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II Congreso Ibérico de Medicina Interna

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"Príncipe Felipe"

**VII Congreso de la Sociedad
Asturiana de Medicina Interna**



***Detección de arteriosclerosis
subclínica: ¿Cuándo, cómo y a
quién?***

***Jose M Mostaza Prieto
Hospital Carlos III
MADRID***



Ecografía



Doppler

Enfermedad vascular subclínica

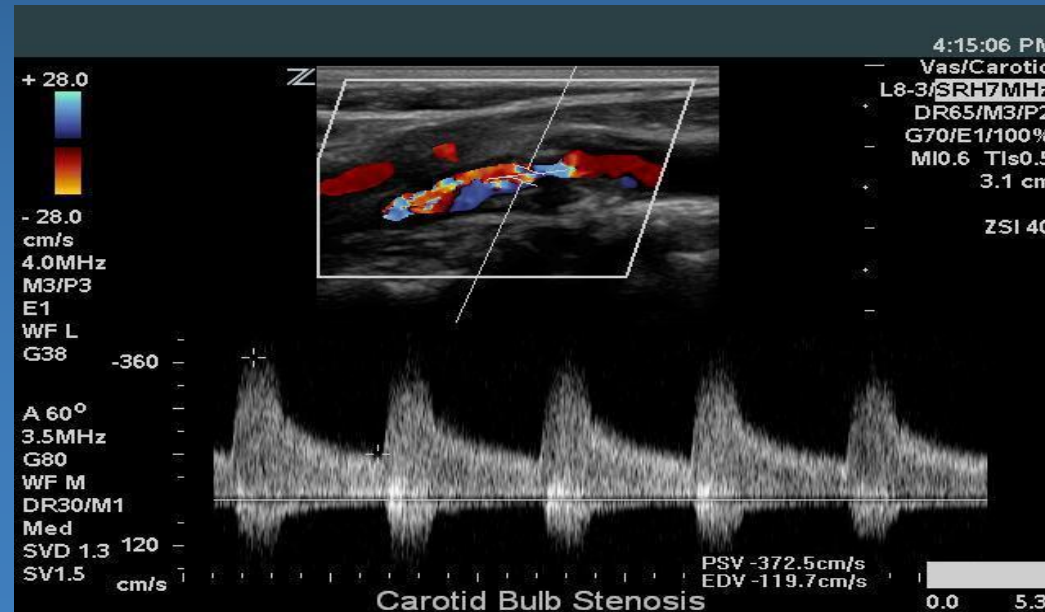
- Para diagnosticar enfermedad vascular susceptible de intervención o seguimiento estrecho
- Para mejorar la estratificación del riesgo cardiovascular

Diagnóstico de enfermedad candidata a seguimiento o tratamiento

- Estenosis carotídea
- Aneurisma de aorta abdominal

La ecografía es la prueba para diagnosticar la presencia de estenosis carotidea

- Detectar la presencia de estenosis significativa en pacientes con AIT o ictus
- ¿Detectar la presencia de estenosis en pacientes asintomáticos?



Indicaciones para buscar estenosis carotidea: Pacientes sintomáticos

- Síntomas compatibles con ictus o AIT en la distribución de la arteria carótida ipsilateral. Si existe una estenosis sintomática $> 70\%$ (en algunos sitios si $>50\%$), hay indicación de endarterectomía.
- No se considera sintomática la presencia de mareos, síncope o pre-síncope, visión borrosa o cualquier otra sintomatología vaga, incluso ante la presencia de estenosis significativas.

Riesgo de ictus a 2 años en relación con el grado de estenosis carotídea en pacientes sintomáticos: Estudio NASCET

Grado de estenosis de ICA*	Tratamiento médico	Tratamiento quirúrgico	NNT
70-99%	26,1%	12,9	8
50-69%	22,2%	15,7%	15
<50%	18,7%	14,9%	26

*Grado de estenosis medido por angiografía. Tratamiento médico se recomendaba antiagregación. El grupo quirúrgico era endarterectomía en los 6 meses posteriores al ictus o AIT. El riesgo se reduce mucho mas si la intervención se realiza en las 2 semanas posteriores al evento.

El riesgo de ictus perioperatorio es mayor en pacientes con leucoaraiosis, con estenosis contralateral y en aquellos con trombo intraluminal.

El beneficio es menor en mujeres y tras amaurosis fugax.

El riesgo quirúrgico es mayor en en fermedad coronaria, EPOC, insuficiencia renal

ACAS: 40-79 años. Seguimiento de 5 años

Grado de estenosis de ICA*	Tratamiento médico	Tratamiento quirúrgico	NNT en 1 año
>60%	11%	5,1%	100 (1% anual)

Predictores de mayor riesgo de ictus en pacientes asintomáticos son: mayor grado de estenosis, estenosis progresiva, historia de ictus de estenosis contralateral sintomática y aumento de creatinina

La mayor utilización de tratamiento médico enérgico reducirá la tasa de eventos en este grupo y la utilización de stent reducirá la tasa de complicaciones en el grupo quirúrgico.

Is there a role for revascularisation in asymptomatic carotid stenosis?

Marco Roffi thinks revascularisation should be the strategy of choice for patients with asymptomatic carotid stenosis but **J David Spence** argues that all but a tiny minority would do better with medical management

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Marco.Roffi@cug.ch

YES Large scale randomised trials have shown the benefit of carotid endarterectomy over medical management in patients with >60% asymptomatic stenosis of the internal carotid artery. Nevertheless, the value of revascularisation has been questioned because of the small reduction in absolute risk (about 1% a year) associated with surgery and the lack of best medical treatment in the control arms of the trials. However, the assumption that drug treatment alone may be sufficient to prevent ipsilateral strokes is hazardous and not supported by randomised data. To estimate the benefit of revascularisation the following factors need to be taken into account: the annual risk of (ipsilateral) stroke in asymptomatic patients treated conservatively and the periprocedural and long term risk of stroke after carotid revascularisation.

Stroke risk in asymptomatic patients

Although the risk of ipsilateral stroke in patients with asymptomatic stenosis is commonly estimated at 1% a year, several studies have identified higher risk subgroups of patients. A trial randomising symptomatic

patients to carotid endarterectomy or drug treatment found a stroke rate related to the contralateral (asymptomatic) carotid artery of 3.7% a year in patients with a stenosis >75%.¹ A multicentre study following the natural course in 1115 asymptomatic patients detected an annual stroke risk of 6.3% among those with severe carotid stenosis, raised creatinine concentrations, and a history of contralateral transient ischaemic attack.² A subgroup of 821 patients in this cohort had baseline brain computed tomography and were followed up for eight years; the annual stroke rate was 3.6% among patients with evidence of (silent) embolic infarcts at baseline and 1% in those without infarcts.² Similarly, in a prospective investigation of 467 patients with asymptomatic carotid stenosis, the presence of embolic signals on transcranial Doppler identified a subgroup of patients at higher risk of ipsilateral stroke (3.6% a year); in the absence of signals the annual stroke risk was 0.7%.⁴

A prospective registry including 3164 patients with asymptomatic carotid disease detected a stroke rate of 3.2% at one year, and the presence of peripheral arterial disease, hyperlipidaemia, or diabetes roughly doubled the overall stroke risk.⁵ Similarly, patients with progression of carotid disease on Duplex scanning seem to be at higher risk of stroke. A prospective evaluation of 1268 asymptomatic patients who had scans at baseline and after a

2.7%, respectively.³ This is being widely interpreted to mean that endarterectomy and stenting could go full steam ahead in patients with asymptomatic carotid stenosis. However, the risk of stroke or death in these patients is now lower (<1% a year) with medical management than with intervention. These findings were consistent in a recent meta-analysis, a prospective population based study in Oxfordshire, and a prospective study in patients attending a Canadian vascular prevention clinic.^{4,6}

Few benefit from surgery

The CREST result does not warrant uncritical intervention in asymptomatic stenosis.⁷ Patients with microemboli on transcranial Doppler may benefit from intervention,⁸ but these account for less than 5% of patients with asymptomatic stenosis.⁶ Imaging markers of vulnerable plaque or reduced cerebral blood flow reactivity may slightly increase the proportion of patients with asymptomatic stenosis who benefit from surgical intervention.⁹ In the absence of microemboli or other indicators of high risk, routine carotid endarterectomy or stenting for asymptomatic stenosis can no longer be justified.

