ANGINA ESTABLE

Guías y perspectivas futuras en cardiopatía isquémica crónica.

Gonzalo Barón y Esquivias.
Servicio de Cardiología
Hospital Universitario Virgen del Rocío
Sevilla

20 de Octubre de 2011

ESQUEMA

European Heart Journal
doi:10.1093/eurheartj/ehl002

ESC Guidelines

Guidelines on the management of stable angina pectoris: full text‡

The Task Force on the Management of Stable Angina Pectoris of the European Society of Cardiology

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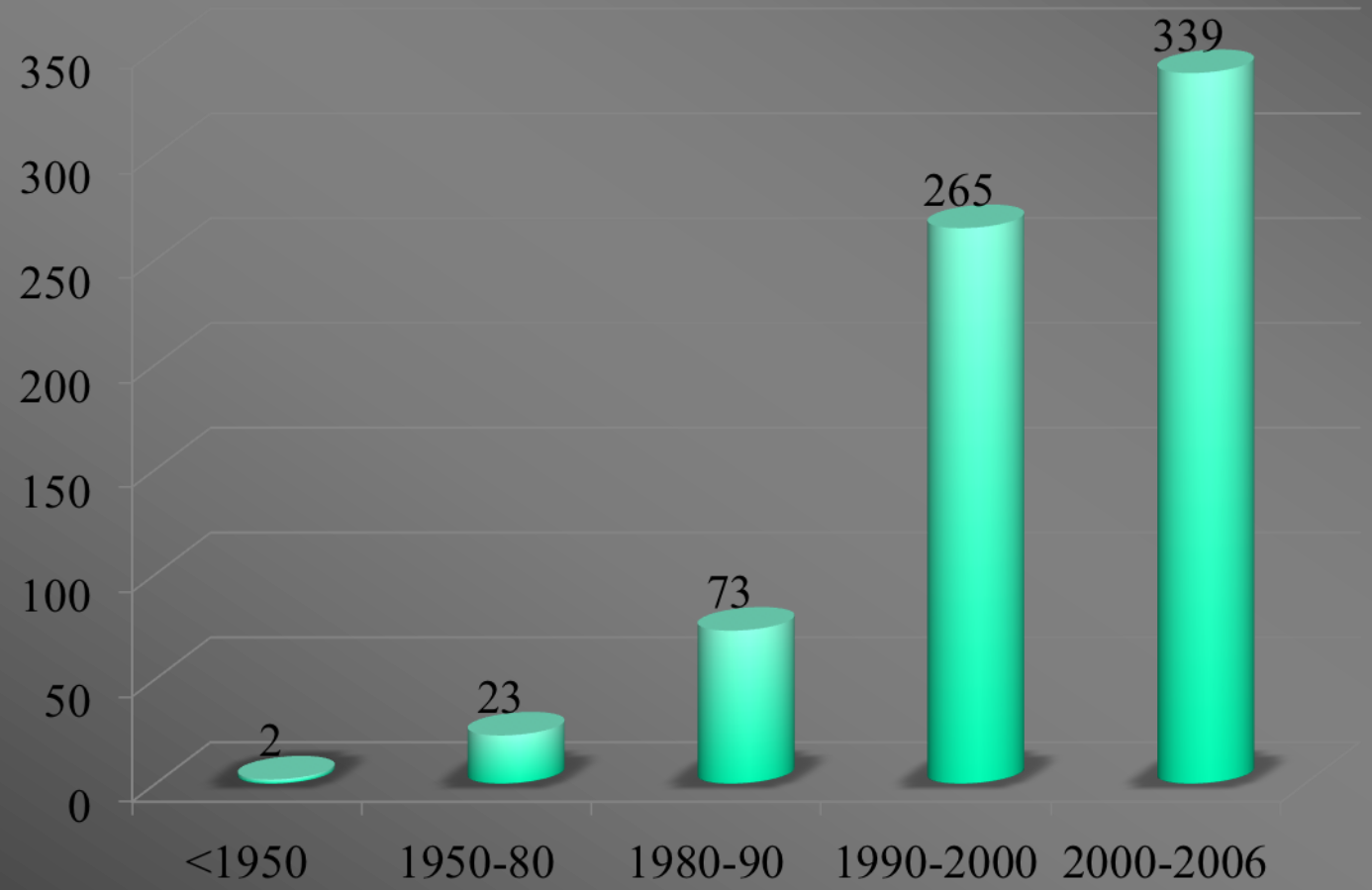
REVISIÓN GUÍAS DE 2006

