

***Patología más Prevalente
en la población trabajadora
que requiere
Tratamiento Anticoagulante***

Dr. Andrés Bodegas

Jefe de la Sección de Electrofisiología y Arritmias
Hospital de Cruces



OSALAN
Laneko Segurtasun eta
Ogasunerako Euskal Erakundea
Instituto Vasco de Seguridad y
Salud Laborales



**EUSKO JAURLARITZA
GOBIERNO VASCO**

Biblioteca Bidebarrieta 29.10.15



BILBOKO
MEDIKU ZIENTZIEN
AKADEMIA
**ACADEMIA DE
CIENCIAS MÉDICAS
DE BILBAO**



**SOCIEDAD VASCA
DE MEDICINA DEL TRABAJO**



- TAQUICARDIAS

- Fluter Auricular
- Fibrilación Auricular

- TERAPIA ANTICOAGULANTE



- TAQUICARDIAS

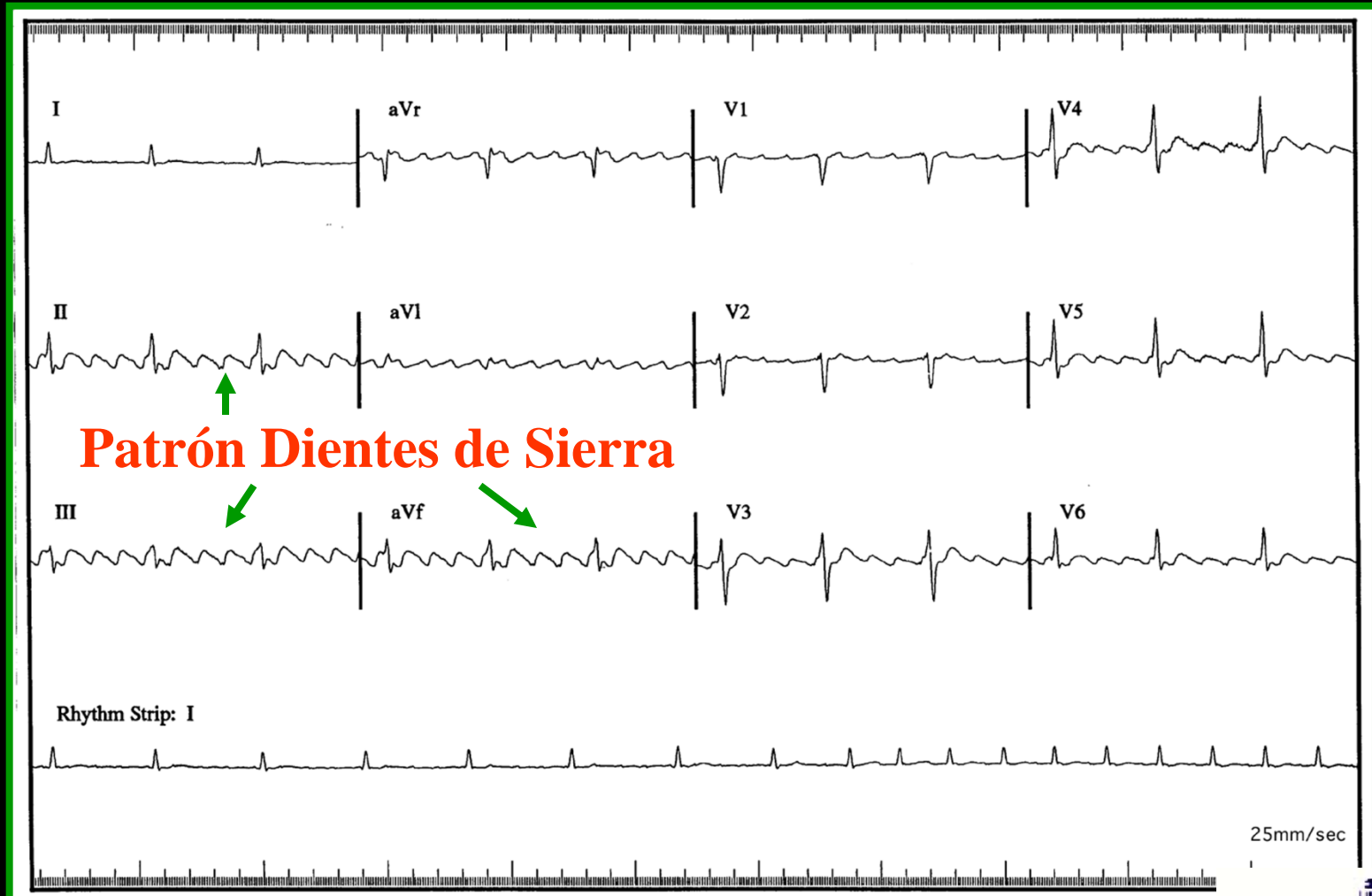
- **Fluter Auricular**

- Fibrilación Auricular

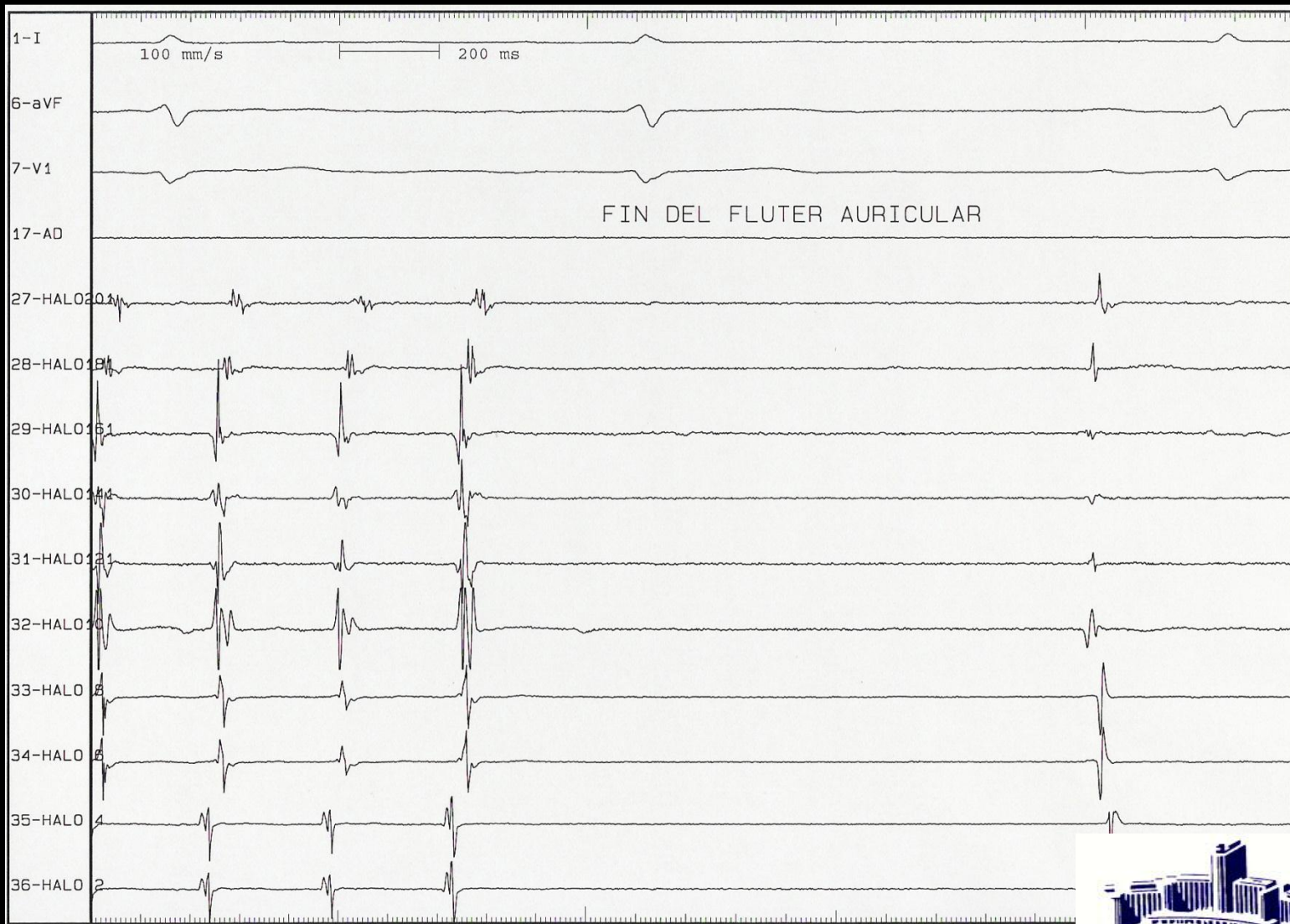
- TERAPIA ANTICOAGULANTE



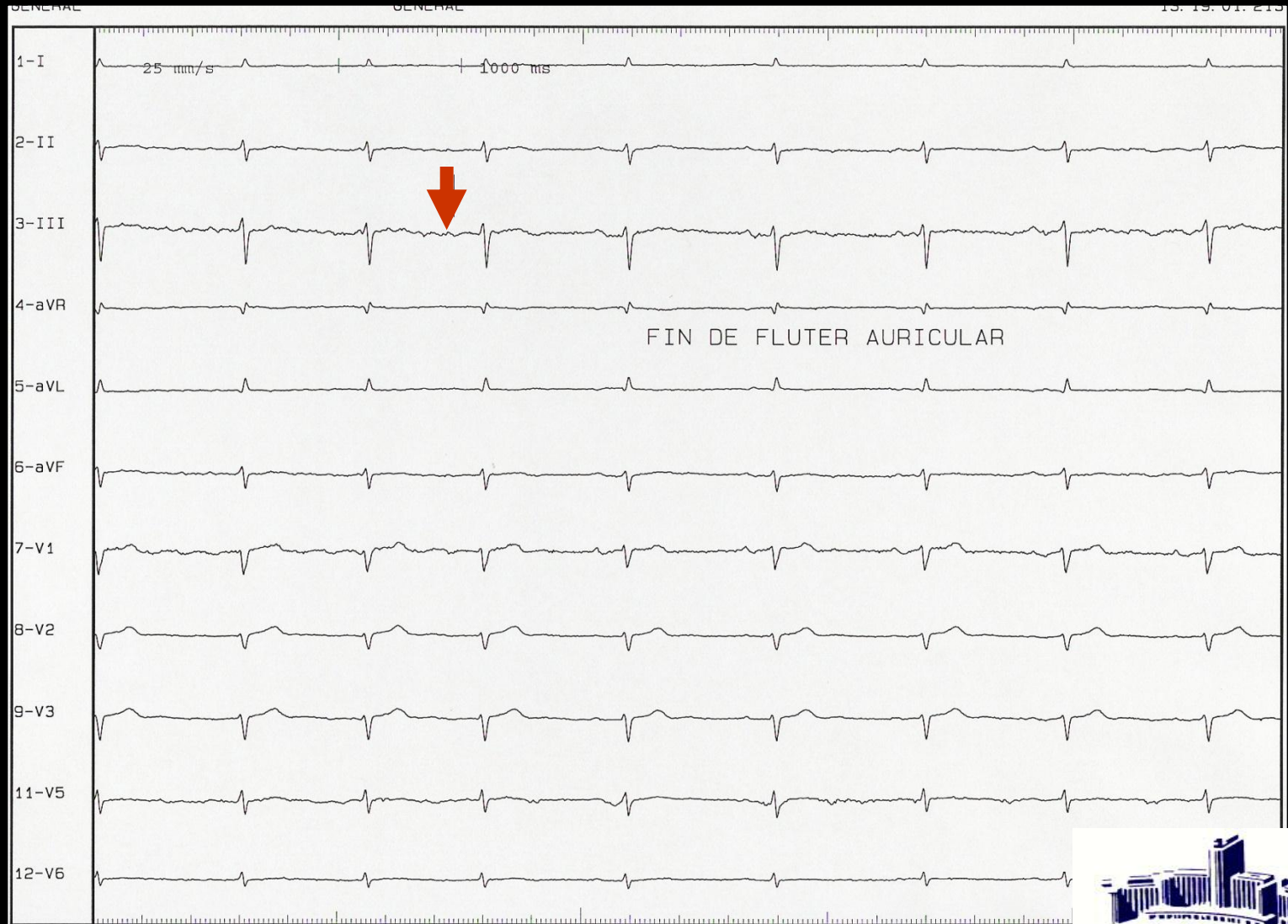
Flutter Auricular



Fluter Auricular

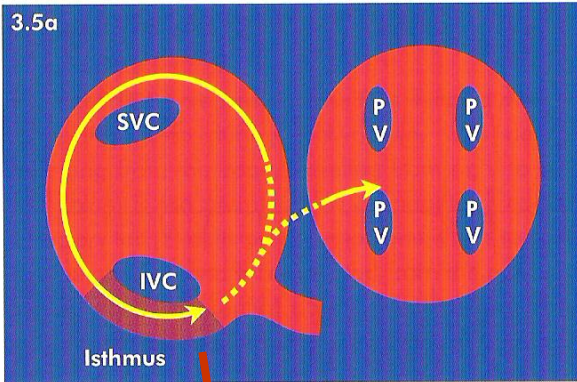


Flutter Auricular

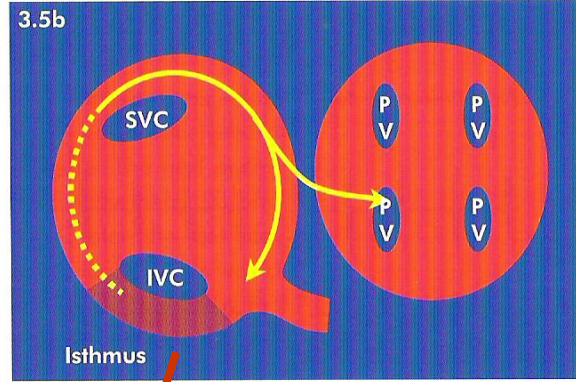


TIPOS de Flutter Auricular

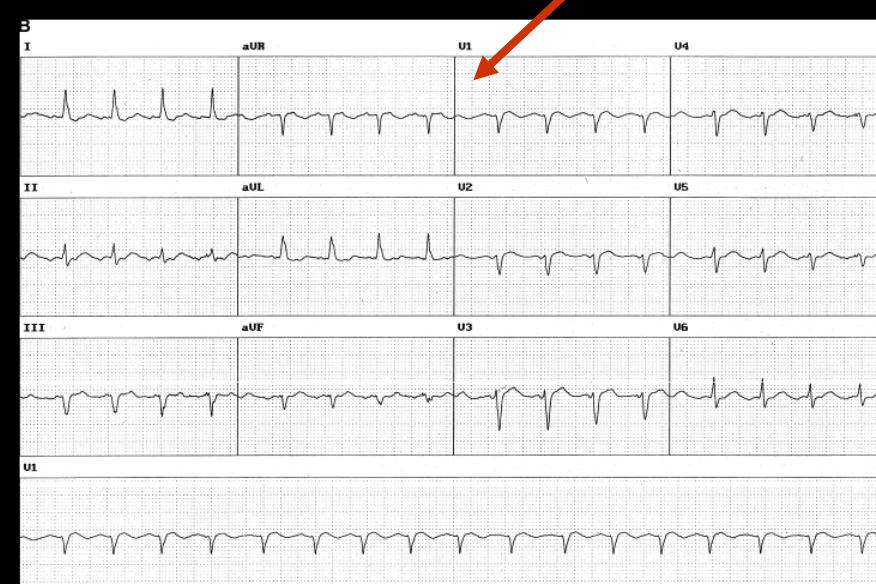
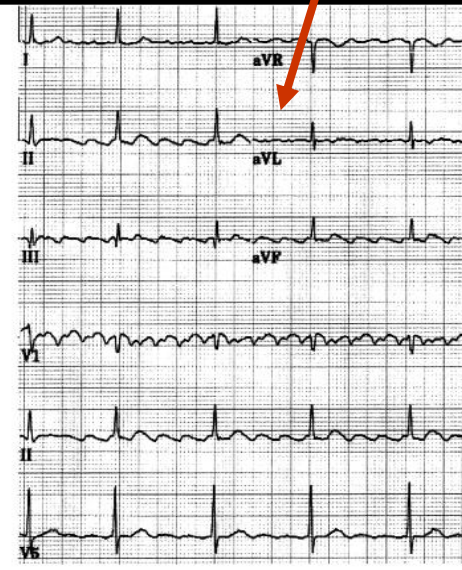
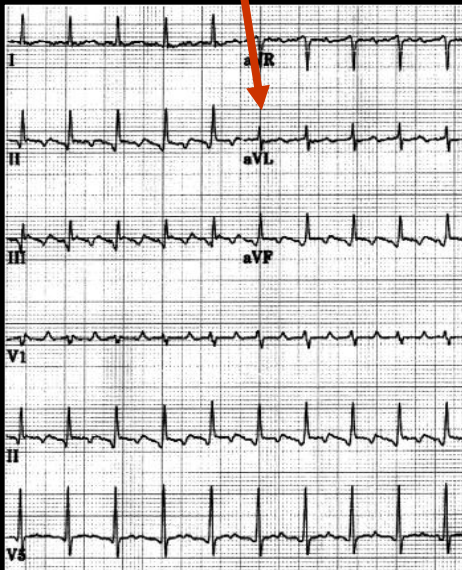
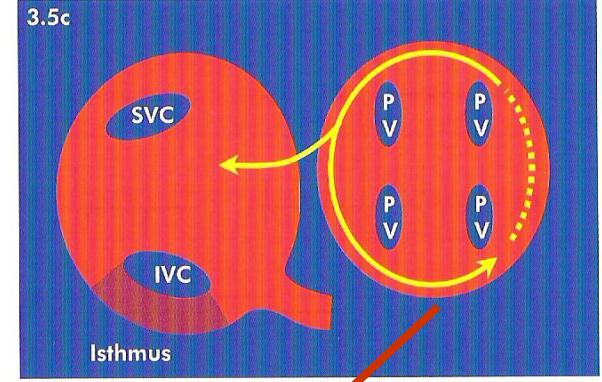
3.5A TYPICAL ATRIAL FLUTTER



3.5B 'CLOCKWISE' ATRIAL FLUTTER



3.5C TRUE ATYPICAL FLUTTER



1 sec

- TAQUICARDIAS

- Fluter Auricular

- **Fibrilación Auricular**

- TERAPIA ANTICOAGULANTE