It is now clear that stenting carries a higher risk of stroke or death than does endarterectomy,¹⁰ particularly in elderly people.⁷ Carotid stenting

J David Spence director, Stroke Prevention and Atherosclerosis Research Centre, Robarts Research Institute, University of Western Ontario, ON, Canada N6G 2V2
spence@robarts.ca

NO Carotid endarterectomy and stenting for asymptomatic stenosis are based on historical risks that no longer pertain. With more intensive medical management (including lifestyle modification), the risk of stroke or death is now lower than with intervention; patients with asymptomatic stenosis are now more likely to be harmed than helped. In most cases, carotid stenting or endarterectomy for asymptomatic stenosis is inappropriate and unwarranted.

In the Asymptomatic Carotid Artery Surgery and Asymptomatic Carotid Surgery randomised trials, the extrapolated five year risk of stroke or death was about 10% with medical management versus about 5% with surgery.^{1, 2} Those outdated figures are now being compared with recent results of the Carotid Revascularisation Endarterectomy versus Stenting Trial (CREST),³ to justify routine endarterectomy or stenting. In CREST, patients with carotid stenosis were randomised to endarterectomy or stenting; 47% of participants had asymptomatic stenosis. The periprocedural risk of stroke was 2.5% for stenting and 1.4% for endarterectomy (with four year risks of 4.5% and



ALAN POLL/SHARP

All references are in the version on bmj.com

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TRANS-ATLANTIC DEBATE

Thomas L. Forbes, MD, and Jean-Baptiste Ricco, MD, PhD, Section Editors

Asymptomatic carotid artery stenosis—Medical therapy alone versus medical therapy plus carotid endarterectomy or stenting

Peter A. Schneider, MD^a and A. Ross Naylor, MD,^b Honolulu, Hawaii; and Leicester, United Kingdom

Vascular surgery has matured to the point that there exists robust bodies of literature exploring many of our therapies. However, this evidence is but one of the factors that dictate medical practice. Others include local patient demographics, the practical implications of healthcare delivery, and an individual surgeon's interpretation of this evidence, which can be somewhat subjective. As a result, there are numerous examples of vascular specialists' practice patterns differing depending on their geographic location. Recognizing this, the Editors of the *Journal of Vascular Surgery* and the *European Journal of Vascular and Endovascular Surgery* have developed a series of Trans-Atlantic Debates to explore these instances. The inaugural debate explores the controversial question of how best to manage asymptomatic carotid artery stenoses. Our debaters, Peter Schneider and Ross Naylor, offer reasoned and passionate arguments to defend their differing approaches. We trust that this addition to our journals will prove enlightening and, perhaps, entertaining. (*J Vasc Surg* 2010;52:499-507.)

PART I: CAROTID ENDARTERECTOMY OR STENTING IN ADDITION TO MEDICAL THERAPY IS STILL THE BEST WAY TO TREAT MOST ASYMPTOMATIC PATIENTS WITH 60% TO 99% CAROTID STENOSIS.

—Dr Peter A. Schneider

Repair of carotid stenosis, in addition to best medical therapy (BMT), is currently the best way to treat most asymptomatic patients with 60% to 99% carotid stenosis. Carotid stenosis causes preventable strokes. The unfortunate who present with stroke due to carotid stenosis (and their even more unfortunate counterparts who experienced a fatal stroke as the first sign of trouble) all harbored an asymptomatic lesion before their respective events. Carotid

repair used judiciously in concert with BMT and performed well can have life-long protective effects against stroke-related death and disability for patients with asymptomatic carotid stenosis.¹⁻³

There is a difference between critical analysis and being unreasonably critical. Reckless claims have been made about the superiority of BMT alone for 60% to 99% carotid stenosis.⁴⁻⁷ Small patient cohorts that have included minor lesions with limited follow-up have done "well" with BMT alone and that has been used to advocate the cessation of carotid repair.⁸⁻¹³ Practitioners have been accused of self-enrichment as the motivation for carotid repair.¹⁴ We are proudly informed that in the United Kingdom, only 20% of patients undergoing CEA are being treated for asymptomatic carotid stenosis, while many times that number who could benefit from repair will go on to have preventable stroke.^{14,15}

This leads to the following points:

1. Each time repair plus BMT has been compared with BMT alone, repair has had significant and lasting benefits.¹⁻³ There are numerous current organizational guidelines recommending repair and detailing the benefits (Table 1).¹⁶⁻¹⁹
2. Anyone who believes that they are performing carotid repair for their own benefit and not for the benefit of the patient should stop doing it immediately.¹⁴
3. BMT has produced stroke reduction in a variety of populations but has not been well tested among good-risk patients with significant asymptomatic carotid stenosis who would otherwise be candidates for repair.^{5,8,9,20-24}

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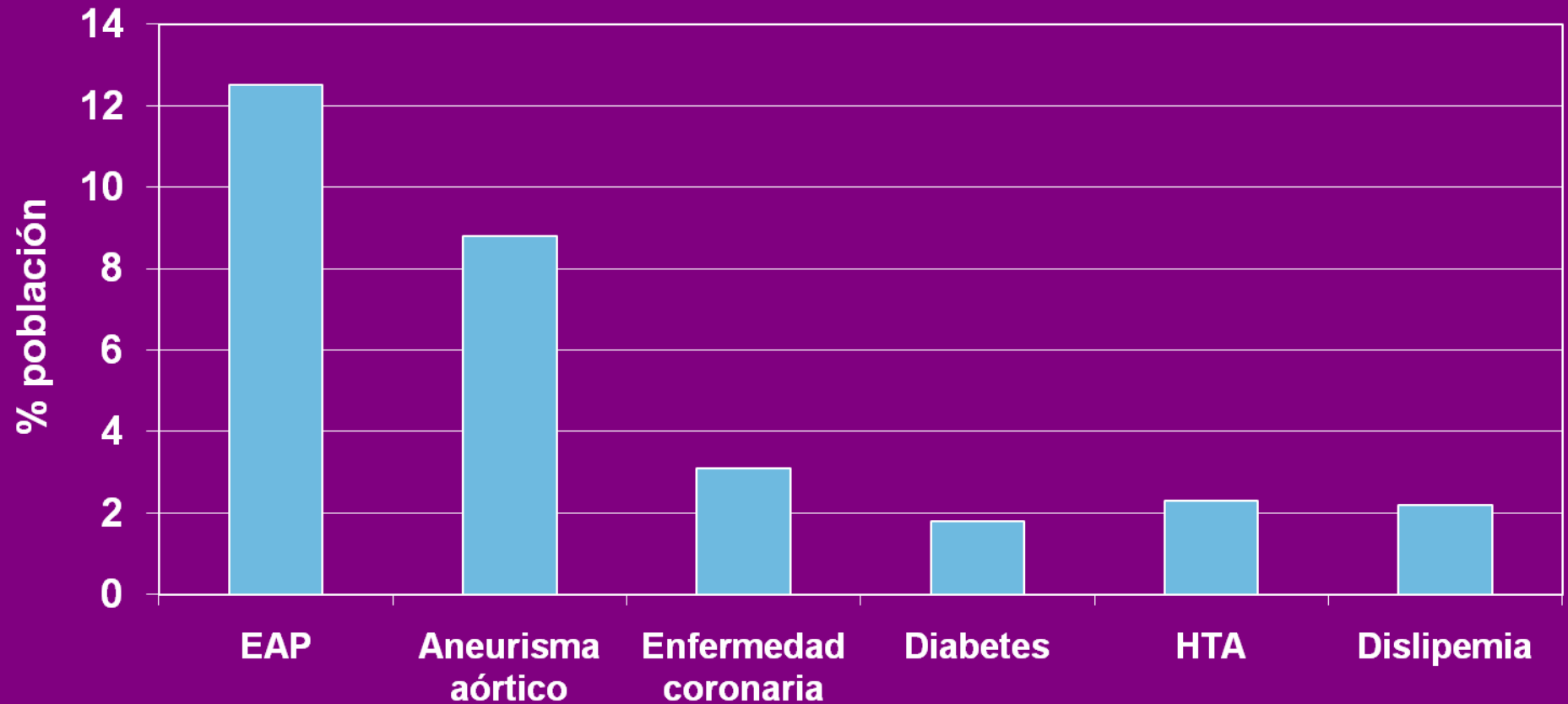
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doi:10.1016/j.jvs.2010.05.063