683 CITAS BIBLIOGRÁFICAS



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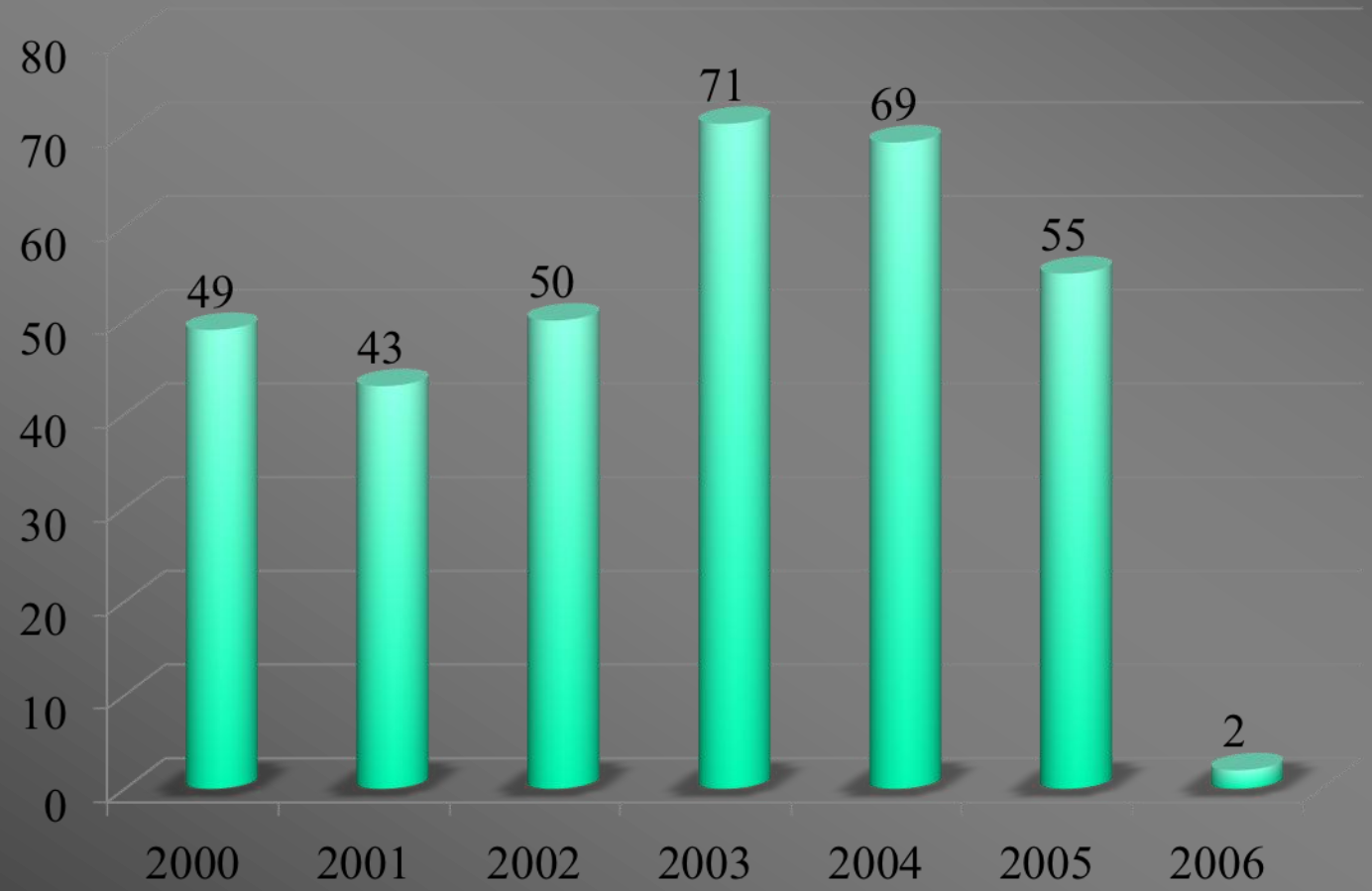
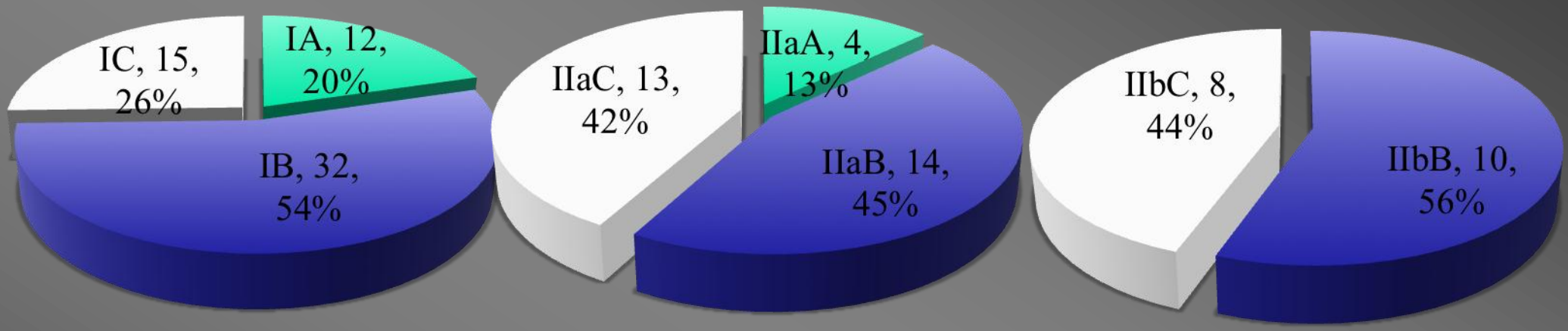