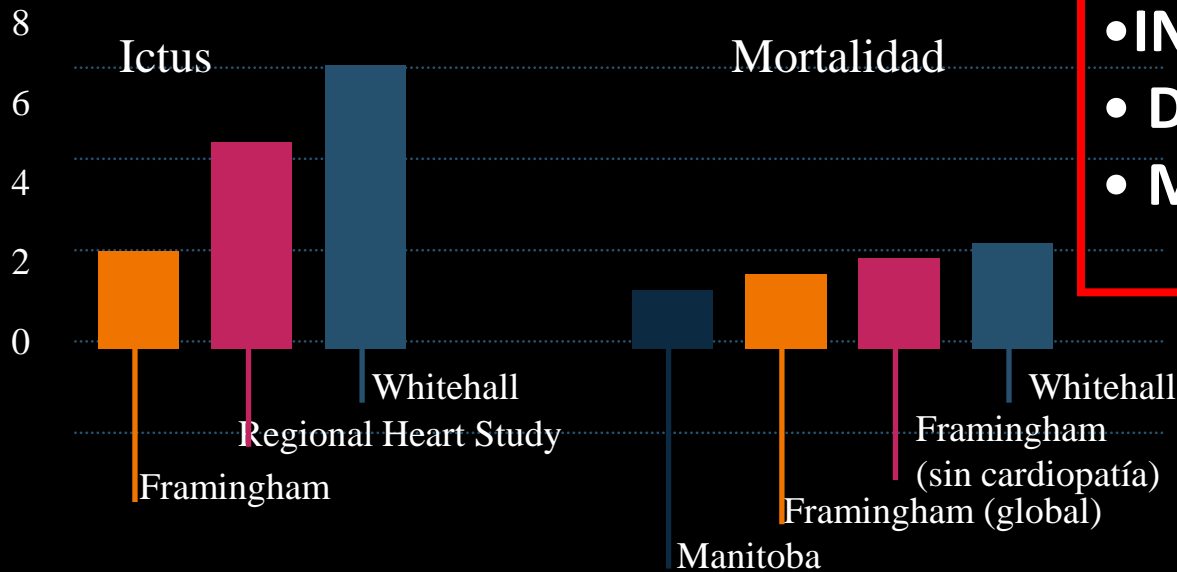
La Fibrilación Auricular

1.- Por qué tratarla



1.- Pronóstico

- 2-7 veces más riesgo relativo de *Ictus*
- Doble de riesgo de *Mortalidad*



Asociación con \uparrow significativo:

- INSUFICIENCIA CARDIACA
- DEMENCIA SENIL
- MUERTE

Misakaya et al. *Circulation* 2006

Wolf PA et al. The Framingham Study. Arch Intern Med 1987; 147: 1561-4.

Regional Heart Study.

Framingham et al. Framingham Heart Study.

Flegel KM et al. Estudio Whitehall.

Krahn AD et al. Estudio Manitoba.



La Fibrilación Auricular aumenta el riesgo de

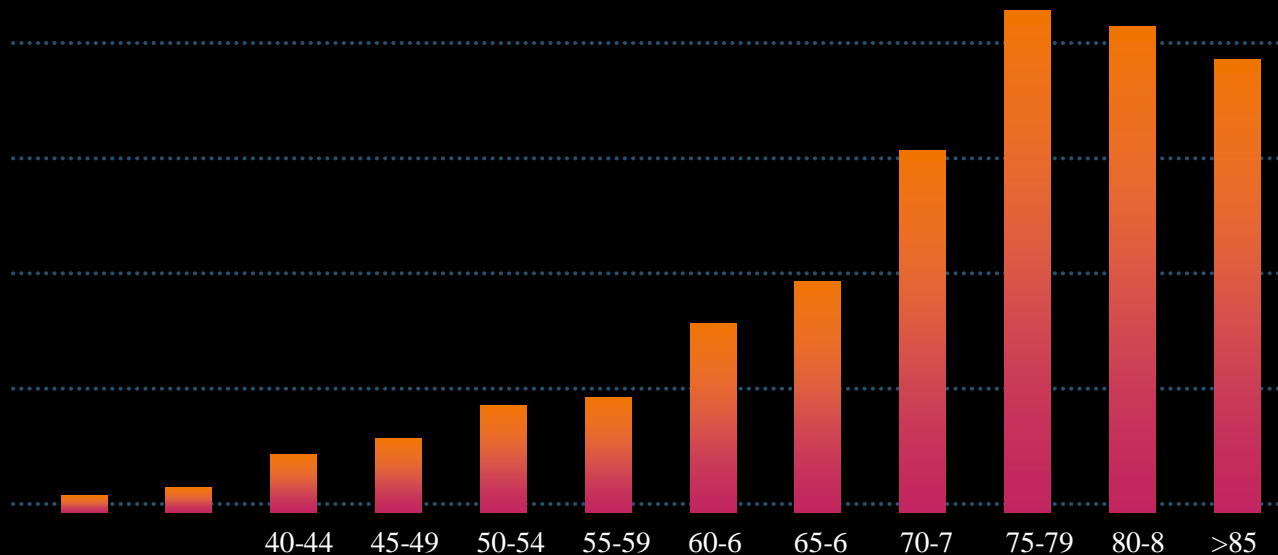
- **RECURRENCIA del ACV**
- **MORTALIDAD después de un ACV**

Estudio 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 año después del ACV	63%	34%	$p < 0,001$



2.- Prevalencia



Feinbers WM, et al. Arch Intern Med 1995; 155: 469-73.

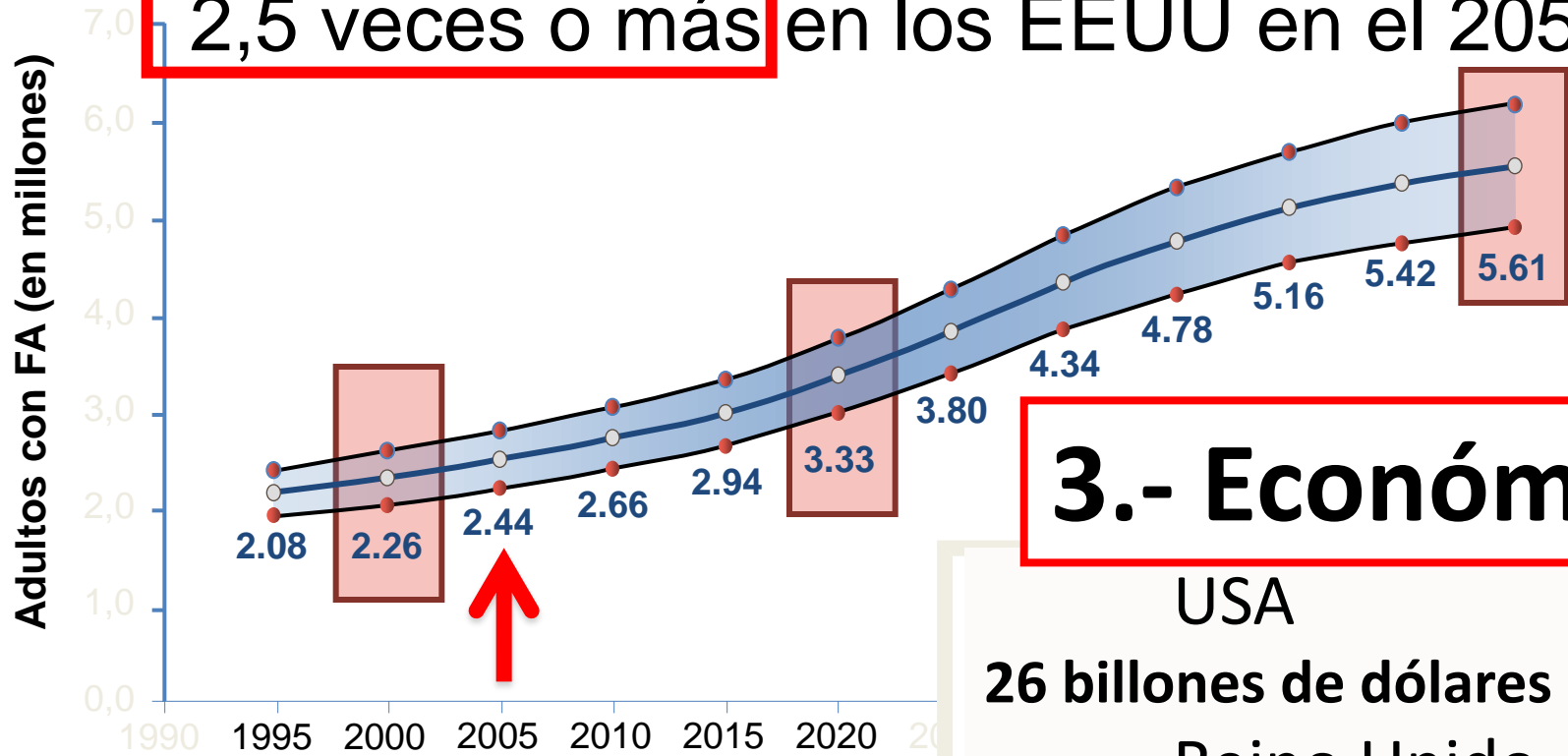
La Fibrilación Auricular afecta:

- . 1-25 adultos > 60 ñ
- . 1-10 adultos > 80 ñ



Se prevé que su Prevalencia aumente

2,5 veces o más en los EEUU en el 2050



3.- Económico

USA

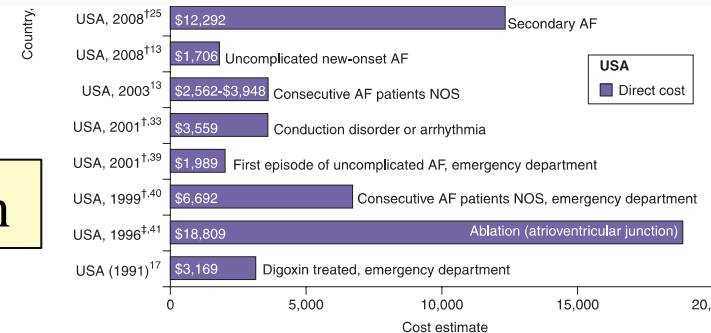
26 billones de dólares (2011)

Reino Unido

0,9-2,4% Dept. Salud (2000)

Fibrilación Auricular

Inpatient cost estimates for atrial fibrillation



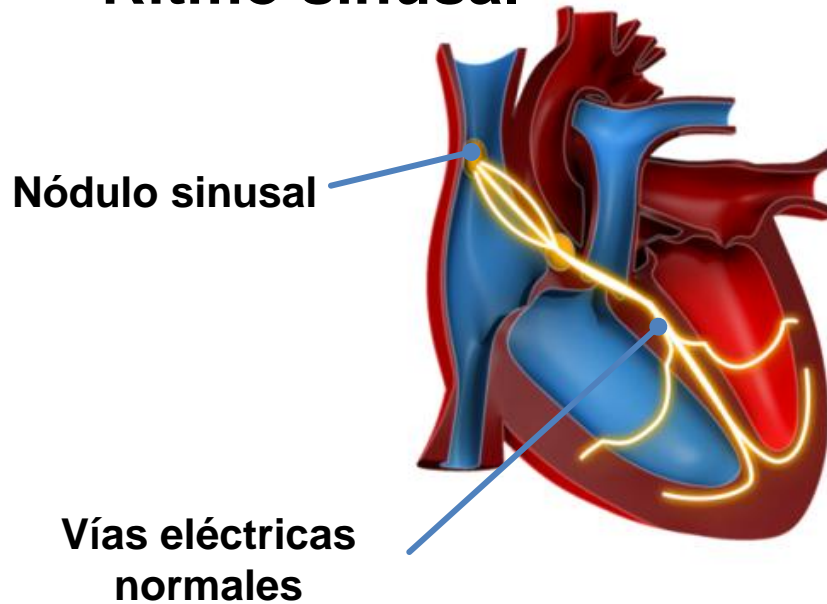
La Fibrilación Auricular

2.- Qué es?