Indicaciones para buscar estenosis carotidea: Pacientes asintomáticos

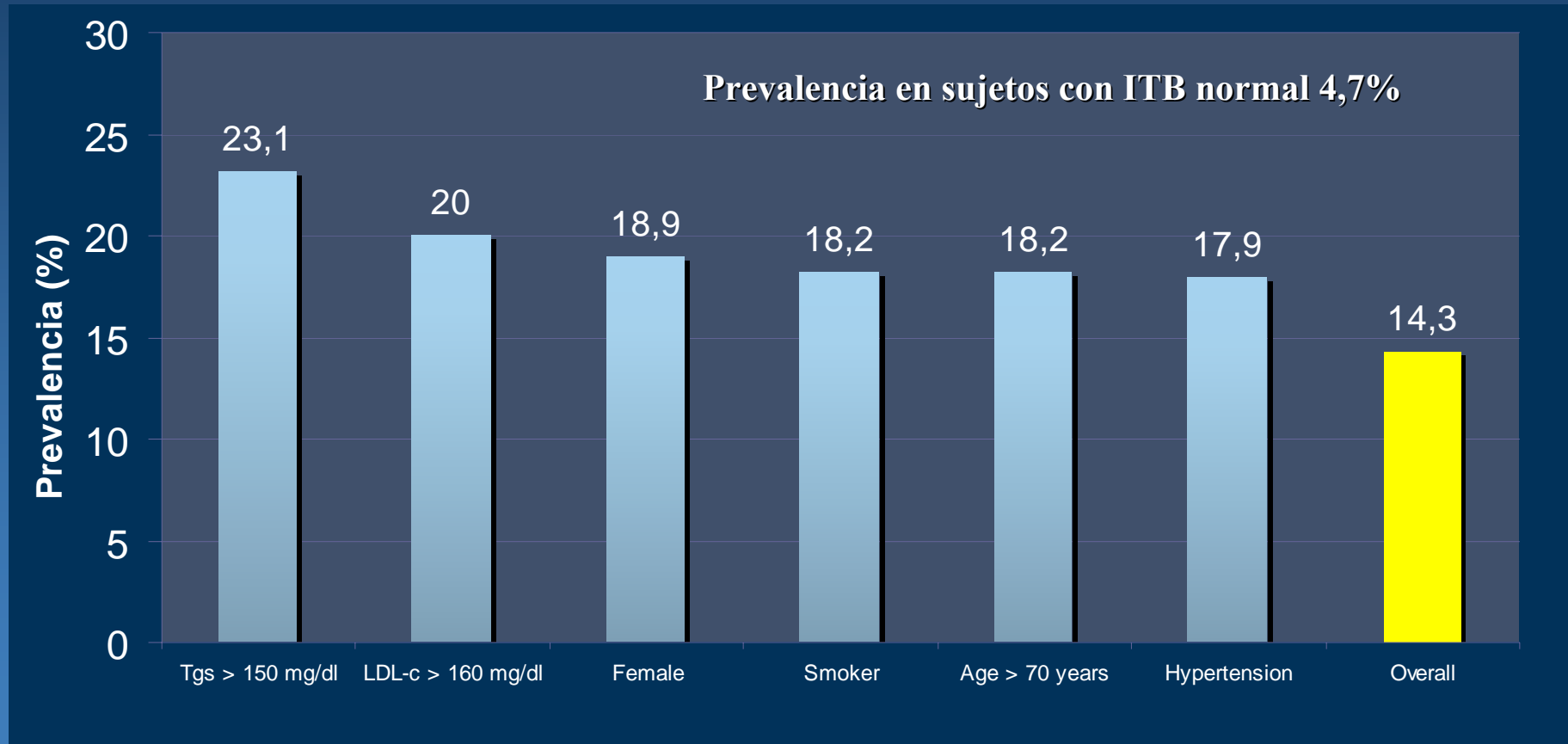
- USPSTF (2009). Desaconseja hacer despistaje de estenosis carotidea en la población general
- AHA (2006): No aconseja hacer despistaje de estenosis carotidea en la población general
- American Society Neuroimaging (2007): No aconseja hacer despistaje de estenosis carotidea en la población general pero sí en >65 años con 3 FRCV, by-pass aorto-coronario programado o si EAP sintomática.
- Sociedad americana de Cirugía vascular (2007): Screening en >55 años con enfermedad vascular o presencia de factores de riesgo.

Estudio SMART: Prevalencia de estenosis carotídea > 70% en función de la presencia de otra comorbilidad

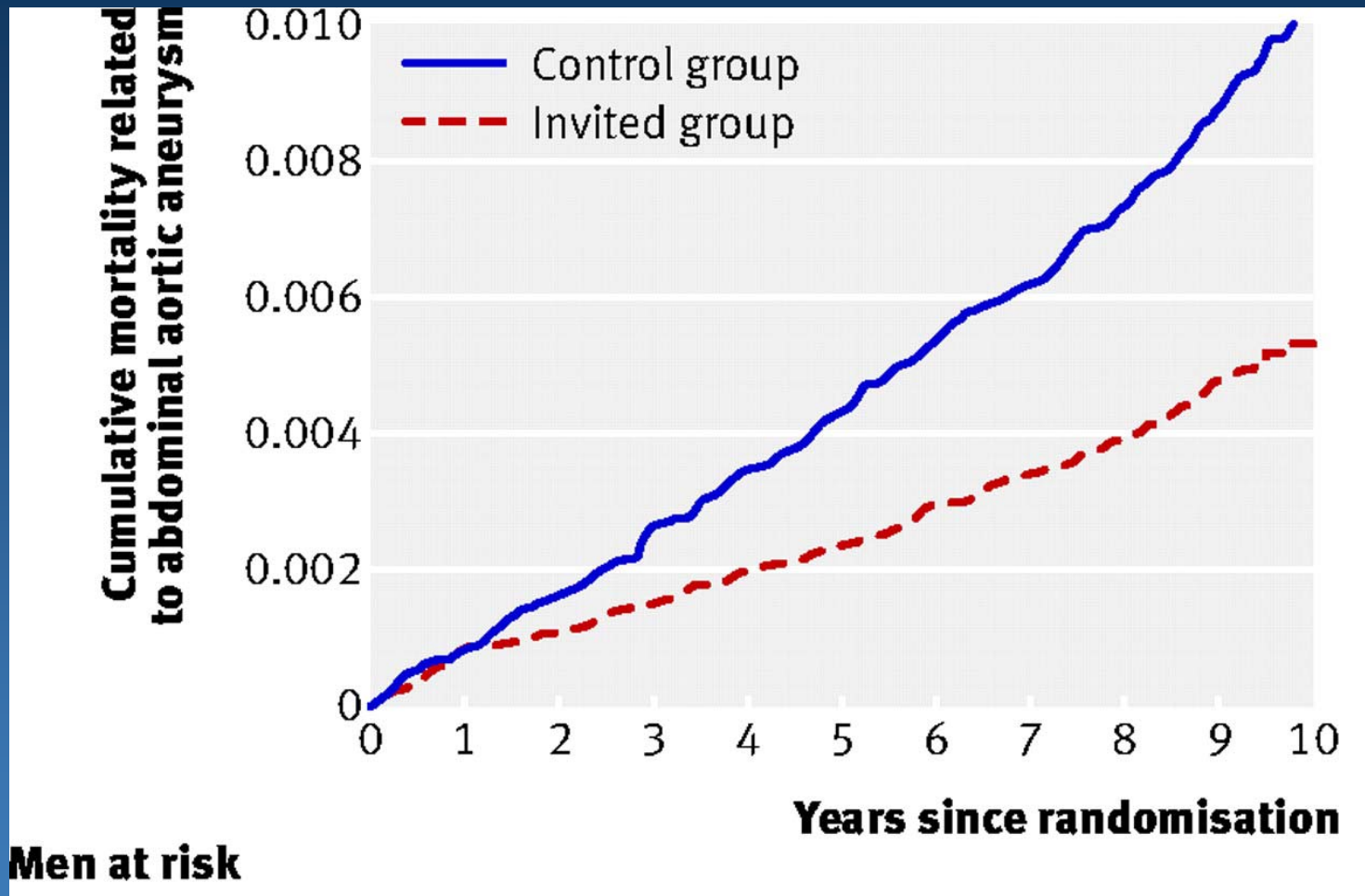


Kurvers et al. J Vasc Surg 2003; 37: 1226-33.