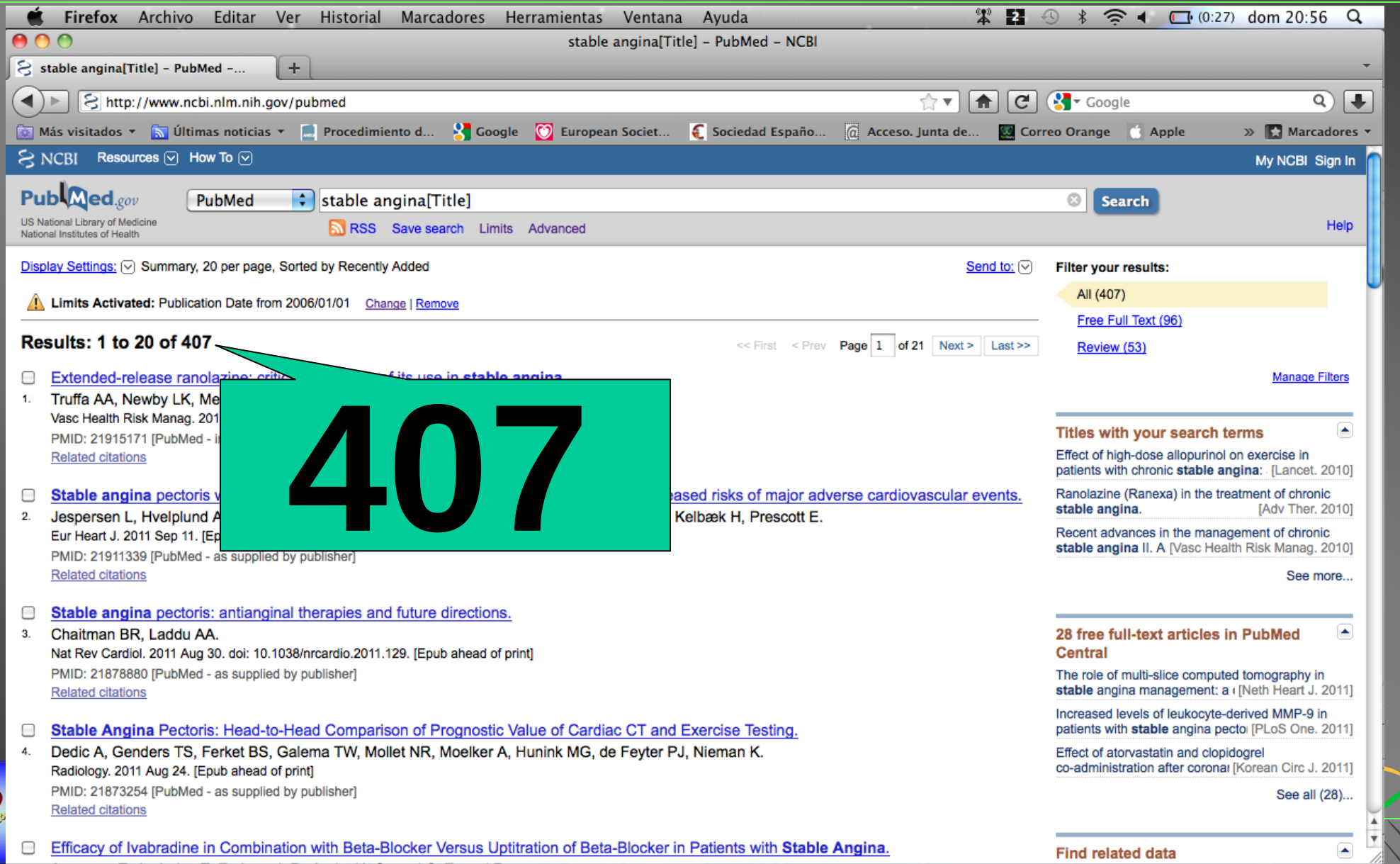
¿QUÉ GRADO DE RECOMENDACIONES HACEN LAS GUÍAS?