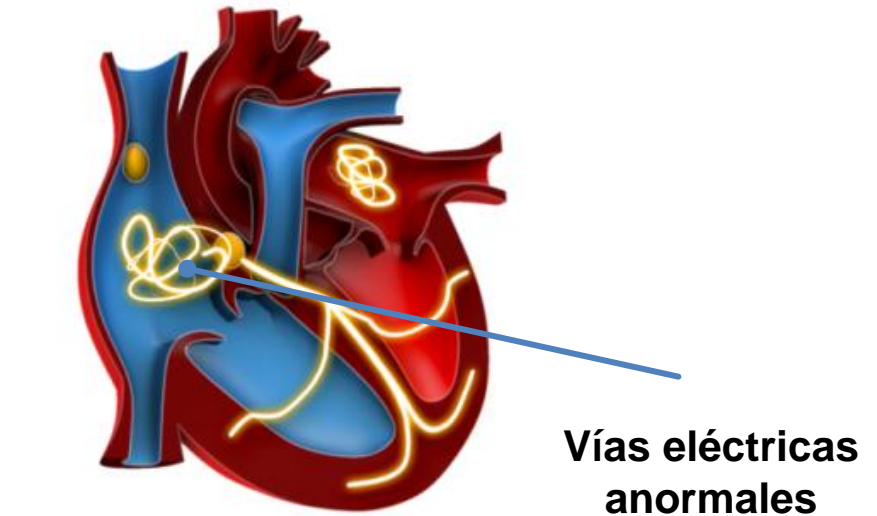


“Múltiples ondas coexistentes causan actividad auricular rápida e irregular (400-600 lpm)...”

Ritmo sinusal



Fibrilación auricular



Patología más prevalente en población trabajadora que requiere tratamiento anticoagulante

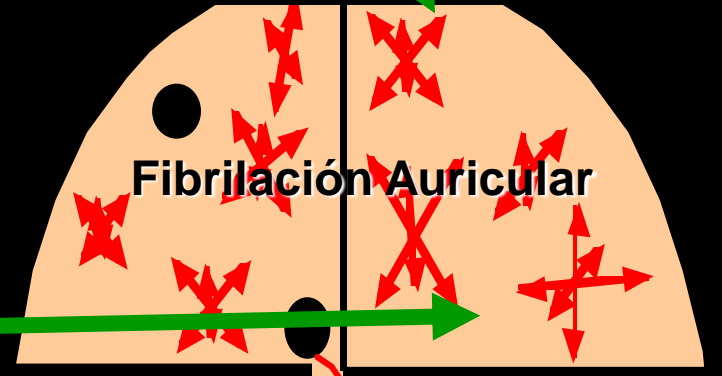
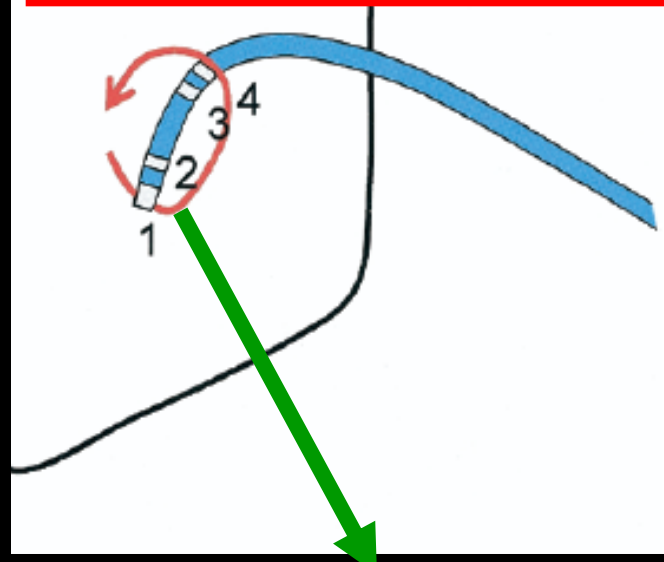
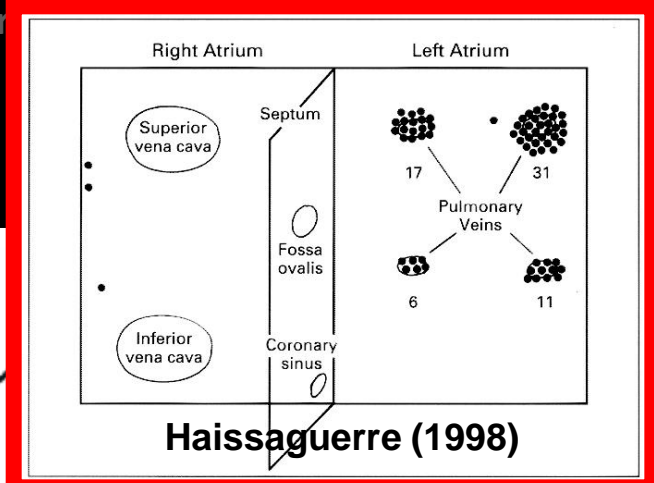
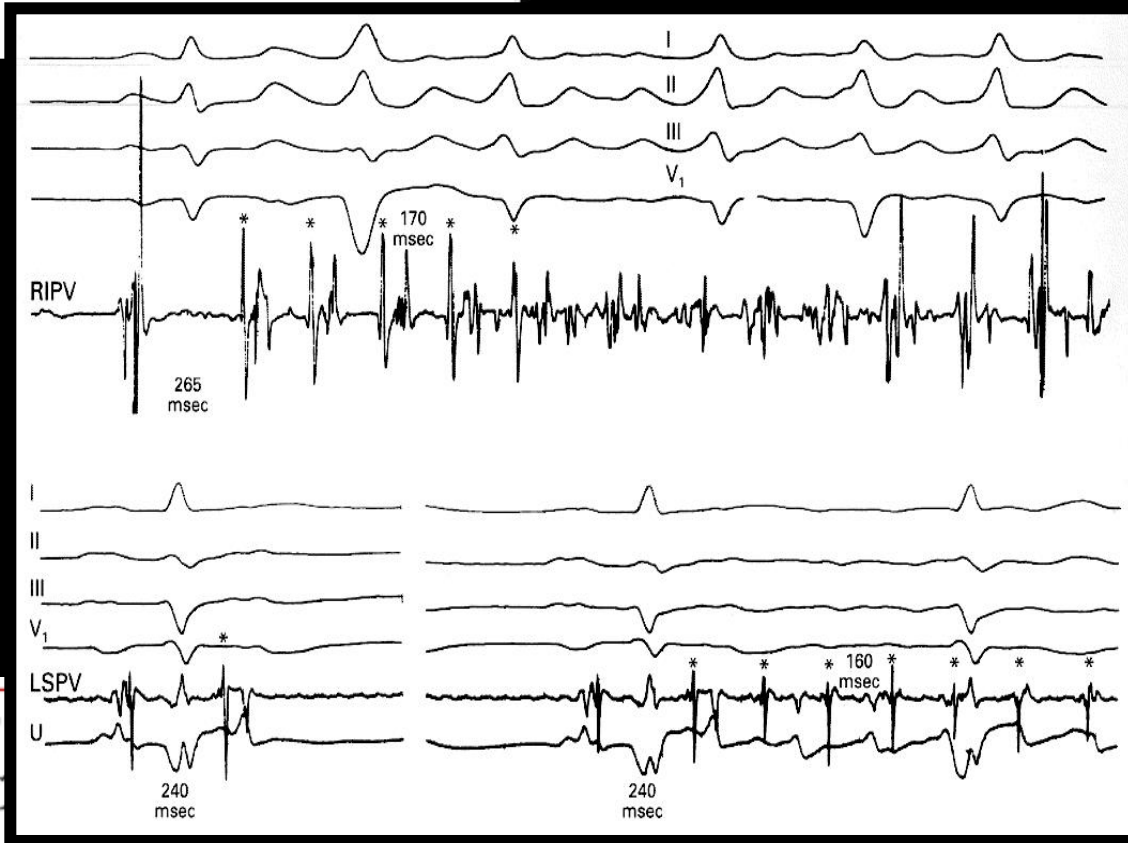
Cómo diagnosticar la Fibrilación Auricular

CARACTERÍSTICAS ELECTROCARDIOGRAFICAS de la Fibrilación Auricular

Ausencia de ondas P

Intervalo RR variable

Patología más prevalente en población trabajadora que requiere



La Fibrilación Auricular

3.- Pero exactamente de qué estamos hablando?



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



Alteraciones histológicas

Inflamación

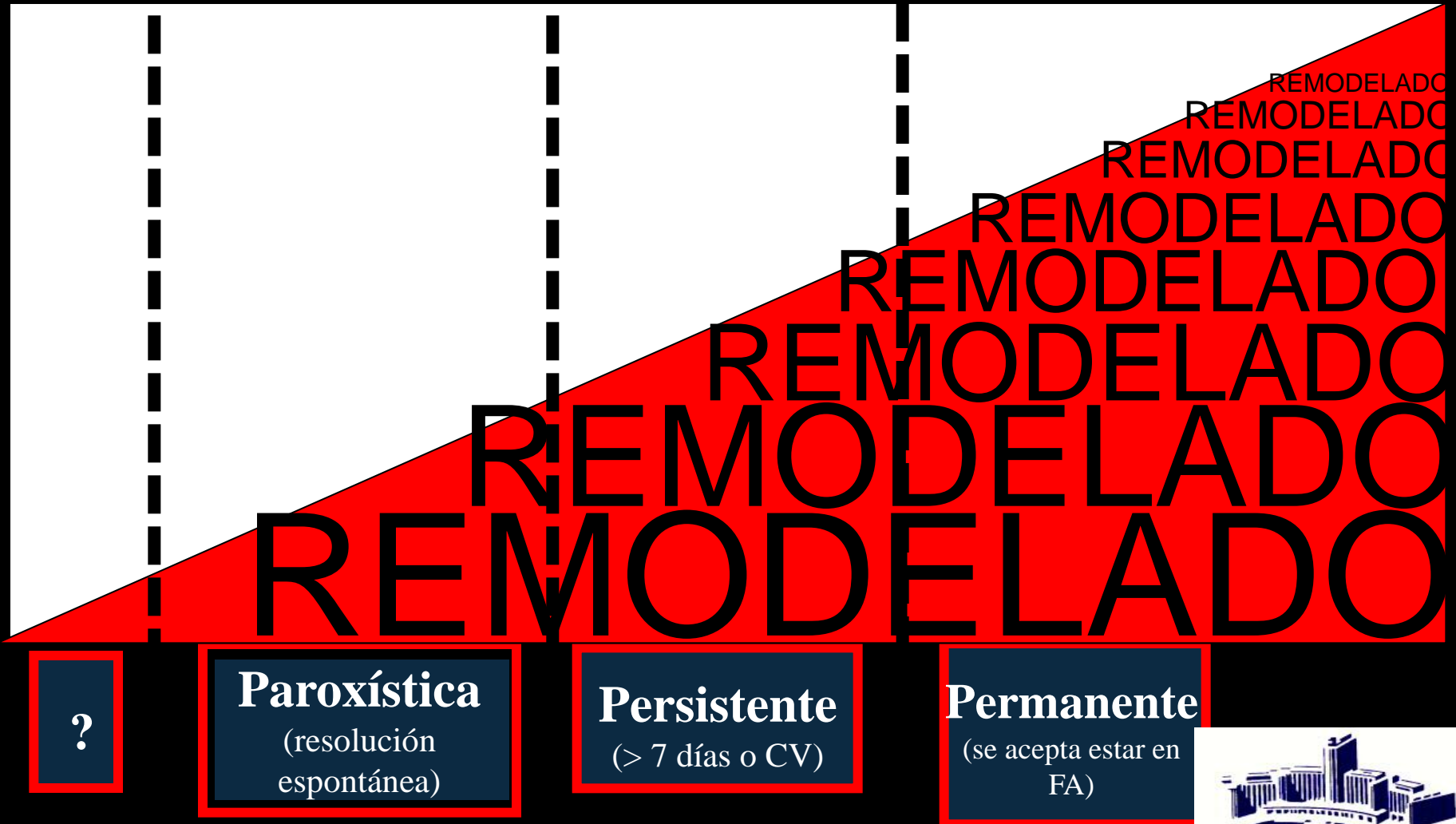
Hipertrofia

Fibrosis

Remodelado



Remodelado en la Fibrilación Auricular

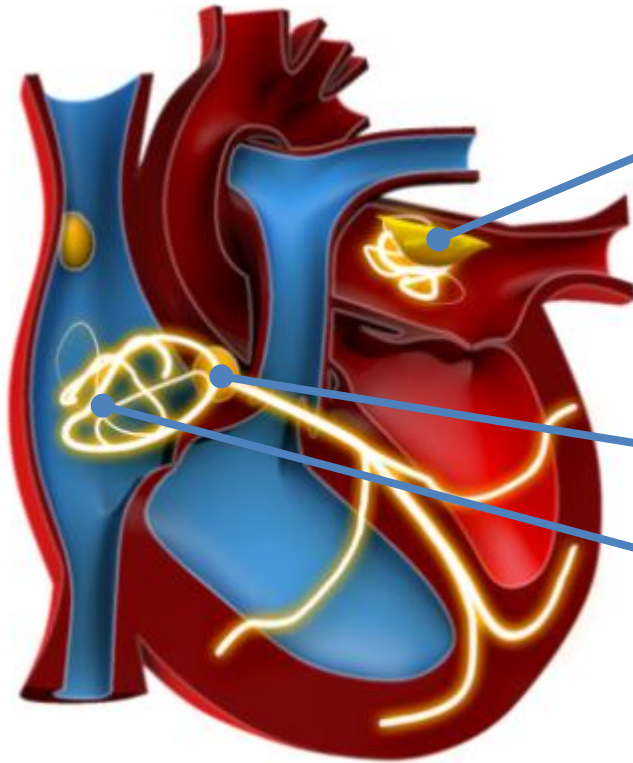


La Fibrilación Auricular

4.- Objetivos del Tratamiento



Estrategias terapéuticas actuales



- Prevención del tromboembolismo

- Control de la frecuencia
- Control del ritmo

Estas estrategias no son excluyentes.