Estudio EVA: Prevalencia de estenosis carotídea >50% en pacientes asintomáticos, >60 años con 2 FRCV y con ITB < 0,9



Estudio MASS



Se necesita realizar un despistaje a 250 varones de entre 65 y 74 años para evitar una muerte

Thompson SG et al. BMJ 2009; 338: b2307.

Indicaciones de búsqueda de aneurisma de aorta abdominal

ACC/AHA

- Clase I. Varones ≥ 60 años cuyos padres o hermanos hayan tenido un AAA
- Clase IIa. Varones entre 65 y 75 años que hayan fumado

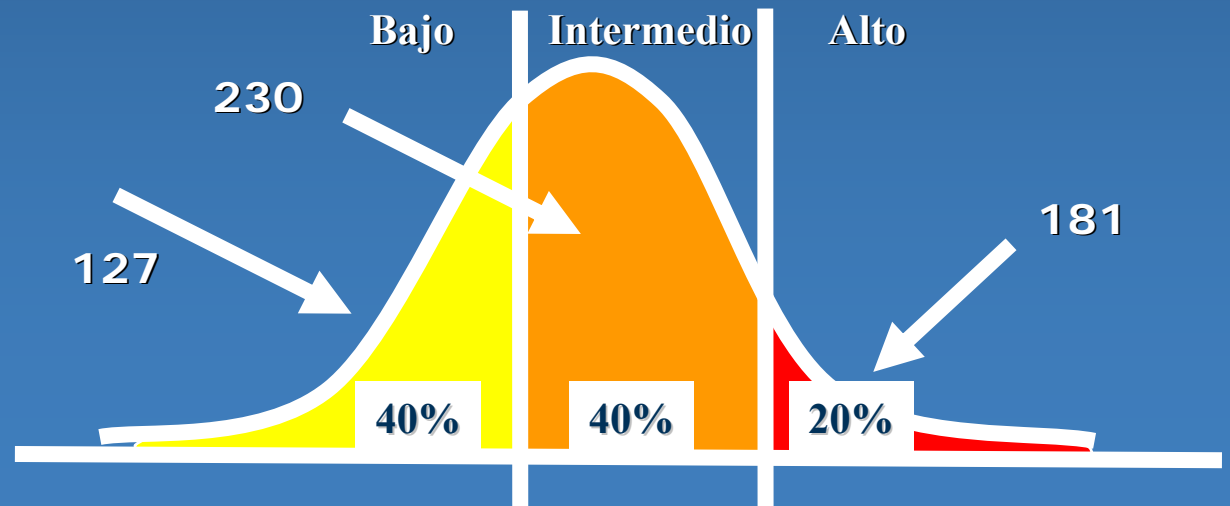


Por tanto:

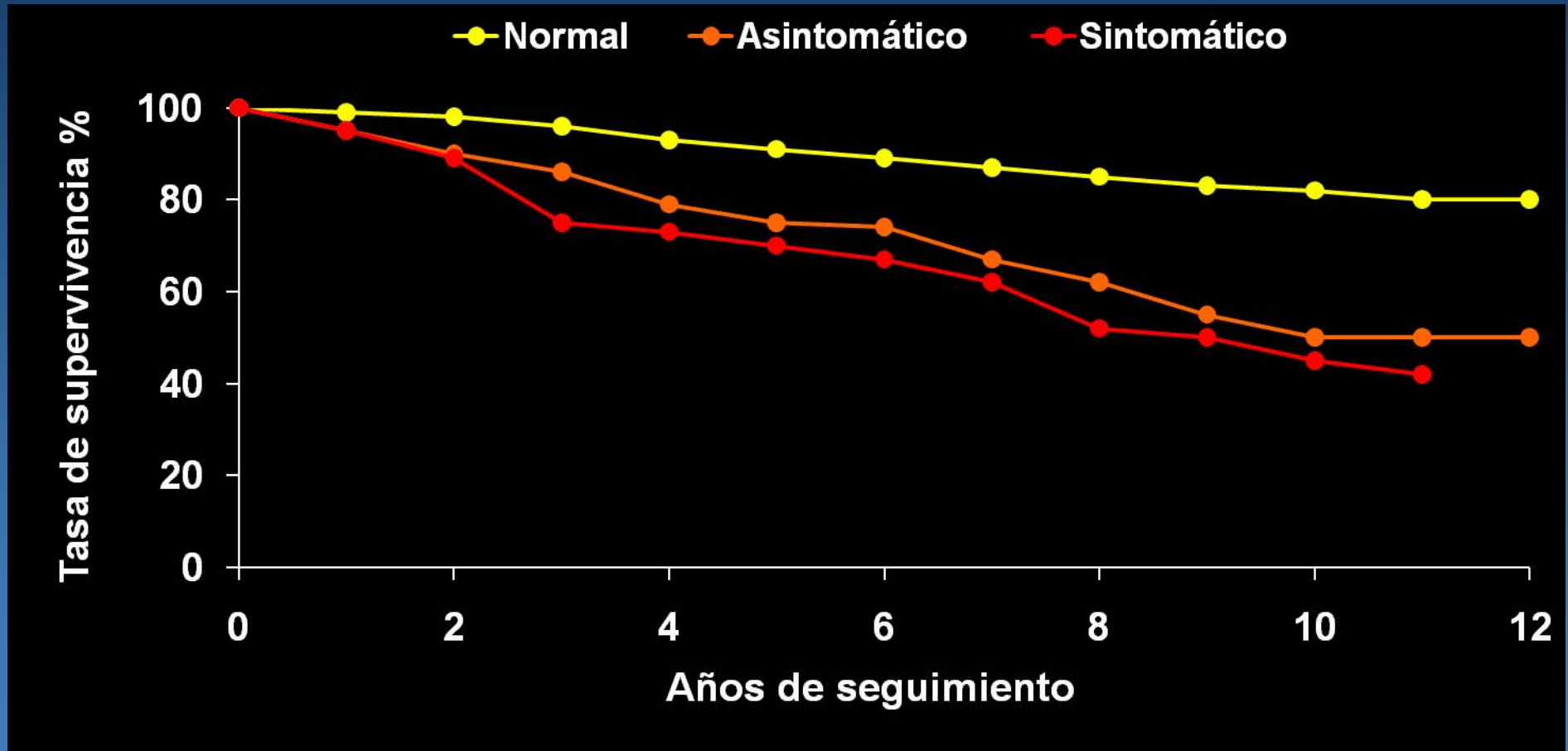
- **Eco carotidea diagnóstica en paciente con:**
 - **Ictus o AIT que puedan ser candidatos a endarterectomía**
 - **Dudoso en sujetos con enfermedad vascular en otros territorios o múltiples factores de riesgo, siempre que sean candidatos a endarterectomía**
- **Eco abdominal en:**
 - **Varones > 60 años con familiar 1er grado con AAA**
 - **Varones entre 65 y 75 años que hayan fumado**

Mejorar la estratificación del riesgo vascular

- Índice tobillo-brazo
- Grosor íntima-media carotideo e identificación de placas en carótida

