10% also underwent cavotricuspid isthmus ablation	SF-36	Significant improvement in on all SF-36 subscales 6 months following PVI irrespective of LV function. Scores more than doubled on most scales
Weerasooriya *et al.*[43]	63 consecutive patients with symptomatic paroxysmal AF refractory to ≥2 AADs	PVI plus linear ablation in mitral isthmus and cavotricuspid isthmus using externally irrigated RF catheter. QoL data collected at baseline, 3 and 12 months	SF-36, Symptom Checklist	Significant improvement in 8/8 SF-36 subscales and Symptom Checklist scores at 3 and 12 months postablation. Largest changes in role physical (36 points) and bodily pain (31 points) scales
Tondo *et al.*[42]	105 patients with paroxysmal and persistent (75%) AF refractory to AADs. 40 patients with LVEF <40% compared to 65 without	PV "vestibule" ablation plus linear ablation in mitral isthmus and cavotricuspid isthmus using externally irrigated RF. QoL collected at baseline and 6 months	SF-36	Improvement in at least 6 SF-36 measures 6 months after ablation. Improvements similar whether or not LV dysfunction present
Randomized Studies				
Wazni *et al.*[44]	70 patients with at least monthly symptomatic PAF for at least 3 months and no prior treatment with AADs	Patients randomized to antral PVI using RF (8 mm tipped catheter) or AAD (flecainide or sotalol). QoL data obtained at enrollment and 6 months	SF-36	Improvement in QoL significantly greater (by 6–20 points) in PVI group than AAD group in 5/8 subscales of the SF-36
Oral *et al.*[15]	146 patients with "chronic" AF	Randomly assigned to 1–2 cardioversions over 3 months or ablation (circumferential PVI + linear ablation in LA roof and mitral isthmus with 8 mm RF catheter). Both groups received amiodarone for 3 months	Symptom Severity Questionnaire (locally derived, 5 symptoms)	12 months after ablation, symptom scores fell from 17±4 to 6±2 in patients without AF recurrence and from 17±4 to 12±4 in patients with AF recurrence. Recurrence less common with ablation. High rate of crossover to ablation

Mejora de la calidad de vida después ablación.

La repercusión de la fibrilación auricular

- Prevalencia
- Impacto en morbilidad
- Impacto en mortalidad
- Impacto económico
- Impacto en el día a día en el paciente
- Impacto en el día a día del internista



Internista

El médico especialista en la persona enferma

La medicina interna es una especialidad de larga tradición que se dedica a la atención integral del enfermo adulto. La amplia formación del internista y su conocimiento científico le permiten atender los problemas clínicos de la mayoría de los pacientes que se encuentran ingresados en un hospital.

Impacto en el día a día del internista

SEMI Sociedad Española de Medicina Interna

Impacto en el día a día del internista

La FA es una situación comórbida que requiere una valoración integral del paciente, en todas sus dimensiones, papel en que el internista se mueve con facilidad.

Dr. Jordi Forteza-Rey (2004).

ORIGINALES *Med Clin (Barc)* 2002;118(16):605-10

La insuficiencia cardíaca en los servicios de medicina interna (estudio SEMI-IC)

Grupo de Trabajo de Insuficiencia Cardíaca de la Sociedad Española de Medicina Interna (SEMI)

Impacto en el día a día del internista

FUNDAMENTO: El perfil de los pacientes con insuficiencia cardíaca (IC) varía ampliamente en sus características según el ámbito de atención de esta enfermedad. Desde el Grupo de Trabajo de Insuficiencia Cardíaca de la Sociedad Española de Medicina Interna (SEMI) se planteó un estudio multicéntrico para definir las características de los pacientes ingresados por esta enfermedad en los servicios de medicina interna españoles.

PACIENTES Y MÉTODO: Registro nacional en el que participaron voluntariamente 51 centros de toda España y que incluyó a 2.145 pacientes con esta enfermedad.

RESULTADOS: Los pacientes presentaron una media de 77,2 años de edad. El 57,3% fueron mujeres y el 42,7%, varones. Existía un elevado porcentaje de analfabetismo y nivel cultural bajo (58,9%), así como un elevado número de pacientes con cierto grado de incapacidad física y/o mental (67,4%). Existía una importante comorbilidad. La etiología más frecuente responsable de la IC fue la cardiopatía hipertensiva. Carecía de ecocardiograma una cuarta parte de los pacientes y de aquellos en los que la fracción de eyección del ventrículo izquierdo (FEVI) era conocida algo más de la mitad (53,7%) presentaba fracción de eyección normal. Los fármacos más utilizados al alta hospitalaria fueron los diuréticos (92,5%). Los inhibidores de la enzima conversiva de la angiotensina (IECA) se prescribieron en un 66,1% de los pacientes (73,4% de aquellos con disfunción sistólica conocida). Los bloqueadores beta se utilizaron en un 9,8% (12,3% de aquellos con disfunción sistólica conocida).