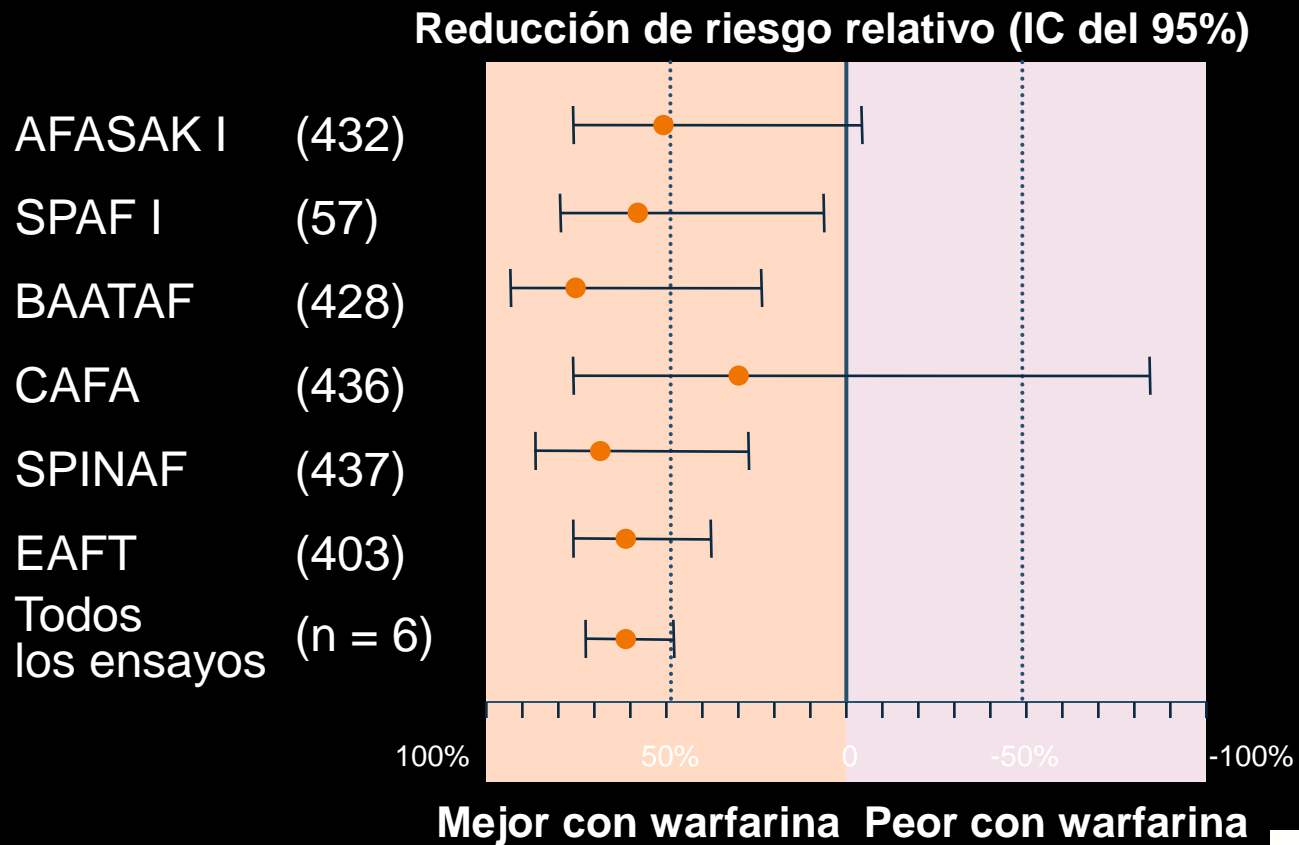
Objetivos del tratamiento de la FA

- **Prevenir los tromboembolismos (AO)**



Tratamiento anticoagulante

Dosis ajustadas de warfarina en comparación con placebo



AHA/ACC/HRS Practice Guideline

2014 AHA/ACC/HRS Guideline for the Management of Patients With Atrial Fibrillation

A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and the Heart Rhythm Society

Developed in Collaboration With the Society of Thoracic Surgeons

Factor de riesgo	Valor
ICC/disfunción VI	1
Hipertensión	1
Edad > 75 años	2
Diabetes mellitus	1
Ictus o AIT previo	2
Enfermedad vascular (*)	1
Edad 65-74	1
Sexo femenino	1
Puntuación máxima	9

(*) IAM previo, arteriopatía periférica, placa ateroma Ao

(c) Adjusted stroke rate according to CHA₂DS₂-VASc score

CHA ₂ DS ₂ -VASc score	Patients (n = 7,329)	Adjusted stroke rate (%/year) ^b
0	1	0%
1	422	1.3%
2	1,230	2.2%
3	1,730	3.2%
4	1,718	4.0%
5	1,159	6.7%
6	679	9.8%
7	294	9.6%
8	82	6.7%
9	14	15.2%

See text for definitions.

^aPrior myocardial infarction, peripheral artery disease, aortic plaque. Actual rates of stroke in contemporary cohorts may vary from these estimates.

^bBased on Lip *et al.*⁵³

Af = atrial fibrillation; EF = ejection fraction (as documented by echocardiography, radionuclide ventriculography, cardiac catheterization, cardiac magnetic resonance imaging, etc.); LV = left ventricular; TIA = transient ischaemic attack.

Factores de riesgo menos validados o con menos poder predictivo

Sexo femenino
Edad entre 65 y 74 años
Cardiopatía isquémica
Tirotoxicosis

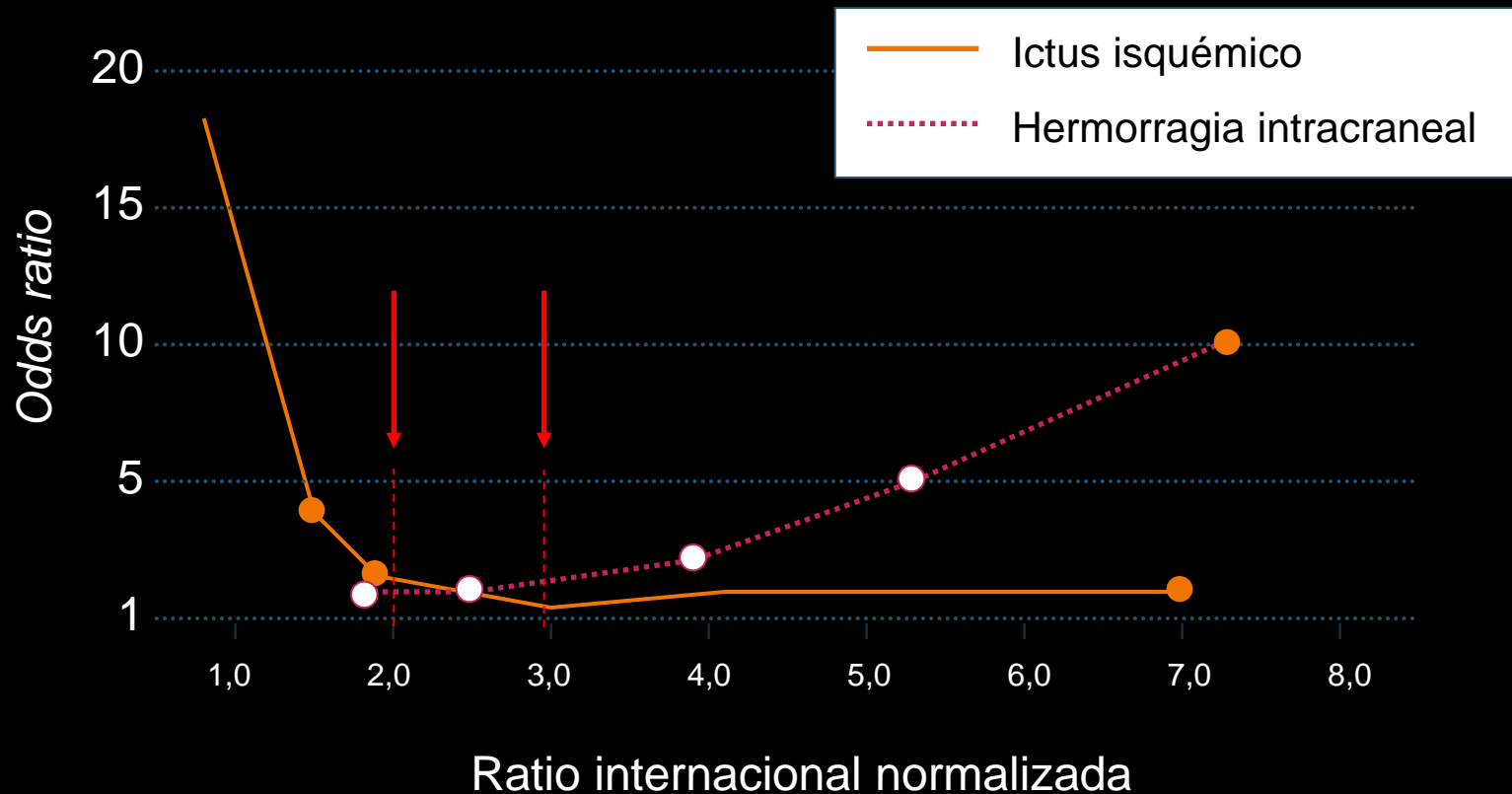
Factores de riesgo moderado

Edad ≥ 75 años
Hipertensión
IC
Fracción de eyección del VI ≤ 35%
Diabetes mellitus

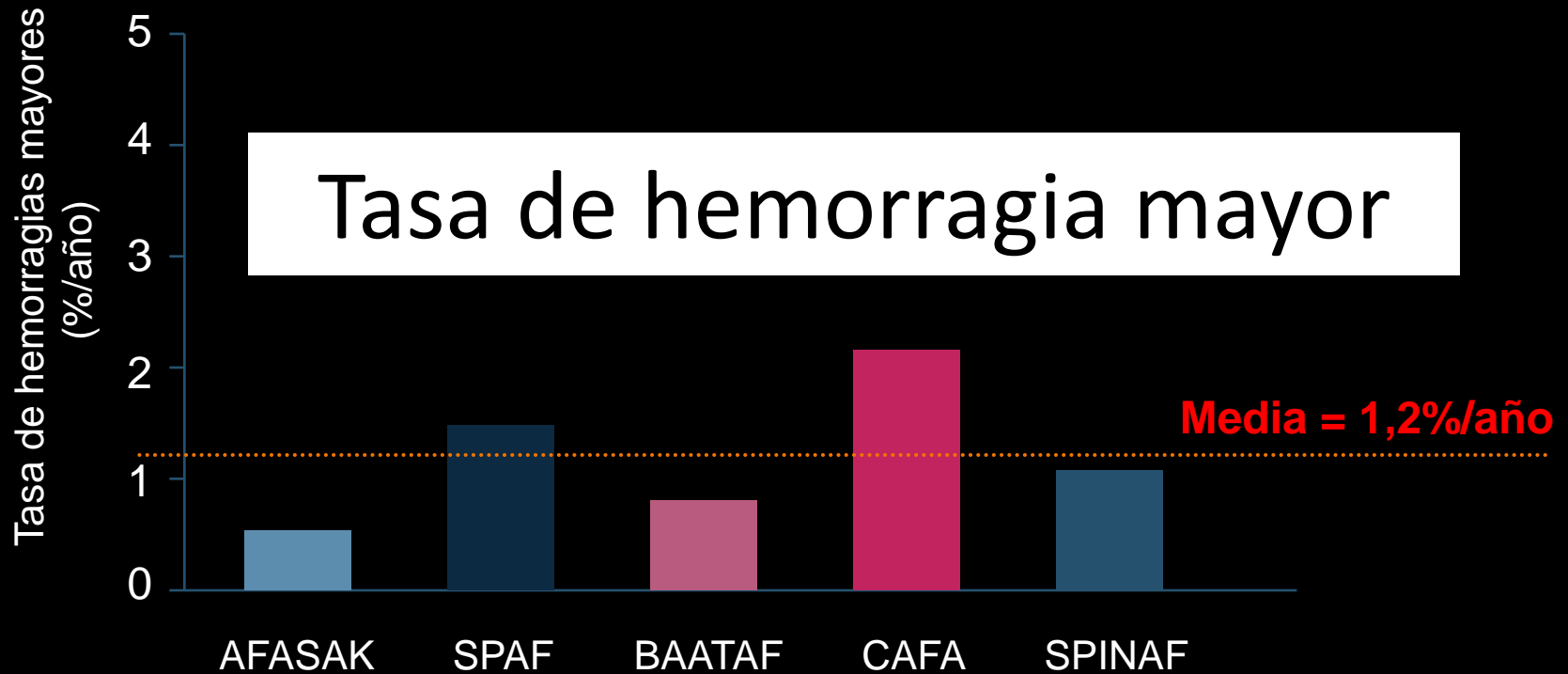
Factores de alto riesgo

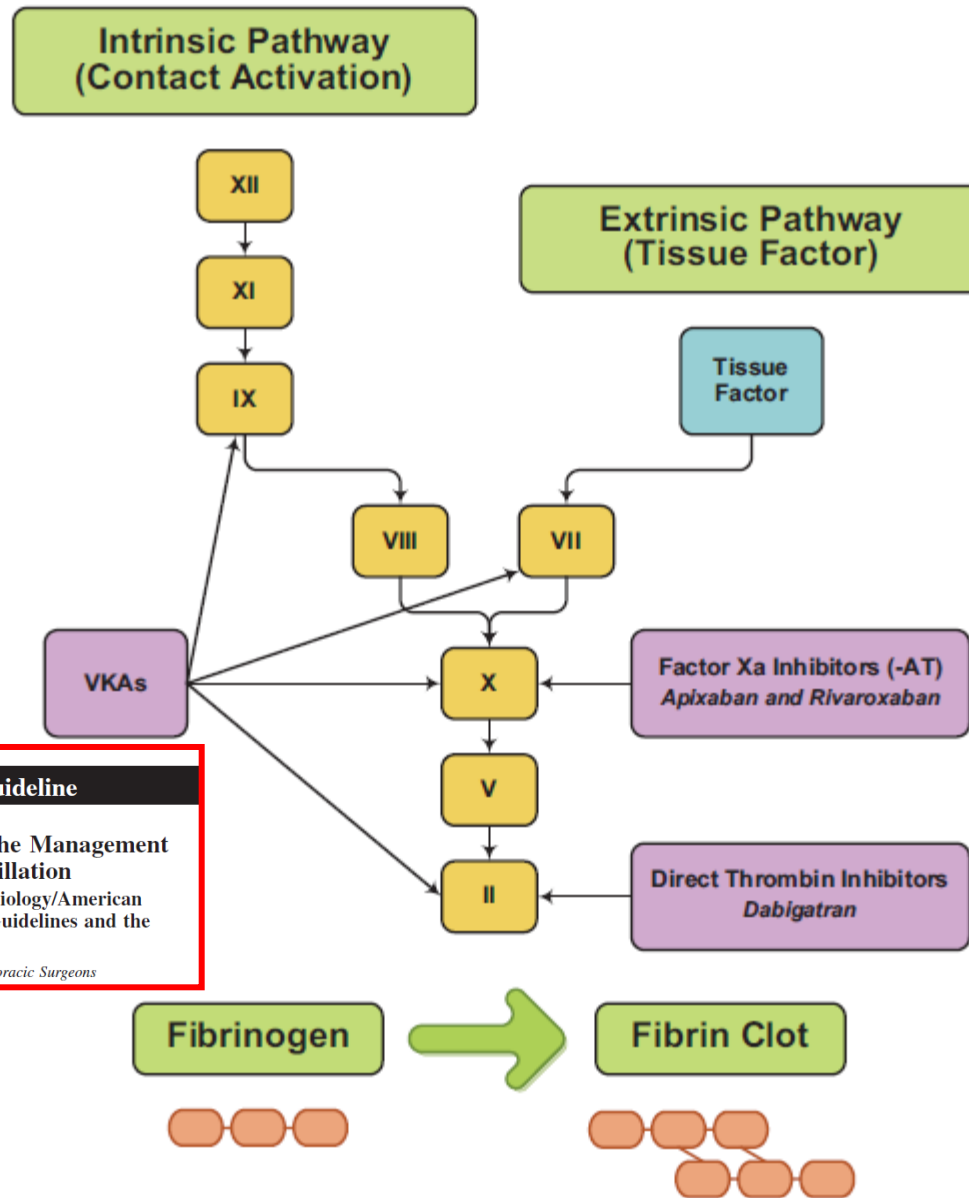
ACV, AIT o embolia previa
Estenosis mitral
Válvula cardiaca protésica^a

Tratamiento anticoagulante



Tratamiento anticoagulante





AHA/ACC/HRS Practice Guideline

2014 AHA/ACC/HRS Guideline for the Management of Patients With Atrial Fibrillation

A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and the Heart Rhythm Society