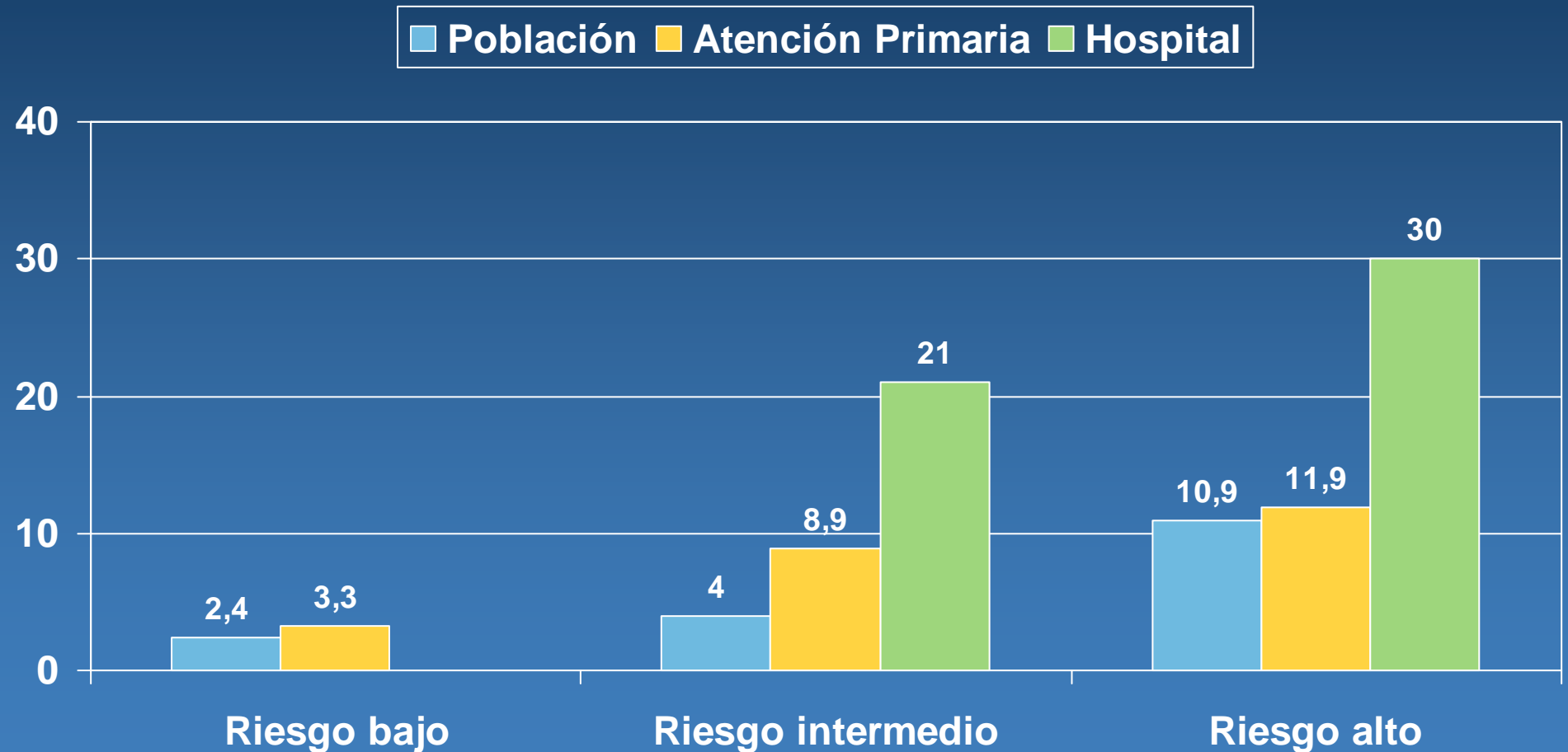


Tasa de supervivencia a 10 años en el San Diego Artery Study



Criqui MH et al. *N Engl J Med* 1992; 326: 381-6.

Prevalencia de un ITB anormal en población sana y en pacientes atendidos en consultas de riesgo y en AP >50 años



MT Alzamora et al. BMC Public Health 2010; 10: 38.

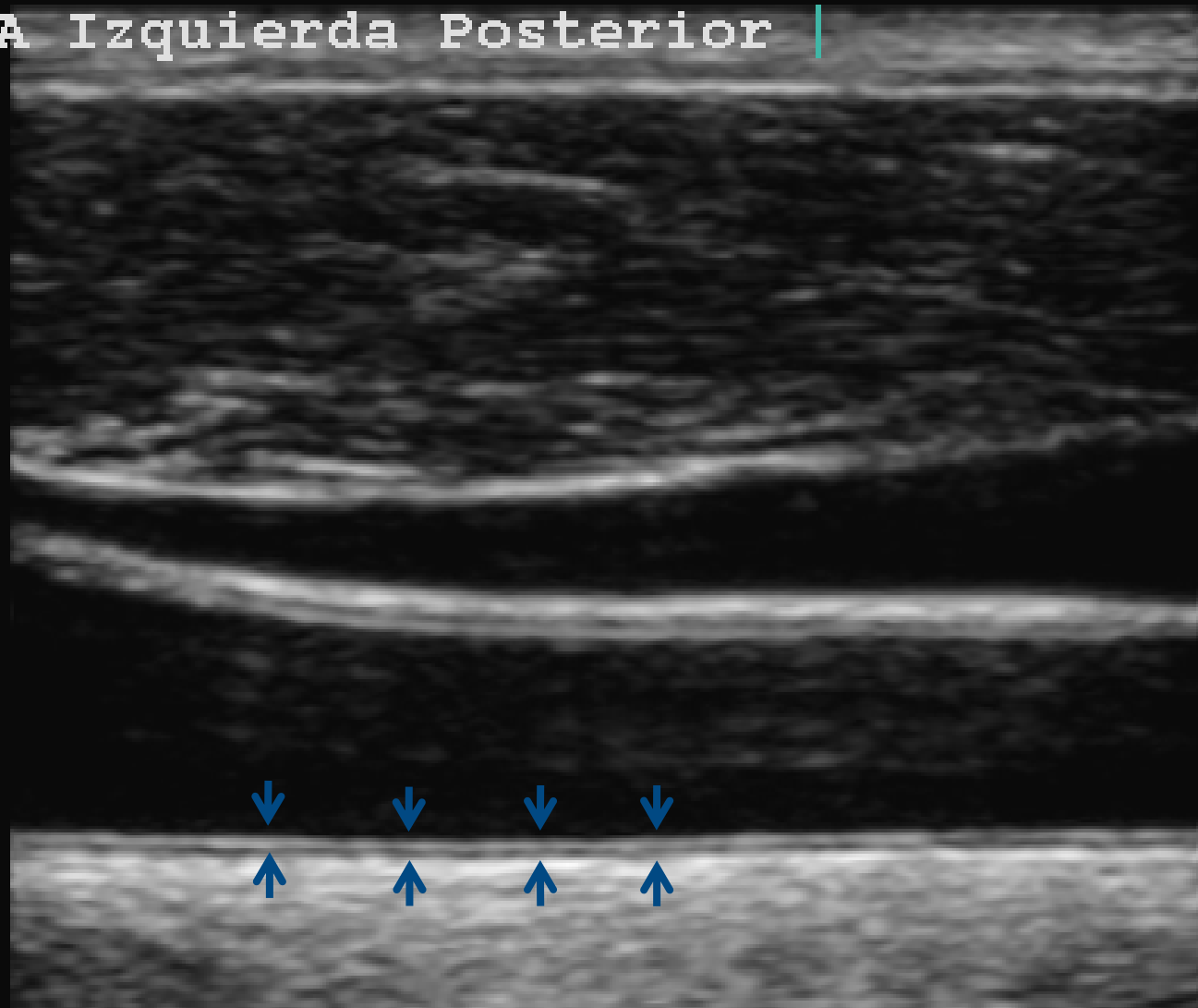
L Manzano et al. Med Clin 2007; 128:241-6.

C Lahoz et al. Clin Invest Arterioscler 2006;18:45-50.