	A	B	C
I	2	3	15
IIa	4	14	13
IIb		10	8
III			

108 Recomendaciones

¿QUÉ SE HA PUBLICADO DESDE 2005 EN ANGINA ESTABLE?



ESQUEMA

ÍNDICE DE CONTENIDOS

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Los comentarios-anotaciones (*) incluidos en esta traducción de las Guías han sido realizados por la Dra. María Ángeles Alonso García (Madrid, España). Correo electrónico: angelesalonsog@secardiologia.es.

Full English text available from: www.revespcardiol.org

Epidemiologia: Estudio CADENCE
APSIS Epidemiología

Investigaciones no invasivas:

- Serum creatinine
- Ecocardiografía: Left Atrial distensibility and E/e'
  Disincronia en eco= falso + en SPECT
- Ergometría
- AngioTAC coronario + RMN
- Myocardial perfusion scintigraphy in Diabetic

Tratamiento:

- Long term BB
- Nicorandil, Ivabradina Ranolazina
- High dosis Alopurinol
- Trapidil
- enhanced external counterpulsation
- COURAGE trial
- HTA treatment: The PRIME study
- Cardiac stem cell
- Spinal cord stimulation
- ACTION Trial
- METRO Trial
- PISA Trial
- TRIADA Trial
- APSIS Trial

EPIDEMIOLOGÍA

The Prevalence of Weekly Angina Among Patients With Chronic Stable Angina in Primary Care Practices

The Coronary Artery Disease in General Practice (CADENCE) Study

John F. Beltrame, BSc, BMBS, FRACP, PhD; Andrew J. Weekes, BMedSci, BMBS; Claire Morgan, BPhysio; Rosanna Tavella, BSc(Hons); John A. Spertus, MD, MPH, FACC

Arch Intern Med, 2009; 169: 1491-9

1,5% de las visitas en Atención Primaria

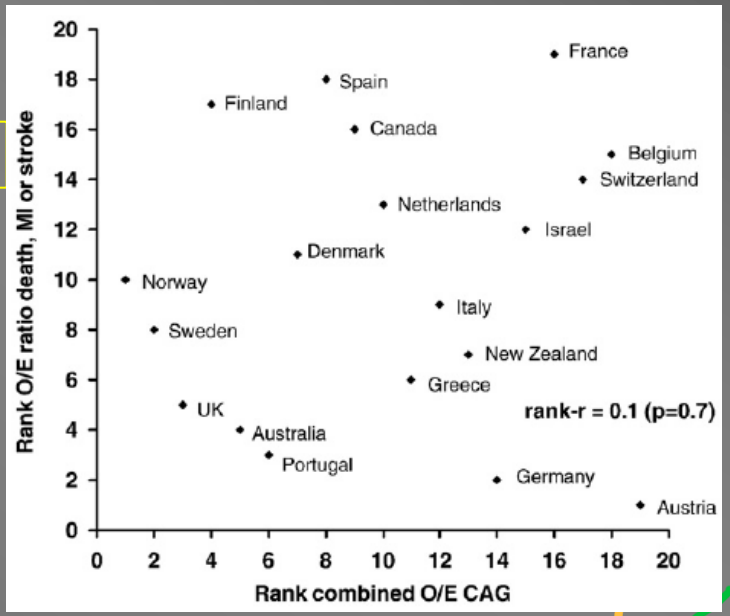
1 de cada 3 pacientes experimentan > 1 crisis de angina a la semana

Los médicos sobrevaloran el buen control de sus pacientes

Correlates of coronary angiography in patients with stable angina and geographical differences in its utilisation: The ACTION experience☆

Zoltán Vokó [a], Nicolas Danchin [b], Sophie de Brouwer [c], Bridget-Anne Kirwan [c], Philip A. Poole-Wilson [d], Jacobus Lubsen [d,c,*]
on behalf of the ACTION (A Coronary disease Trial Investigating Outcome with Nifedipine GITS) investigators