Developed in Collaboration With the Society of Thoracic Surgeons

Figure 4. Coagulation cascade. AT indicates antithrombin and VKAs, vitamin K antagonists. Adapted with permission from Nutescu et al.²¹³

AHA/ACC/HRS Practice Guideline

2014 AHA/ACC/HRS Guideline for the Management of Patients With Atrial Fibrillation

A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and the Heart Rhythm Society

Anticoagulante	Síndrome coronario agudo o ICP electiva	Fibrilación auricular no valvular
Rivaroxabán	Fase II ATLAS ACS-TIMI 46: publicado, Mega et al ⁴ Fase III ATLAS ACS-TIMI 51: en curso (junio de 2011)	Fase III ROCKET AF: en curso (finales de 2011)
Apixabán	Fase II APPRAISE-1: publicado, Comité de Dirección e Investigadores del APPRAISE, et al ⁵ Fase III APPRAISE-2: en curso (noviembre de 2011)	Fase III AVERROES: cierre en junio de 2010 por superioridad de apixabán Fase III ARISTOTLE: en curso (2011)
Otamixabán	Fase II SEPIA-PCI: publicado, Cohen et al ⁶	— Fase II SEPIA-ACS1 TIMI 42: publicado, Sabatine et al ⁷
Betrixabán	—	Fase II Explore-Xa: completado (véase el texto)
Edoxabán tosilato	—	Fase II: completado (véase el texto) Fase III ENGAGE AF-TIMI 48: en curso (inicio de 2012)
Dabigatrán etexilato	Fase II RE-DEEM: completado (véase el texto)	Fase II PETRO: publicado, Ezekowitz et al ⁸ Fase III RE-LY: publicado, Connolly et al ⁹
Tecarfarina	—	Fase IIa: publicado, Ellis et al ¹⁰ Fase II EmbraceAC: completado (véase el texto)

Objetivos del tratamiento de la FA

- Restaurar y mantener el ritmo sinusal
(Control de Ritmo)



Restaurar y mantener el ritmo sinusal (control de ritmo)

Cardioversión eléctrica



- Respuesta ventricular muy rápida que no responde al tratamiento en pacientes con isquemia, hipotensión sintomática, angina o insuficiencia cardiaca
- Con preexcitación en taquicardia rápida o inestabilidad hemodinámica

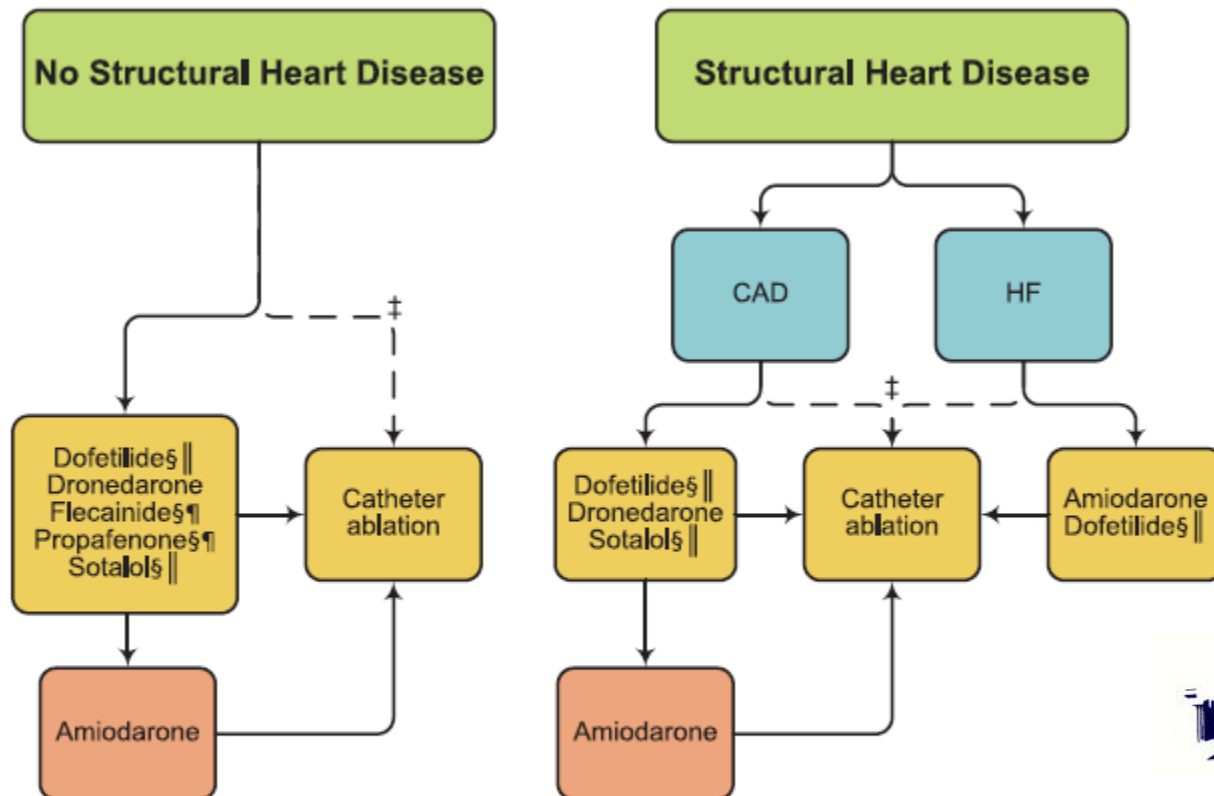


AHA/ACC/HRS Practice Guideline

2014 AHA/ACC/HRS Guideline for the Management of Patients With Atrial Fibrillation

A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and the Heart Rhythm Society

STRATEGIES FOR RHYTHM CONTROL IN PAROXYSMAL AND PERSISTENT AF



The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812

OCTOBER 25, 2012

VOL. 367 NO. 17

Radiofrequency Ablation as Initial Therapy in Paroxysmal Atrial Fibrillation

Jens Cosedis Nielsen, M.D., D.M.Sc., Arne Johannessen, M.D., D.M.Sc., Pekka Raatikainen, M.D., Ph.D., Gerhard Hindricks, M.D., Ph.D., Håkan Walfridsson, M.D., Ph.D., Ole Kongstad, M.D., Ph.D., Steen Pehrson, M.D., D.M.Sc., Anders Englund, M.D., Ph.D., Juha Hartikainen, M.D., Ph.D., Leif Spange Mortensen, M.Sc., and Peter Steen Hansen, M.D., D.M.Sc.

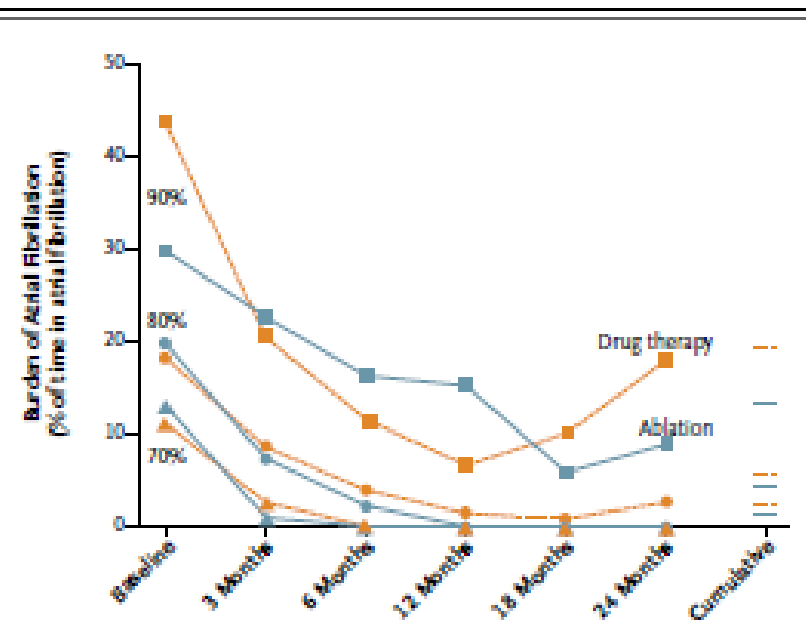


Figure 2. Percentile of Atrial-Fibrillation Burden According to Treatment Group.

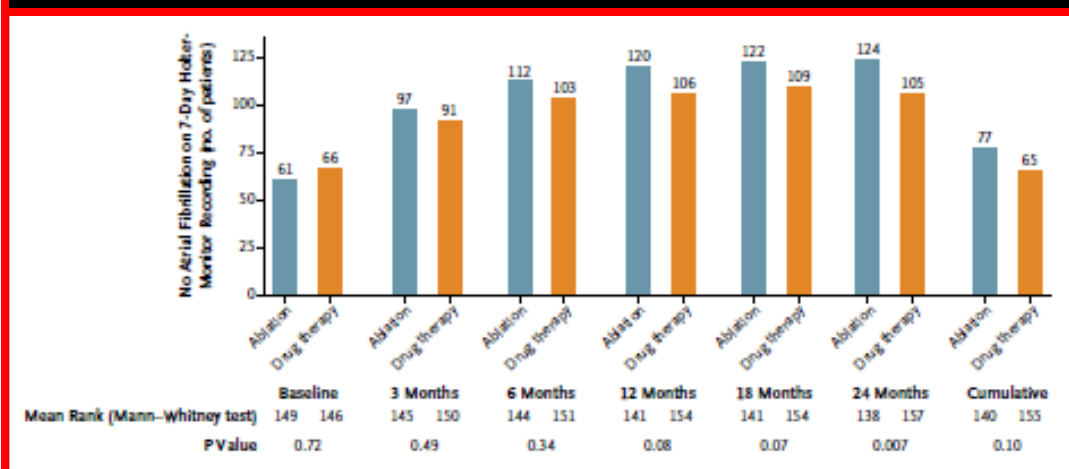


Figure 1. Burden of Atrial Fibrillation and Proportion of Patients Who Were Free of Atrial Fibrillation during the 2-Year Study Period, According to Treatment Group.





Catheter ablation vs. antiarrhythmic drug treatment of persistent atrial fibrillation: a multicentre, randomized, controlled trial (SARA study)

European Heart Journal Advance Access published October 17, 2013

Lluís Mont^{1*}, Felipe Bisbal¹, Antonio Hernández-Madrid², Nicasio Pérez-Castellano³, Xavier Viñolas⁴, Angel Arenal⁵, Fernando Arribas⁶, Ignacio Fernández-Lozano⁷, Andrés Bodegas⁸, Albert Cobos⁹, Roberto Matía², Julián Pérez-Villacastín³, José M. Guerra⁴, Pablo Ávila⁵, María López-Gil⁶, Victor Castro⁷, José Ignacio Arana⁸, and Josep Brugada¹, on behalf of SARA investigators

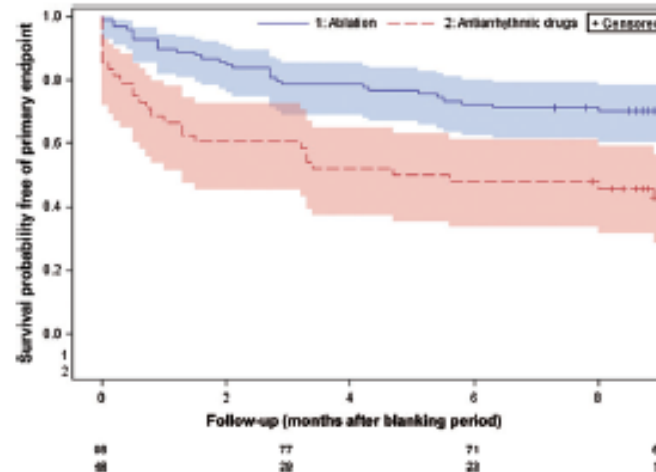
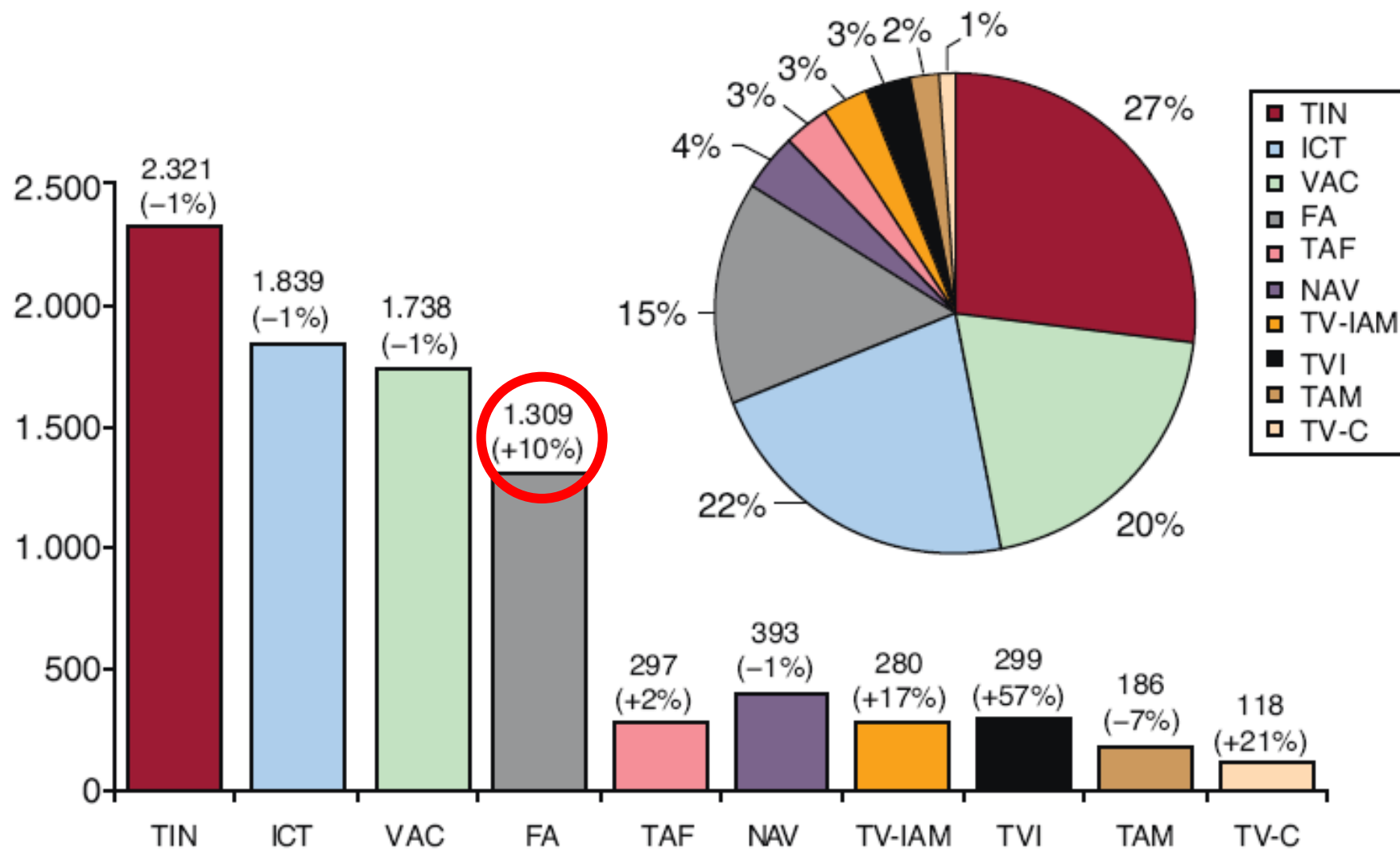


Figure 2 Survival curves for the primary endpoint.