El GIM es el espacio entre la interfase luz-íntima y media-adventicia

Gen MB

COA Izquierda Posterior



Vas
L38



CF

99%
197
2

MI
0,9

106

228814

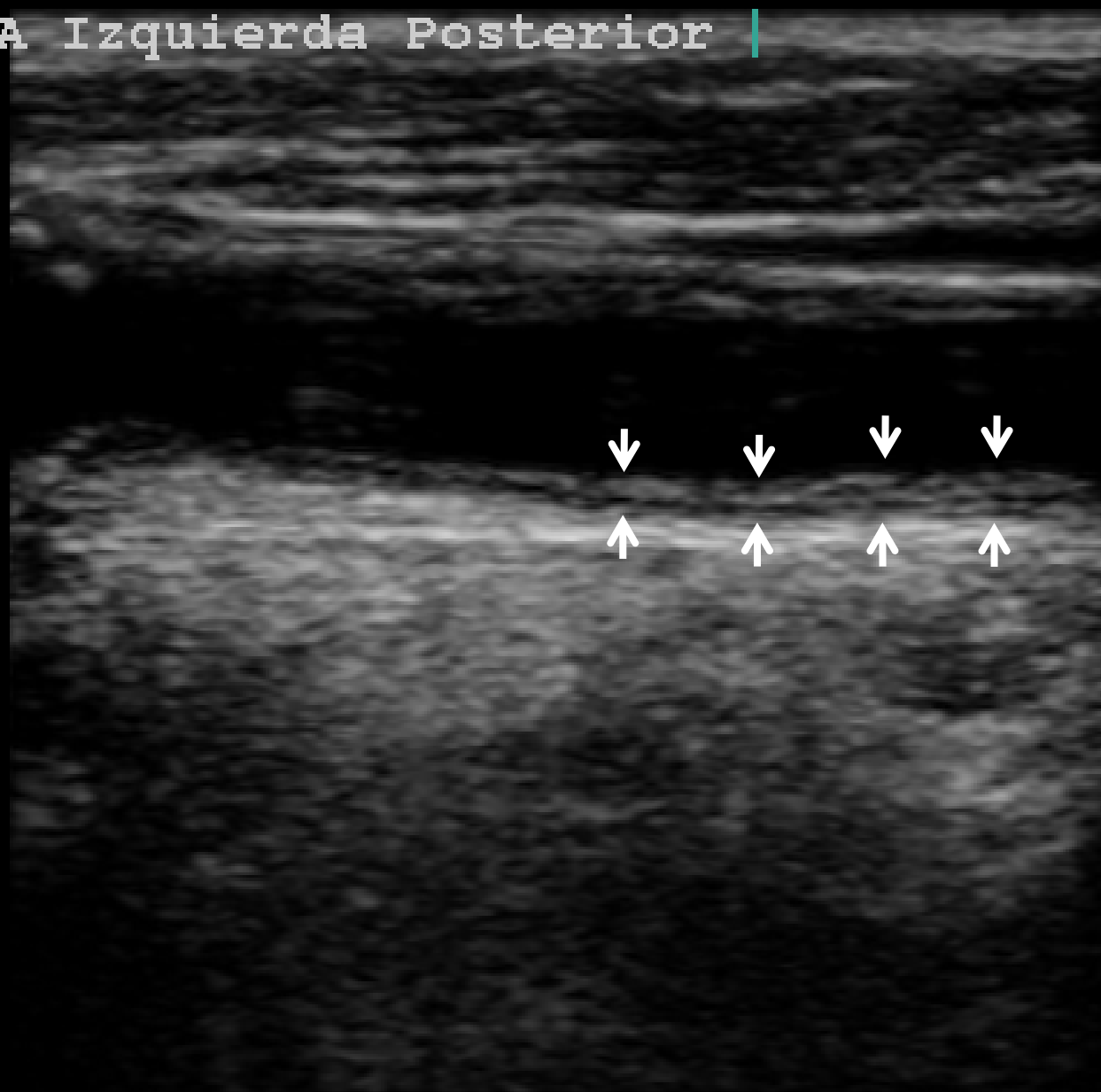
Carlos III

2008Nov05

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Gen MB

COA Izquierda Posterior



Vas
L38



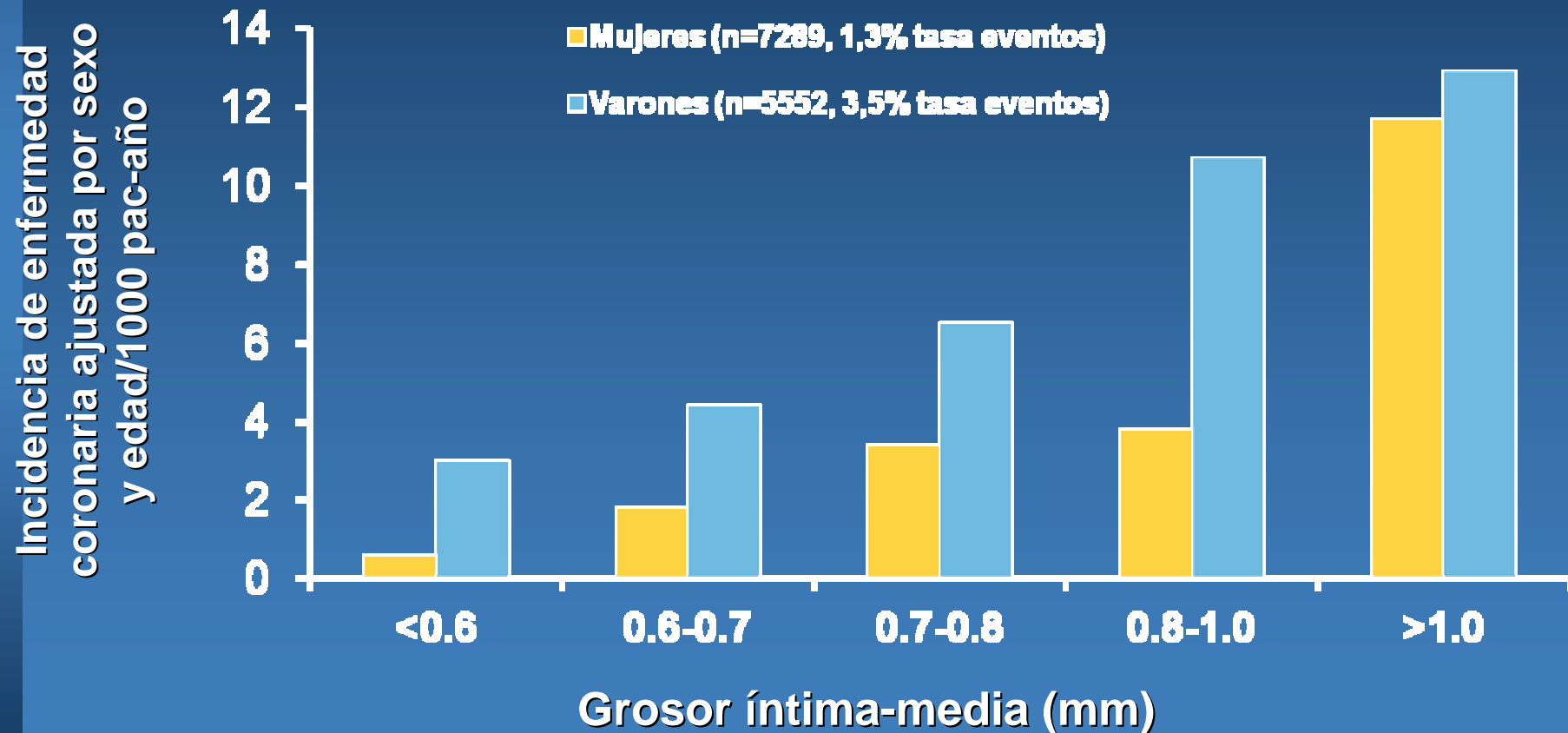
99%
167
0

MI
0,9

◀|||▶
205

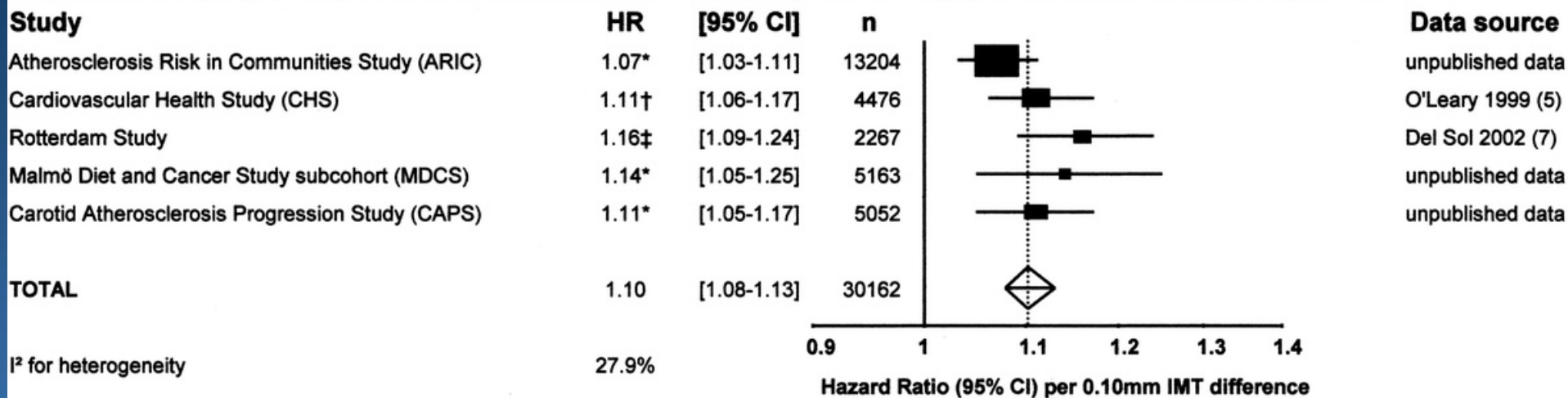
3,8

ARIC: Relación entre el GIM y el riesgo de IAM o muerte coronaria tras 5,2 años de seguimiento