Int J Cardiol, 2010; 138: 56-62



DIAGNÓSTICO. TEST NO INVASIVOS. CREATININA EN SANGRE

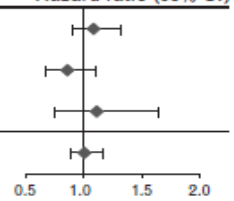
Uric acid and other renal function parameters in patients with stable angina pectoris participating in the ACTION trial: impact of nifedipine GITS (gastro-intestinal therapeutic system) and relation to outcome

Luis M. Ruilope[a], Bridget-Anne Kirwan[b], Sophie de Brouwer[b], Nicolas Danchin[c], Keith A.A. Fox[d], Gilbert Wagener[e], Julian Segura[a], Philip A. Poole-Wilson[f] and Jacobus Lubsen[b,g], on behalf of the ACTION investigators

Cardiovascular death or confirmed myocardial infarction

Markers of renal dysfunction	No. of patients Nif/Pla	No. of patients with event (rate) Nifedipine/Placebo
None	2389/2371	226 (1.96)/205 (1.79)
One	1129/1181	113 (2.09)/139 (2.45)
Two or three	269/262	54 (4.46)/47 (4.01)
All patients	3787/3814	393 (2.16)/391 (2.13)

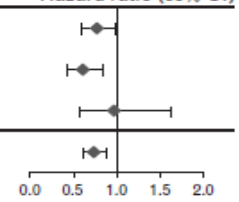
Hazard ratio (95% CI)



Any stroke or transient ischaemic attack

Markers of renal dysfunction	No. of patients Nif/Pla	No. of patients with event (rate) Nifedipine/Placebo
None	2389/2371	102 (0.87)/131 (1.15)
One	1129/1181	56 (1.04)/97 (1.72)
Two or three	269/262	28 (2.34)/28 (2.42)
All patients	3787/3814	186 (1.02)/256 (1.40)

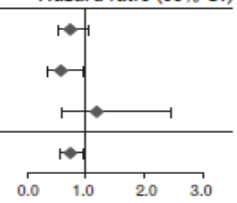
Hazard ratio (95% CI)



Confirmed new overt heart failure

Markers of renal dysfunction	No. of patients Nif/Pla	No. of patients with event (rate) Nifedipine/Placebo
None	2389/2371	49 (0.42)/67 (0.58)
One	1129/1181	21 (0.38)/40 (0.69)
Two or three	269/262	16 (1.30)/13 (1.08)
All patients	3787/3814	86 (0.46)/120 (0.64)

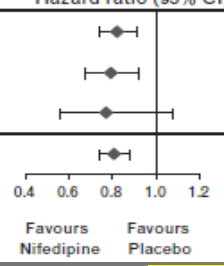
Hazard ratio (95% CI)



Any coronary procedure

Markers of renal dysfunction	No. of patients Nif/Pla	No. of patients with event (rate) Nifedipine/Placebo
None	2389/2371	654 (6.54)/762 (7.98)
One	1129/1181	293 (6.15)/377 (7.77)
Two or three	269/262	63 (5.84)/77 (7.58)
All patients	3787/3814	1010 (6.37)/1216 (7.89)

Hazard ratio (95% CI)



El Acido Úrico no es predictor, pero la Creatinina y el Aclaramiento de Creatinina son potentes predictores de IAM, Mortalidad CV y total, ICC, AIT, e Ictus