FIBRILACION AURICULAR Y NUEVOS ANTICOAGULANTES

SUBSTRATOS ARRITMICOS TRATADOS MEDIANTE ABLACION

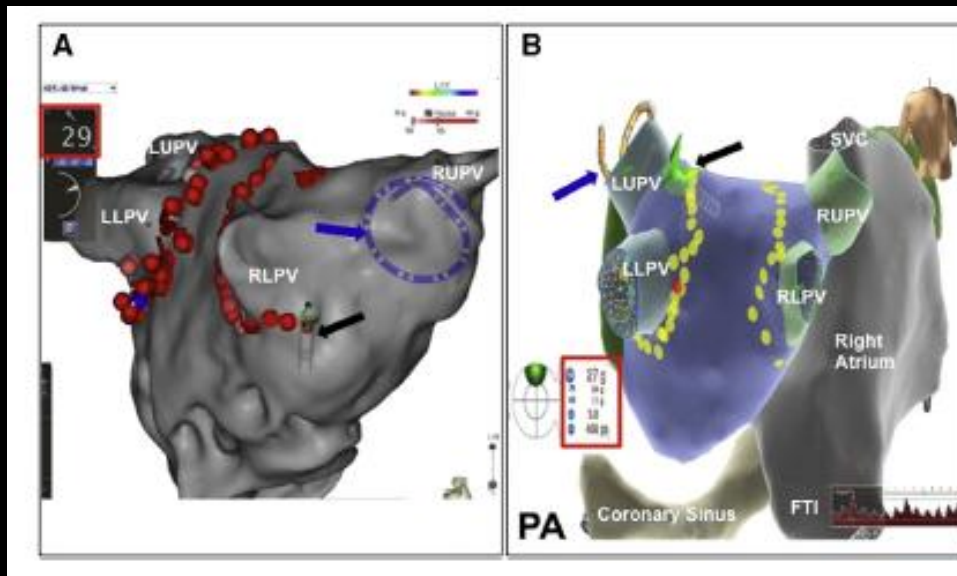


Cryoballoon Versus Open Irrigated Radiofrequency Ablation in Patients With Paroxysmal Atrial Fibrillation

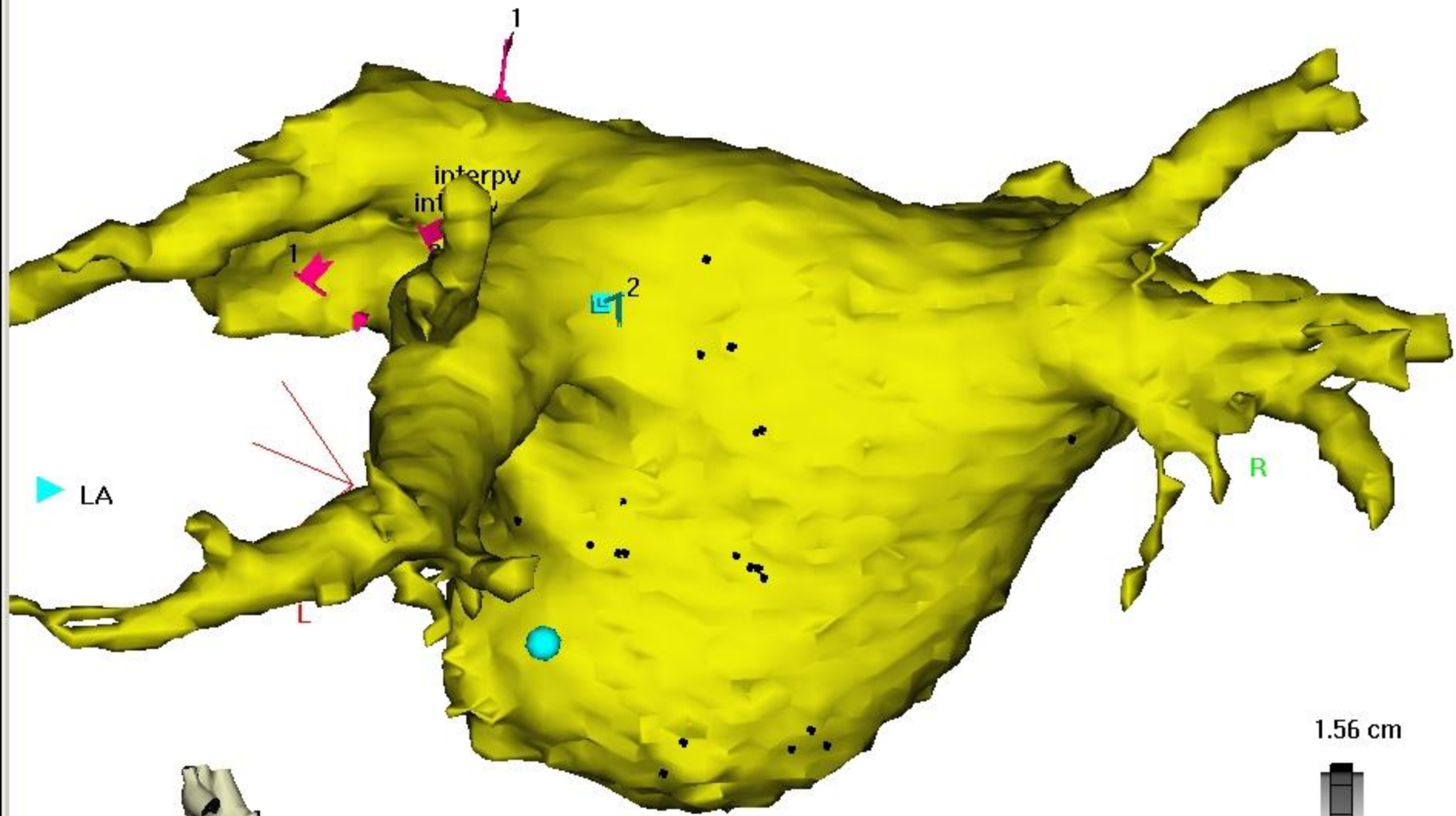
The Prospective, Randomized, Controlled, Noninferiority FreezeAF Study

(*Circulation*. 2015;132:1311-1319. DOI: 10.1161/CIRCULATIONAHA.115.016871.)

Armin Luik, MD; Andrea Radzewitz, PsyD; Meinhard Kieser, ScD; Marlene Walter; Peter Bramlage, MD; Patrick Hörmann, MD; Kerstin Schmidt, MD; Nicolas Horn, MD; Maria Brinkmeier-Theofanopoulou, MD; Kevin Kunzmann, MSc; Tobias Rixinger, MD;

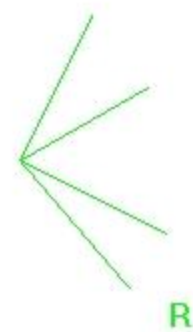
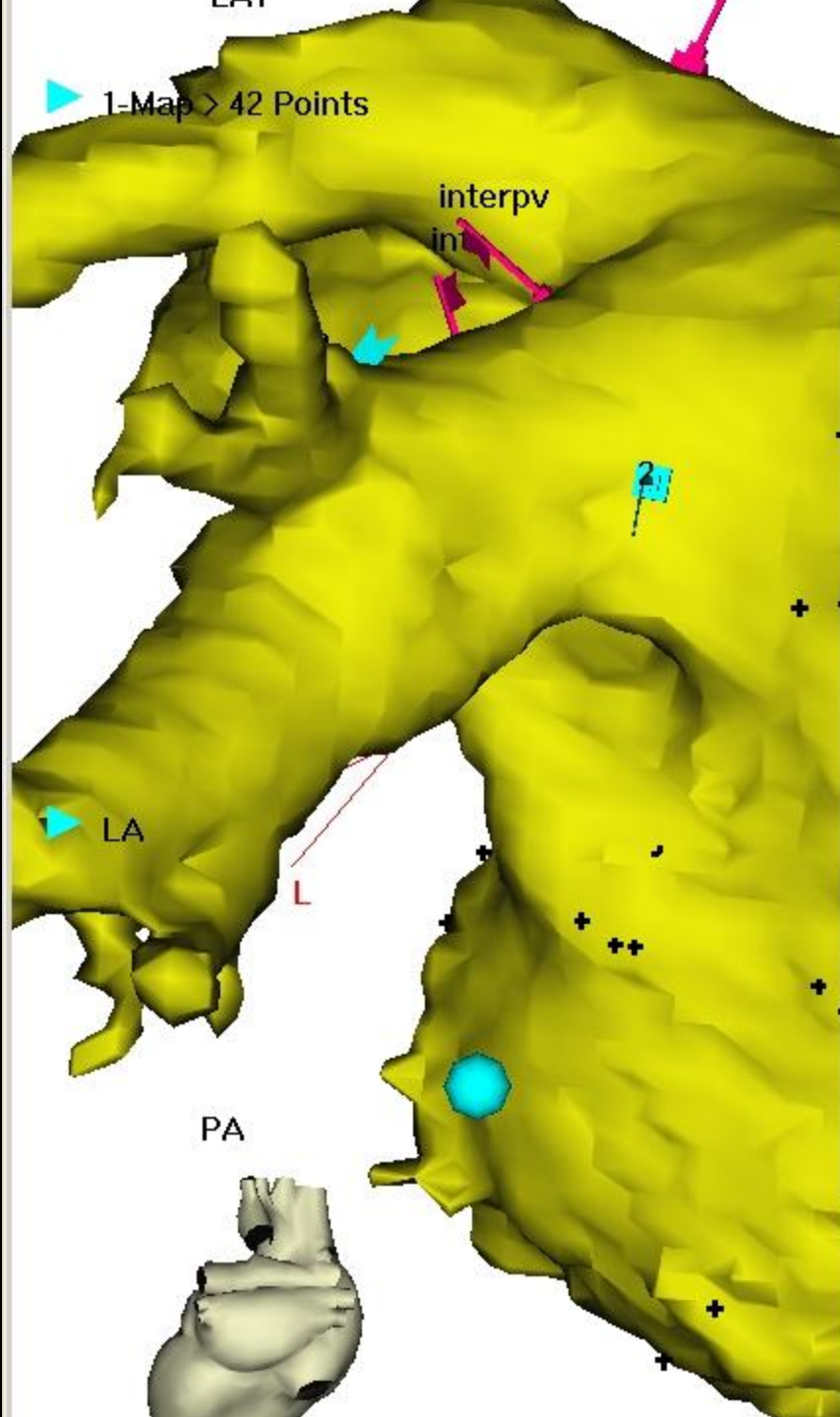