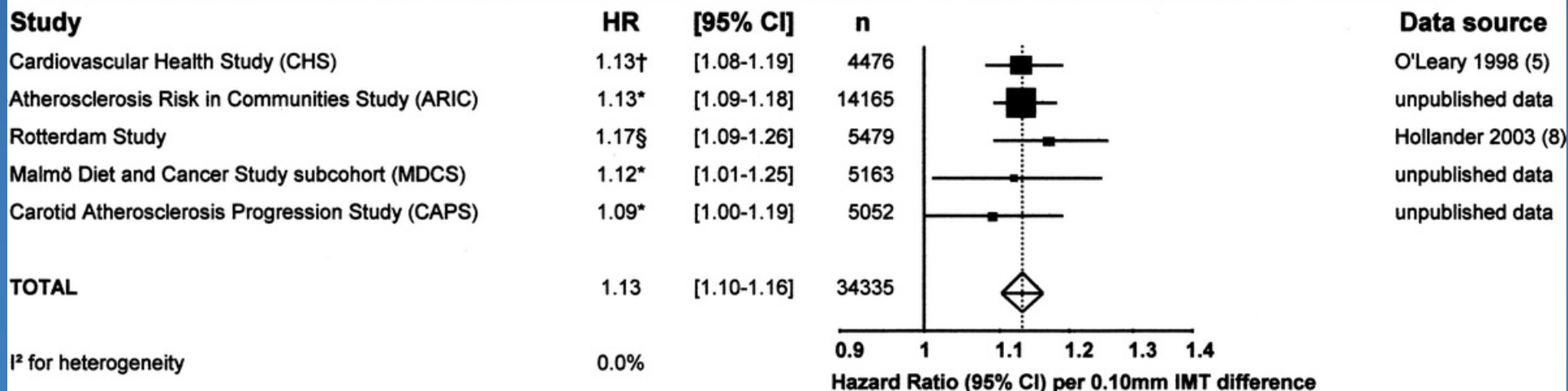


Riesgo de IAM e ictus por cada 0,1 mm de GIM de CC ajustado por edad, sexo y factores de riesgo

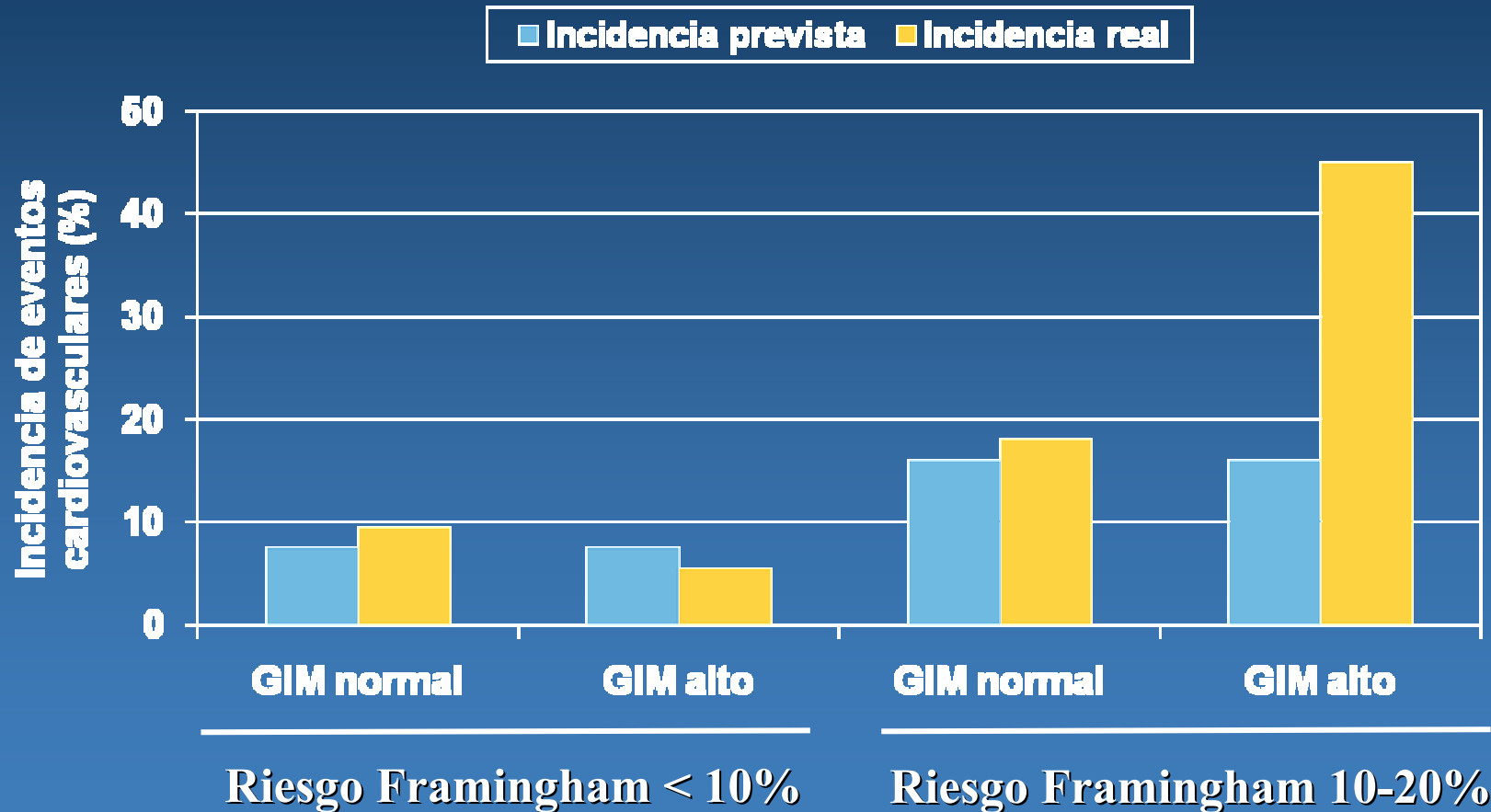
A Hazard ratio (HR) for MI per 0.1mm difference in CCA-IMT, adjusted for age, sex and other vascular risk factors



B Hazard ratio (HR) for stroke per 0.1mm difference in CCA-IMT, adjusted for age, sex and other vascular risk factors



Efecto de la determinación del GIM máximo* sobre la predicción del riesgo coronario estimado mediante Framingham