J Hypertens, 2007; 25: 1711-8

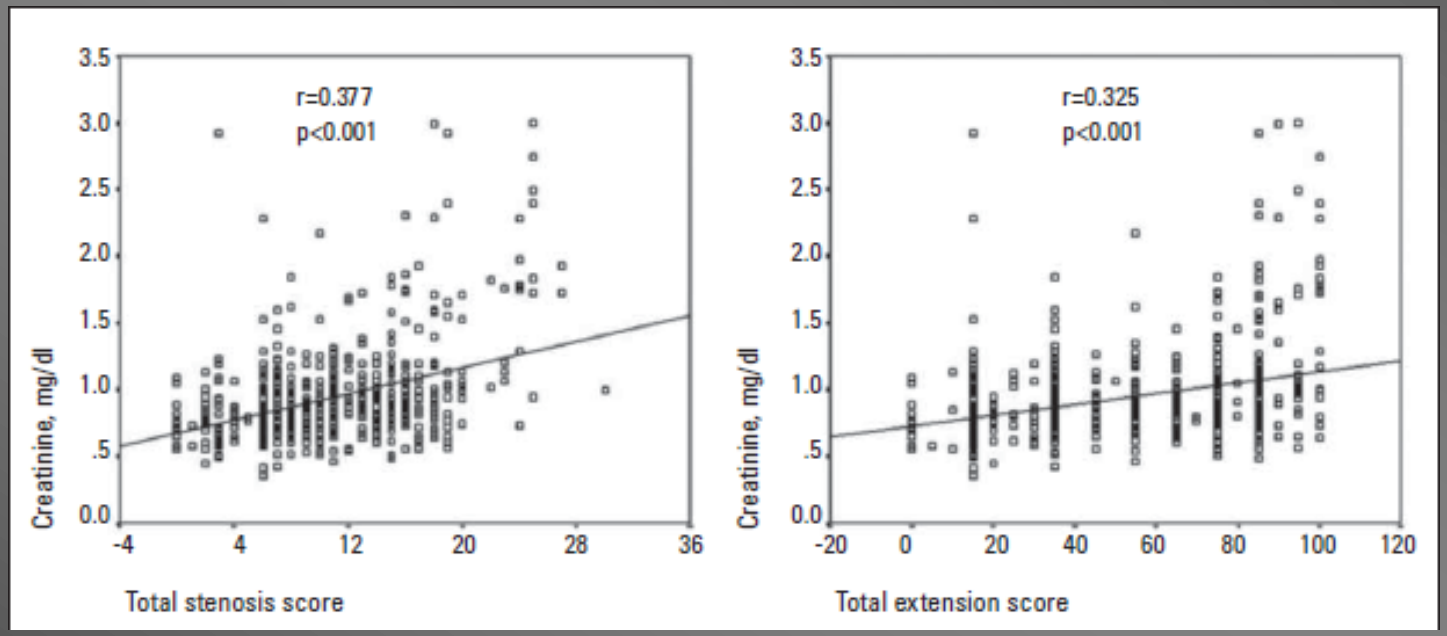
DIAGNÓSTICO. TEST NO INVASIVOS. CREATININA EN SANGRE

Serum creatinine is independently associated with angiographic extent of coronary artery disease in patients with stable angina pectoris

Kararlı anjina pektorisli hastalarda serum kreatinini bağımsız olarak koroner arter hastalığının anjiyografik yaygınlığı ile ilişkilidir

Şule Korkmaz, Barcu Demirkan, Hakan Altay[1], Mellem Refiker Ege[2], Vedat Çaldır, Mehmet Birhan Yılmaz[3], Yeşim Güray, Ümit Güray, Hatice Şaşmaz

Clinic of Cardiology, Türkiye Yüksek İhtisas Hospital, Ankara
[1]Department of Cardiology, Başkent University, Adana Teaching and Research Hospital, Adana,
[2]Clinic of Cardiology, Yalova State Hospital, Yalova
[3]Department of Cardiology, Faculty of Medicine, Cumhuriyet University, Sivas-*Turkey*



892 pacientes

Anadolu Kardiyol Derg, 2011; 11: 407-13

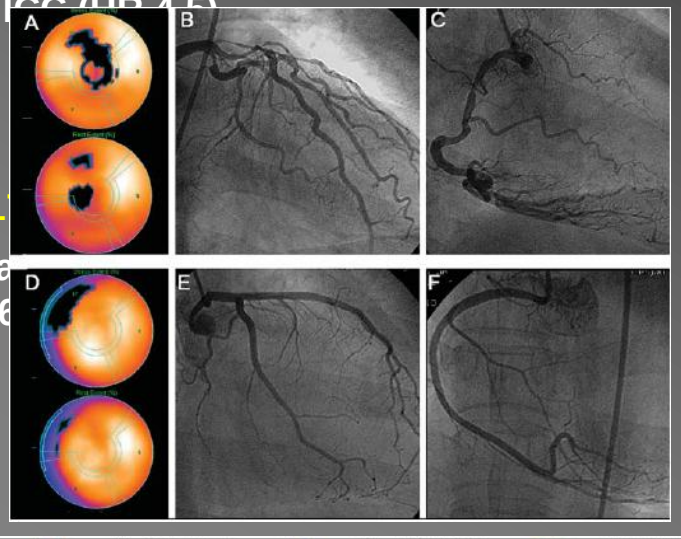
DIAGNÓSTICO. TEST NO INVASIVOS. ECOCARDIOGRAFÍA

Predictive value of local and core laboratory echocardiographic assessment of cardiac function in patients with chronic stable angina: The ACTION study

Anthony M. Dart [a,*], Jan Erik Otterstad [b], Bridget-Anne Kirwan [c], John D. Parker [d], Sophie de Brouwer [c], Philip A. Poole-Wilson [e], Jacobus Lubsen [c,f], on behalf of the ACTION investigators