▶ 1-Map > 42 Points

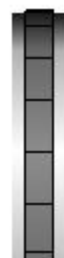


1.56 cm



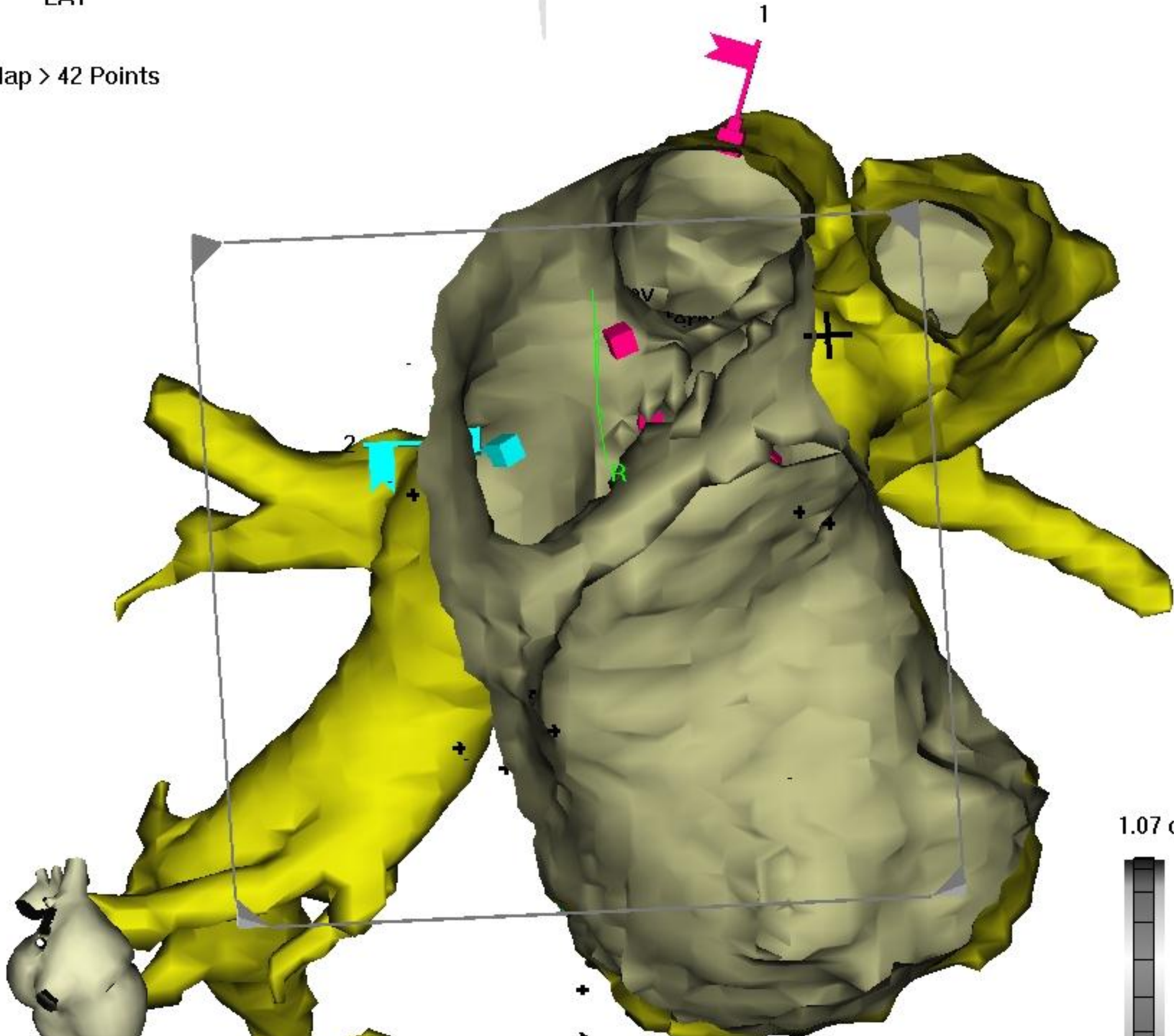


1.07 cm

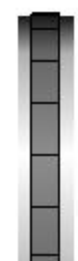


▶ 1-Map > 42 Points

▶ LA

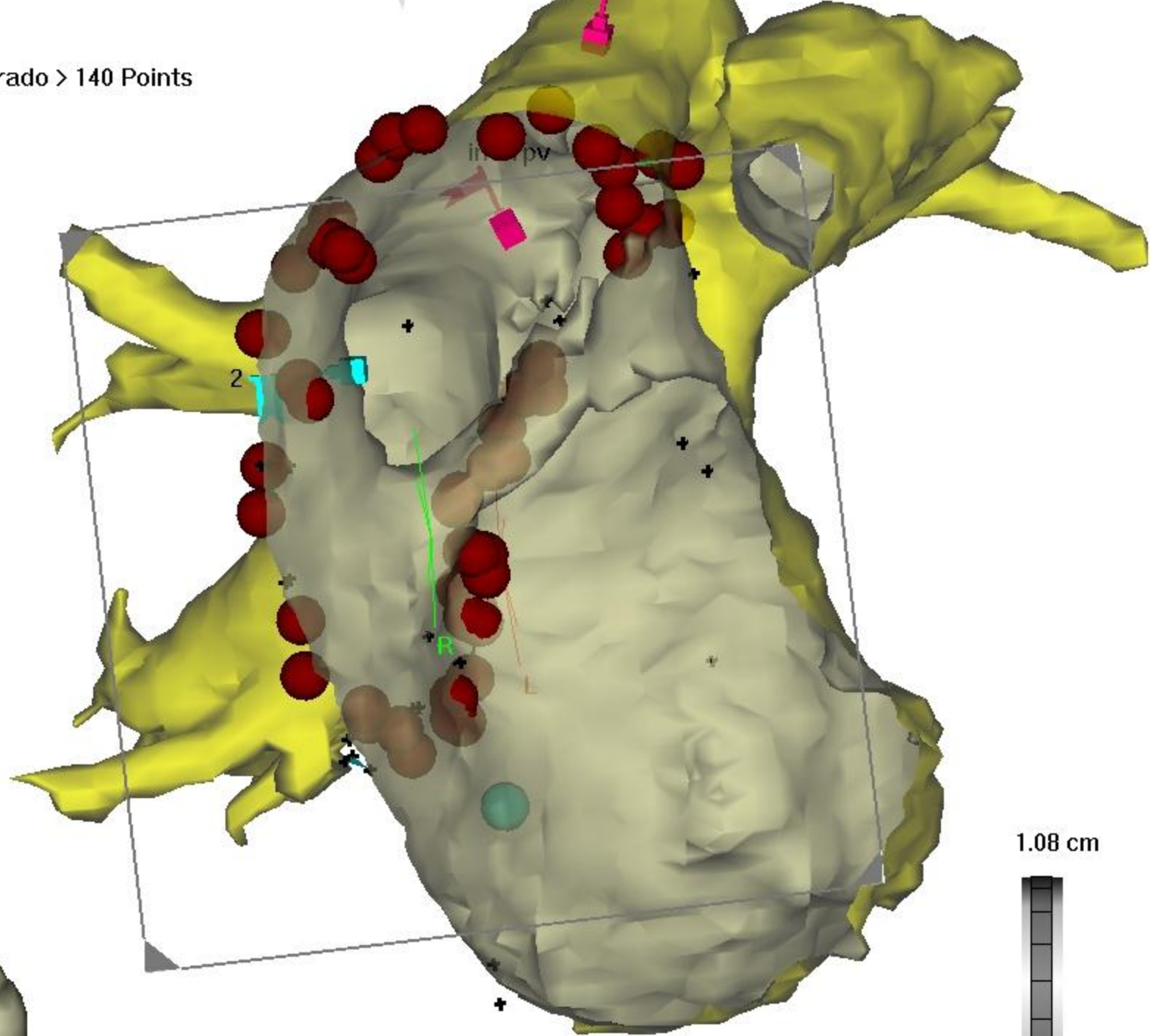


1.07 cm



EAT

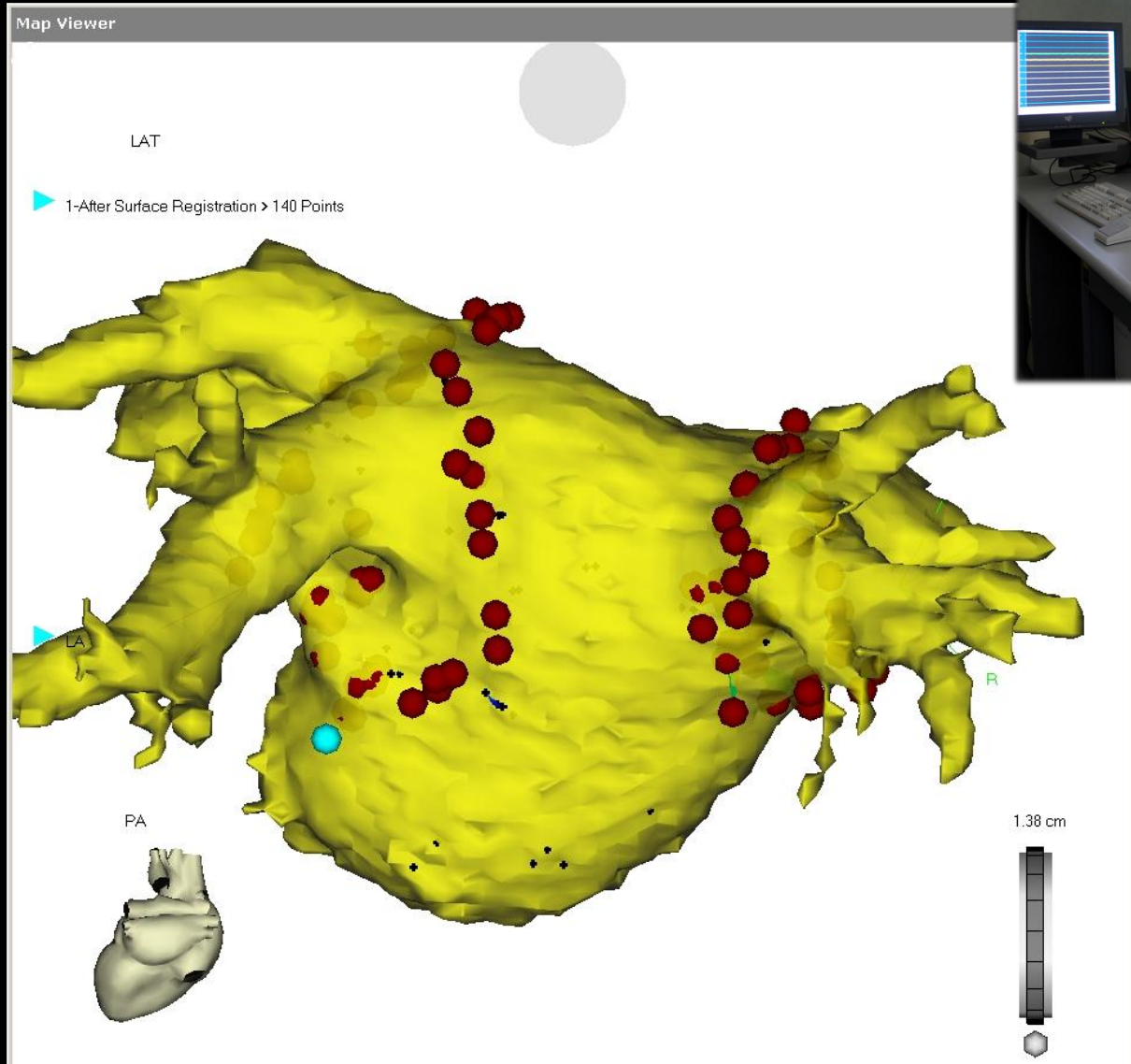
▶ 1-Mapa registrado > 140 Points



▶ LA

1.08 cm



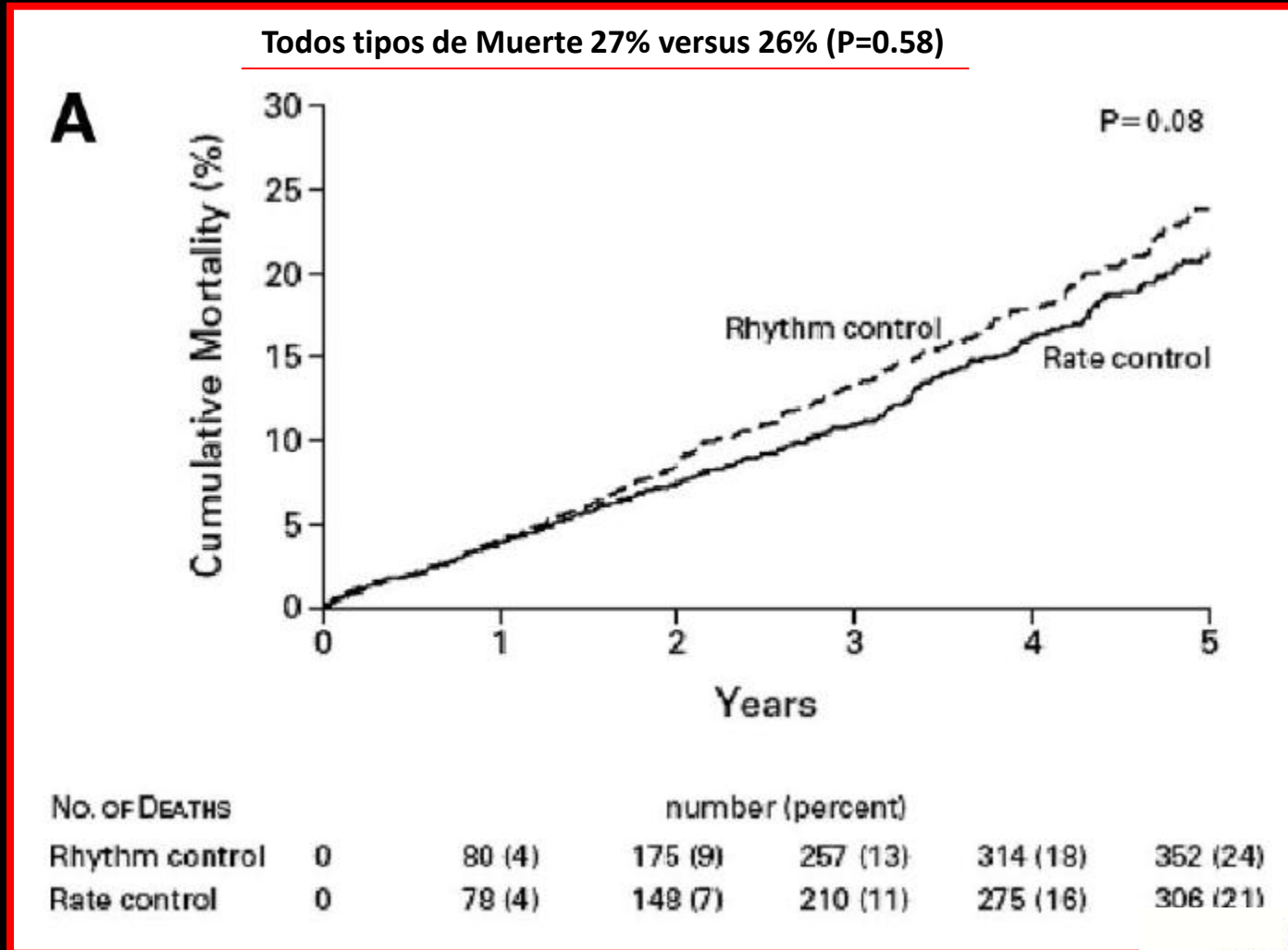


Objetivos del tratamiento de la FA

- **Controlar la frecuencia ventricular**



IMPACTO DEL MANTENIMIENTO FARMACOLÓGICO EN RITMO SINUSAL *versus* CONTROL DE FRECUENCIA



Estudio AFFIRM, N Engl J Med 2002

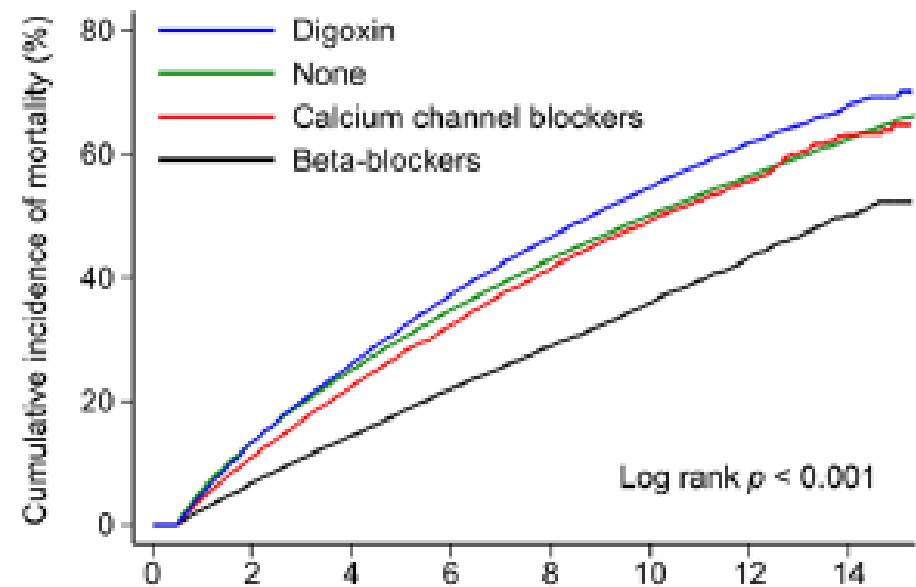


Rate-Control Treatment and Mortality in Atrial Fibrillation

Tze-Fan Chao, MD*; Chia-Jen Liu, MD*; Ta-Chuan Tuan, MD; Su-Jung Chen, MD; Kang-Ling Wang, MD; Yenn-Jiang Lin, MD; Shih-Lin Chang, MD; Li-Wei Lo, MD; Yu-Feng Hu, MD; Tzeng-Ji Chen, MD; Chern-En Chiang, MD, PhD; Shih-Ann Chen, MD

Background—Current American and European guidelines emphasize the importance of rate-control treatments in treating atrial fibrillation with a Class I recommendation, although data on the survival benefits of rate control are lacking. The goal of the present study was to investigate whether patients receiving rate-control drugs had a better prognosis compared with those without rate-control treatment.