CONCLUSIONES: En España, los pacientes hospitalizados en servicios de medicina interna son principalmente mujeres ancianas con FEVI conservada, bajo nivel cultural y alta dependencia física. Este perfil se aleja del de los pacientes estudiados en los ensayos clínicos publicados y obliga a plantearse el abordarje más eficaz en el tratamiento, la hospitalización y el seguimiento clínico de los pacientes con IC.

46% prevalencia de FA

Grupo de Trabajo
GESTIÓN
CLINICA

Estudio de un millón de altas hospitalarias en Medicina Interna

SEMI

Dr. Antonio Zapatero Gaviria
Dra. Raquel Barba Martín
Grupo Gestión FEMI

Resultados

Diagnósticos Secundarios más frecuentes en MI

	Pacientes Medicina Interna	Hospitalización general
Hipertensión arterial	286.495 (29.1%)	20.5%
Diabetes mellitus	255.022 (25.9%)	9.9%
Fibrilación auricular	199.000 (20.2%)	6.8%
Hipercolesterolemia	106.738 (10.9%)	4.1%
Tabaquismo	93.477 (9.5%)	7.2%
Obesidad	67.124 (6.8%)	3.3%
Demencia	56.156 (5.7%)	NC
Alcohol	31.140 (3.2%)	NC

Media de dx: 5.84

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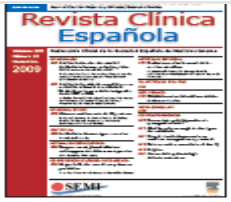

ORIGINAL

Análisis de 2 años de actividad de Medicina Interna en los hospitales del Sistema Nacional de Salud

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PALABRAS CLAVE
Medicina Interna;
Conjunto mínimo básico de datos (CMBD)

Resumen

Introducción. Presentamos un resumen de los resultados de la actividad hospitalaria de los servicios de Medicina Interna (MI) del Sistema Nacional de Salud (SNS), durante el bienio 2005-2006.

Material y métodos. Se analizaron los pacientes ingresados en los servicios de MI de España en los años 2005 y 2006 según los datos obtenidos del conjunto mínimo básico de datos (CMBD), en el que se recogen datos administrativos (edad, sexo, filiación) y clínicos (un diagnóstico principal y hasta 12 diagnósticos secundarios y 19 procedimientos clínicos) de todos los pacientes ingresados en los hospitales públicos y privados de España.

Resultados. Durante este periodo se dieron en nuestro país 7.130.825 altas, ingresando a cargo de MI 1.099.652, (15,4%). Un 53,6% de los pacientes eran varones, la edad media

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Tabla 5 Diagnósticos secundarios más frecuentes

CIE-9	Diagnósticos	N.° de pacientes (%)
401.9	Hipertensión arterial	286.495 (29,1%)
250.0	Diabetes mellitus	255.022 (25,9%)
427.3	Fibrilación auricular	199.000 (20,2%)
272.0, 272.4	Hipercolesterolemia	106.738 (10,9%)
305.1	Tabaquismo	93.477 (9,5%)
278.0	Obesidad	67.124 (6,8%)
290.xx	Demencia	56.156 (5,7%)
303; 305.0; V11.8	Alcohol	31.140 (3,2%)

CIE: clasificación internacional de enfermedades.

Impacto en el día a día del internista

Impacto en el día a día del internista

CONCLUSIONES

- La FA es la arritmia cardíaca sostenida más frecuente.
  - La FA aumenta el riesgo de ACV e insuficiencia cardíaca
  - La FA empeora el pronóstico de los pacientes con comorbilidades
  - La FA duplica el riesgo de mortalidad

CONCLUSIONES

- La FA tiene un impacto socioeconómico significativo.
- La FA afecta negativamente a la calidad de vida de los pacientes que la sufren.
- El internista es el especialista adecuado para el abordaje de la fibrilación auricular y sus comorbilidades.

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Fibrilación auricular en el anciano

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Epidemiology of atrial fibrillation

Michael W. Rich