Eur J Echocardiography, 2007; 8: 275-83

FE medida centralmente(Core lab) es el más potente predictor de mortalidad (HR 2,5), IM Stroke/TIA e ICC (HR 4,5)



Evidence of Improved Regional Myocardial Function in Patients With Chronic Stable Angina and Apparent Normal Ventricular Function—A Tissue Doppler Study Before and After Percutaneous Coronary Intervention

Gerhard-Paul Diller, MD,* Balvinder S. Wasan, MRCP, Simon A. McG Thom, FRCP, Rodney A. Foale, FRCP, Alun D. Hughes, PhD, Darrel P. Francis, MRCP, and Jamil Mayet, MD, *London, United Kingdom*

J Am Soc Echocardiogr, 2009; 22: 1

Los parámetros de función sistólica
después de un ICP y persiste a las 6

Left Atrial Distensibility and E/e' for Estimating Left Ventricular Filling Pressure in Patients With Stable Angina

– A Comparative Echocardiography and Catheterization Study –

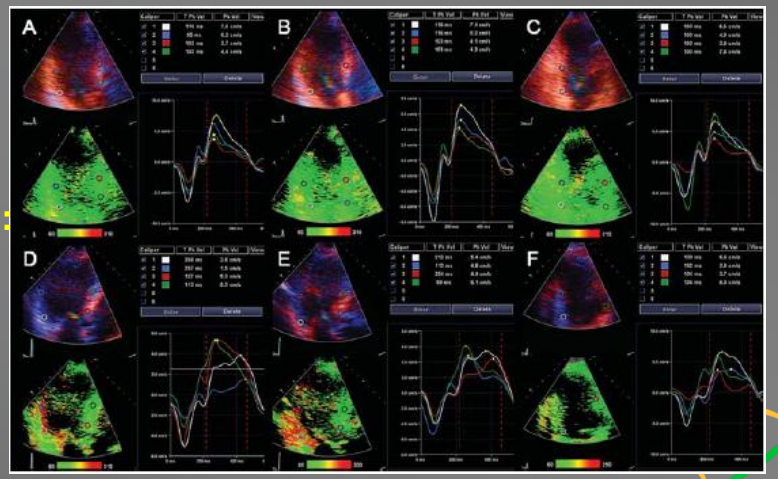
Shih-Hung Hsiao, MD; Kuan-Rau Chiou, MD; Ko-Long Lin, MD; Shih-Kai Lin, MD; Wei-Chun Huang, MD; Feng-You Kuo, MD; Chin-Chang Cheng, MD; Chun-Peng Liu, MD

Circ J, 2011; 75: 1942-50

Dyssynchrony contributes to false-positive myocardial perfusion SPECT results in patients with stable angina

Jung Sun Cho, Ho-Joong Youn*, Eun-Joo Cho, Sung-Ho Her, Ju Yeal Baek, Mahn-Won Park, Sung Gyu Yoon, Jeong U. Baeg, Chan Seok Park, Mi-Jeong Kim, Hae-Ok Jung, Hui-Kyung Jeon, and Jae-Hyung Kim

Eur J Echocardiography, 2011; 12:



DIAGNÓSTICO. TEST NO INVASIVOS. ERGOMETRÍA

Relationship Between Functional Exercise Capacity and Functional Stenosis in Patients With Stable Angina and Intermediate Coronary Stenosis

Shinichiro Tanaka, MD; Toshiyuki Noda, MD; Tomonori Segawa, MD;
Taro Minagawa, MD*; Sachiro Watanabe, MD; Shinya Minatoguchi, MD**