Methods and Results—This study used the National Health Insurance Research Database in Taiwan. There were 43 879, 18 466, and 38 898 patients with atrial fibrillation treated with beta-blockers, calcium channel blockers, and digoxin, respectively. The reference group was patients with atrial fibrillation not receiving any rate-control treatment. The clinical end point was all-cause mortality. After adjustment for baseline differences, the hazard ratio for mortality was 0.76 (95% confidence interval=0.90–0.96) compared with the digoxin group had a higher risk of mortality. The results were observed consistently in patients with atrial fibrillation treated with beta-blockers or calcium channel blockers. **Conclusions**—In this nationwide atrial fibrillation study, rate-control treatment with β -blockers or calcium channel blockers was associated with a lower risk of mortality compared with digoxin. Digoxin use was associated with a higher risk of mortality. (Circulation. 2015;132:1323–1331)



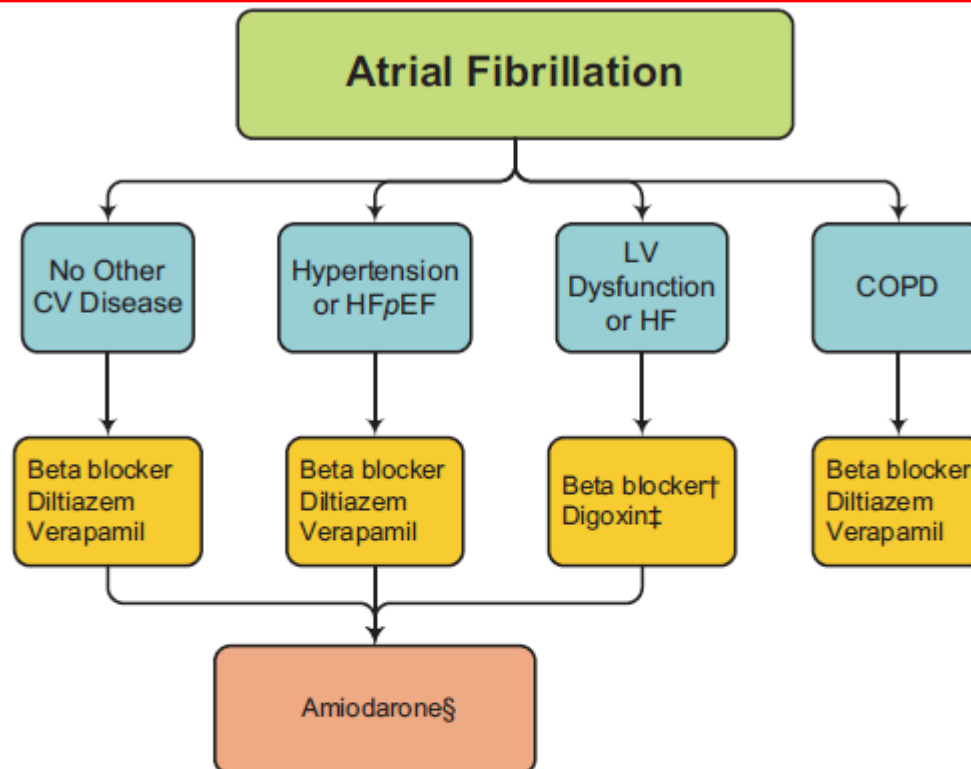
Number at risk	Follow-up (years)							
	0	2	4	6	8	10	12	14
Digoxin	38,898	29,945	21,905	15,398	10,136	6,055	2,888	604
None	188,678	120,848	81,244	53,893	33,793	20,025	9,259	3,307
Calcium channel blockers	18,466	13,921	9,617	6,299	3,725	2,067	896	146
Beta-blockers	43,879	33,001	22,622	14,549	8,540	4,649	1,743	303

AHA/ACC/HRS Practice Guideline

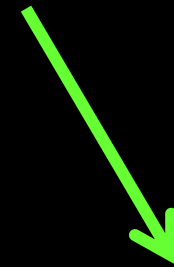
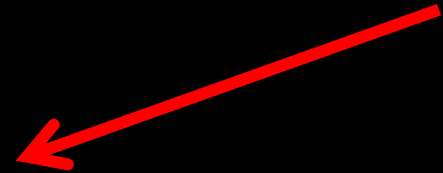
2014 AHA/ACC/HRS Guideline for the Management of Patients With Atrial Fibrillation

A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and the Heart Rhythm Society

APPROACH TO SELECTING DRUG THERAPY FOR VENTRICULAR RATE CONTROL



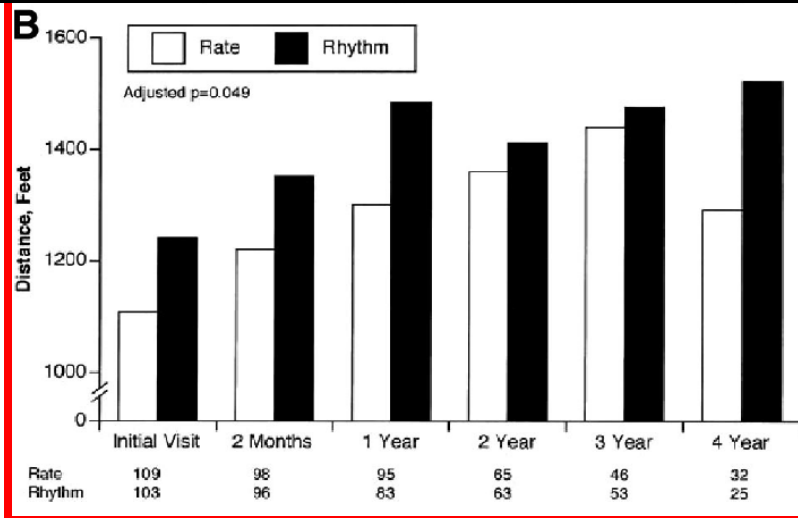
“CALIDAD DE VIDA” MANTENIMIENTO EN RITMO SINUSAL VERSUS CONTROL DE FRECUENCIA



En contra:

- ↓ viabilidad de la CV/MRS
 - Duración FA > 1 año
 - > 2 CV eléctricas previas
 - Fracaso >2 FAA (mantener RS)
 - Recaída precoz (< 1mes)
 - Valvulopatía mitral
 - Dilatación severa AI (> 55 mm)
- Rechazo del paciente

Rev Esp Cardiol 2003; 56 (8): 801-16



Condiciones a favor:

- FA sintomática:
 - Angor
 - ICC
 - Síncope
 - Mala tolerancia subjetiva
- 1^{er} episodio de FA
- FA paroxística
- FA 2.^a a enfermedad curable
- Elección del paciente

Jenkins, et al. Am Heart J 2005



La Fibrilación Auricular

5.- Cómo están las cosas?



Prevención

AHA/ACC/HRS Practice Guideline

2014 AHA/ACC/HRS Guideline for the Management of Patients With Atrial Fibrillation

A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and the Heart Rhythm Society

Table 3. 10 Most Common Comorbid Chronic Conditions Among Medicare Beneficiaries With AF

	Beneficiaries ≥65 y of Age (N=2 426 865) (Mean Number of Conditions=5.8; Median=6)		Beneficiaries <65 y of Age (N=105 878) (Mean Number of Conditions=5.8; Median=6)		
	N	%	N	%	
Hypertension	2 015 235	83.0	Hypertension	85 908	81.1
Ischemic heart disease	1 549 125	63.8	Ischemic heart disease	68 289	64.5
Hyperlipidemia	1 507 395	62.1	Hyperlipidemia	64 153	60.6
HF	1 247 748	51.4	HF	62 764	59.3
Anemia	1 027 135	42.3	Diabetes mellitus	56 246	53.1
Arthritis	965 472	39.8	Anemia	48 252	45.6
Diabetes mellitus	885 443	36.5	CKD	42 637	40.3
CKD	784 631	32.3	Arthritis	34 949	33.0
COPD	561 826	23.2	Depression	34 900	33.0
Cataracts	546 421	22.5	COPD	33 218	31.4

Modifiable Atrial Fibrillation Risk Factors

Obesity

Obstructive Sleep Apnea

Hypertension

Diabetes Mellitus

Alcohol Consumption



Lifestyle Modification in the Prevention and Treatment of Atrial Fibrillation

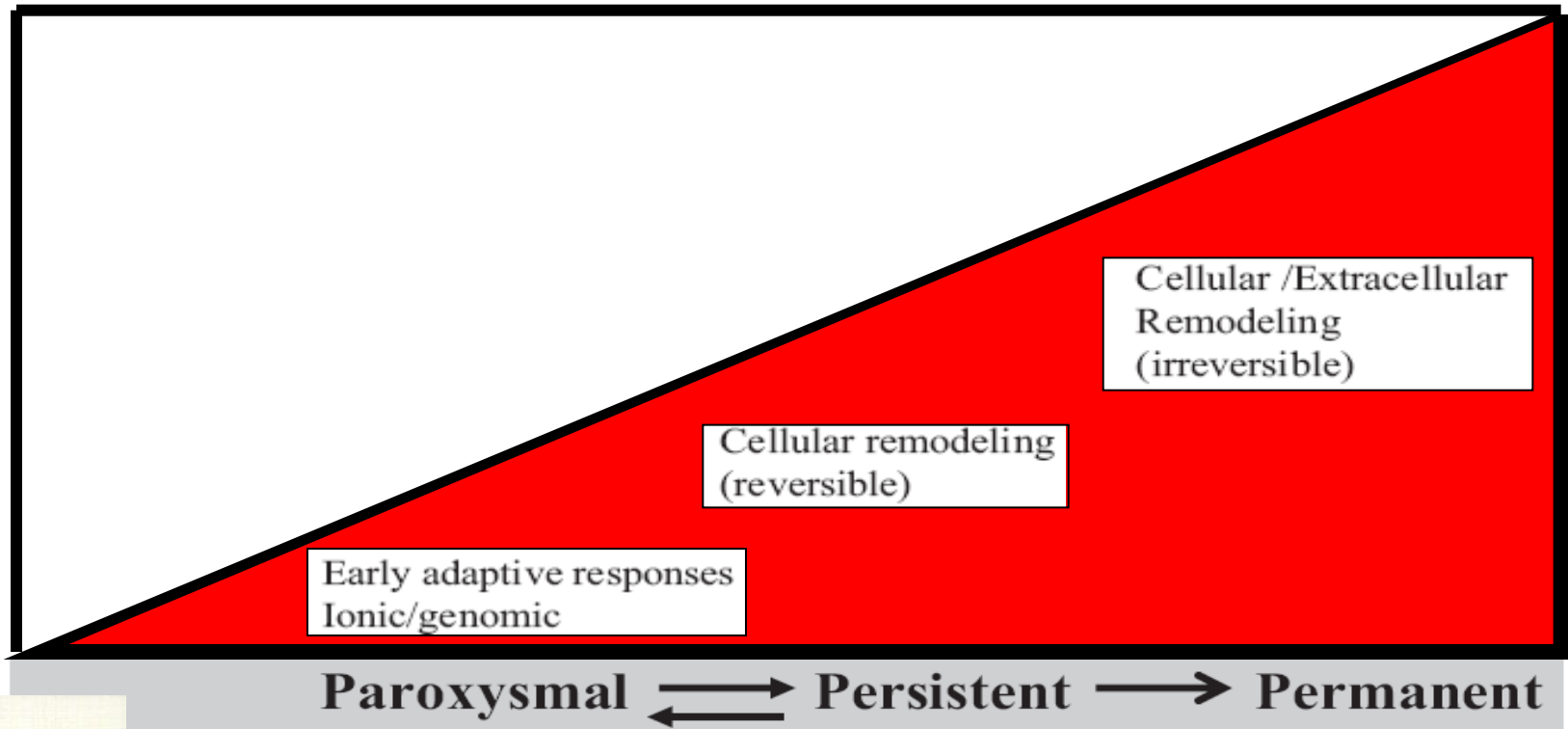


PROGRESS IN CARDIOVASCULAR DISEASES 58 (2015) 117–125

Arthur R. Menezes^a, Carl J. Lavie^{a,*}, Alban De Schutter^a, Richard V. Milan^a, James O'Keefe^b, James J. DiNicolantonio^b, Daniel P. Morin^a, Freddy M. Abi-Samra^a



Remodeling in the Atrial Fibrillation



New onset AF

Time

Qué me interesa saber sobre la Fibrilación Auricular?

CONCLUSION

PAROXISTICA

PERSISTENTE

PERMANENTE

Características

Terminación espontanea, ó < 72 horas

> 72 horas. No terminación espontanea, pero sí paso a RS

No puede ser revertida a RS

Tratamiento a corto plazo

Reversion a RS
• Anticoagulación

• Reversion a RS
• Anticoagulación
• Control de frecuencia ventricular

• Control de frecuencia ventricular
• Anticoagulación

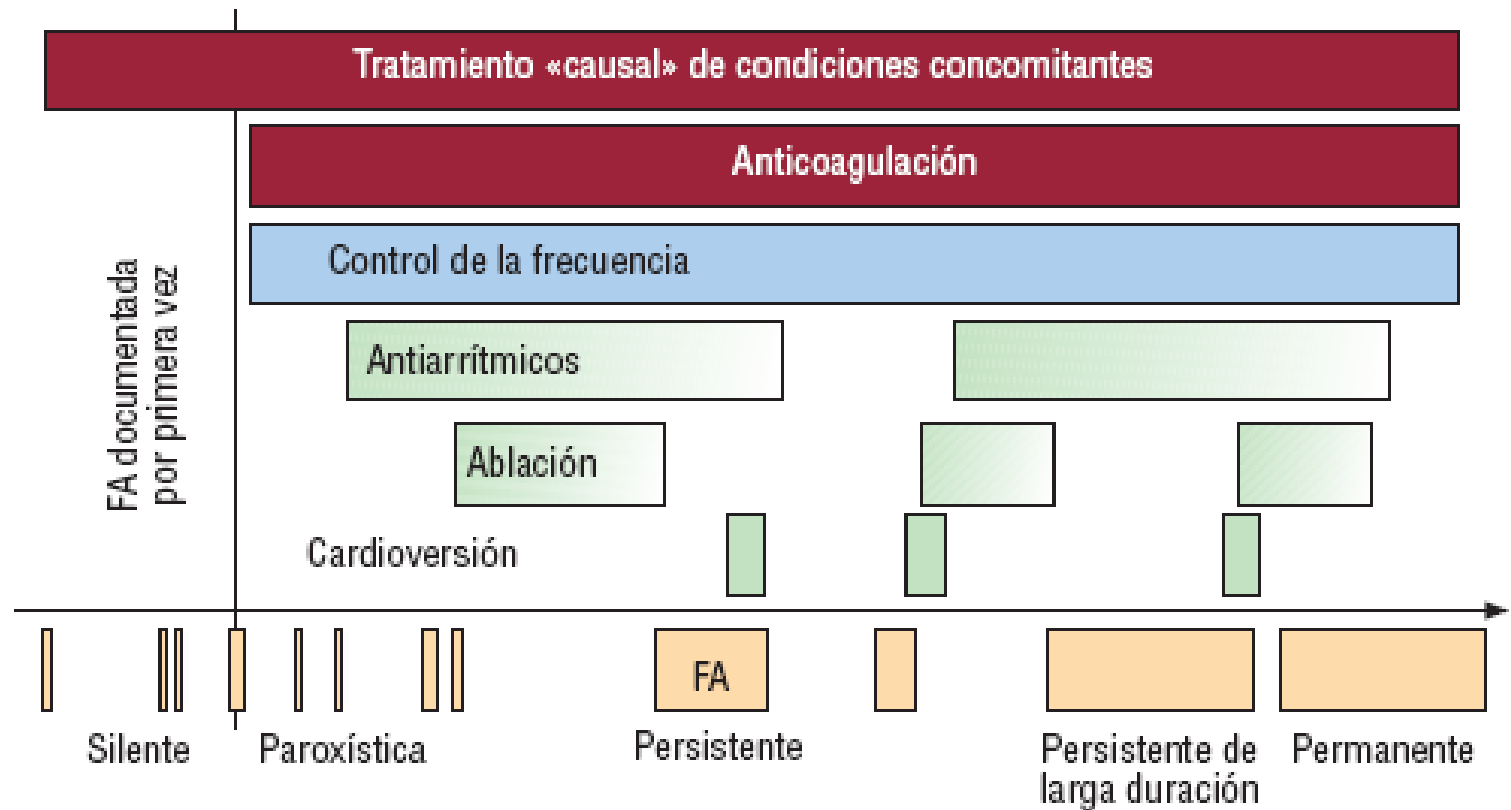
Tratamiento a largo plazo

Mantenimiento en RS

• Mantenimiento en RS
• Control de frecuencia ventricular

Control de frecuencia ventricular





Patología más prevalente en población trabajadora que requiere tratamiento anticoagulante