* GIM máximo categorizado por percentil

Placas en bulbo y carótida interna

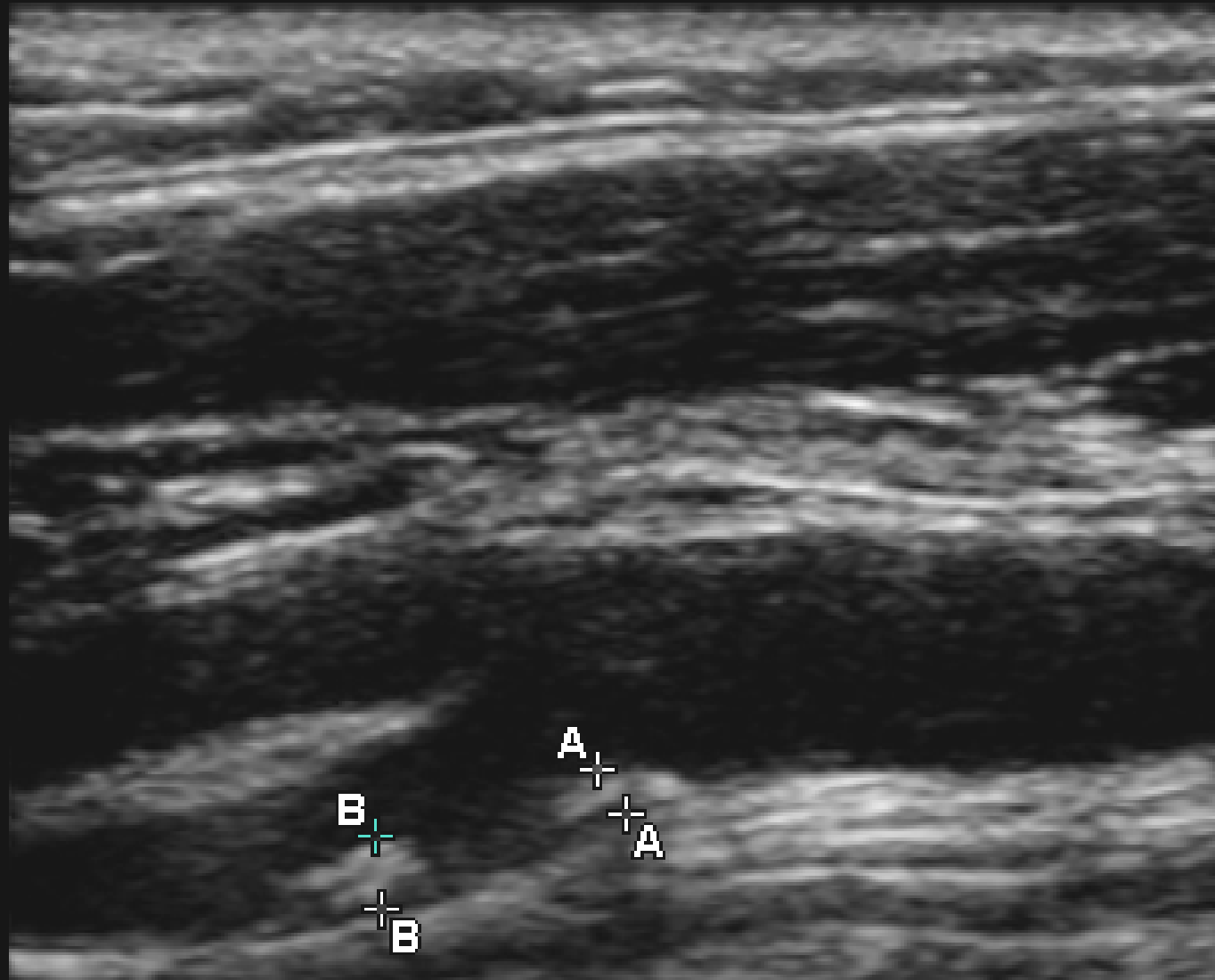
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Carlos III

2008Oct15

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en MB



Va

L30



98

20



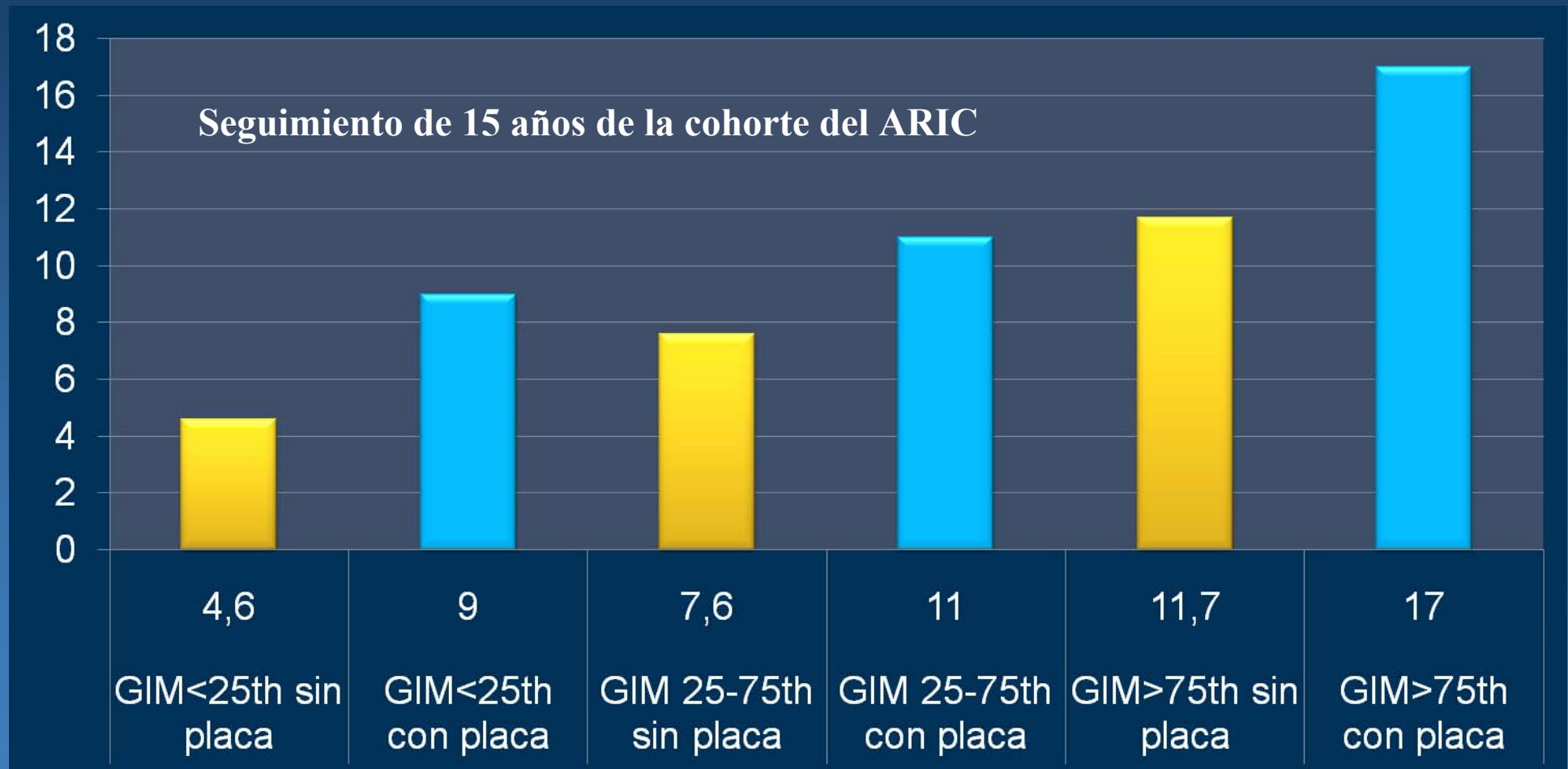
0



20



Incidencia (1000 personas-año) de enfermedad coronaria en función del GIM y la presencia de placas



Modificación del riesgo (bajada subida de un estrato de riesgo) en función de un GIM <25 percentil o > 75 percentil y/o la presencia de placas en carótidas

Un estrato menos de riesgo	Estratos de Riesgo según Framingham	Un estrato mas de riesgo
24,8%	10-20% (2229 pacientes)	13,5%
21,5%	>20% (659 pacientes)	

Reclasificación neta en el 21,7% de los participantes con riesgos intermedios, la mayoría a un estrato inferior

Por tanto, las indicaciones para realizar un ITB y/o una ecografía carotídea para mejorar la estratificación del riesgo

- **Sujetos > 50 años, sin diabetes ni enfermedad vascular conocida, y:**
 - **Riesgo intermedio : SCORE o ATP III (sobre todo si fumadores, S metabólico o insuficiencia renal) y si son atendidos en consultas de riesgo vascular**
 - **Valorar ecografía en pacientes con factores de riesgo muy alterados (HFH)**