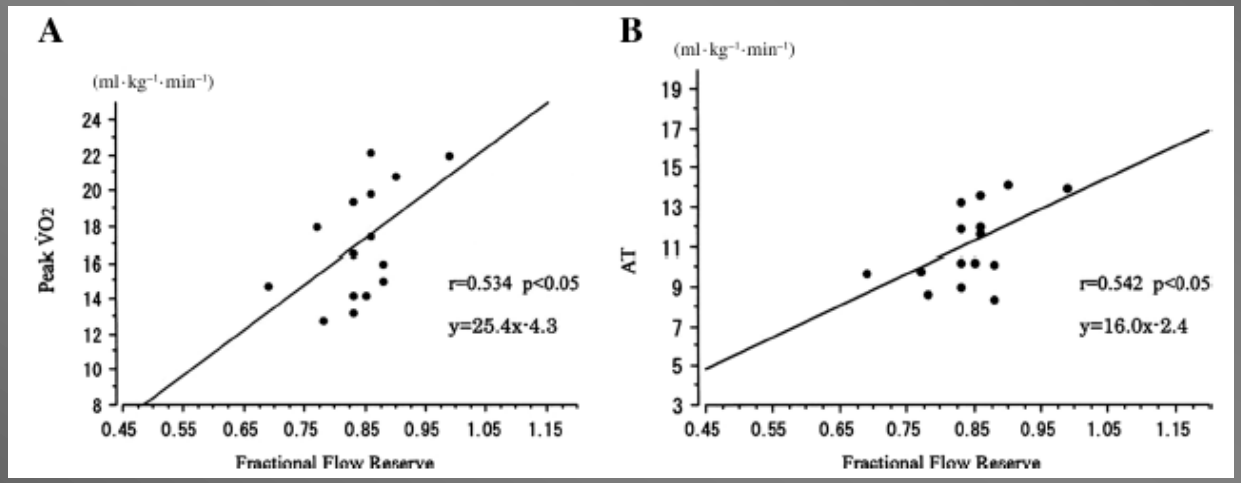


Figure 4. Relationship between fractional flow reserve and parameters reflecting exercise capacity. (**A**) Peak $\dot{V}O_2$ vs fractional flow reserve; (**B**) AT vs fractional flow reserve. Fractional flow reserve showed a positive correlation with exercise capacity. Peak $\dot{V}O_2$, oxygen uptake at peak exercise; AT, anaerobic threshold at the corresponding oxygen uptake.

La capacidad de ejercicio medida en la ergometría se correlaciona con los índices funcionales de isquemia miocárdica

Circ J, 2009; 73: 2308-14

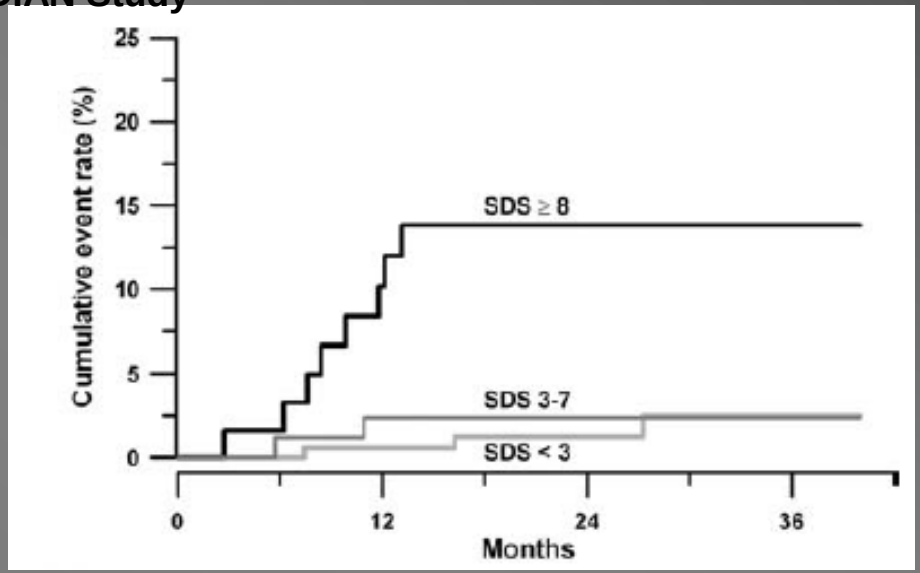
DIAGNÓSTICO. TEST NO INVASIVOS. SPECT EN DIABÉTICOS

Prognostic value of myocardial perfusion scintigraphy in type 2 diabetic patients with mild, stable angina pectoris

Jacobijne J. Wiersma, MD, PhD,[a] Hein J. Verberne, MD, PhD,[b] Wik L. ten Holt, MD,[c] Ineke M. Radder,[a] Lea M. Dijksman, MSc,[a] Berthe L. F. van Eck-Smit, MD, PhD,[b] Mieke D. Trip, MD, PhD,[a] Jan G. P. Tijssen, PhD,[a] and Jan J. Piek, MD, PhD[a]

J Nucl Cardiol, 2009; 16: 524-32

MERIDIAN Study



Los pacientes con diabetes tipo 2 y angina sin isquemia o con isquemia moderada en SPECT tienen un bajo índice de eventos anuales mientras que aumenta 3-6 veces en pacients con isquemia severa

Calcification of the Thoracic Aorta as Detected by Spiral Computed Tomography Among Stable Angina Pectoris Patients

Association With Cardiovascular Events and Death

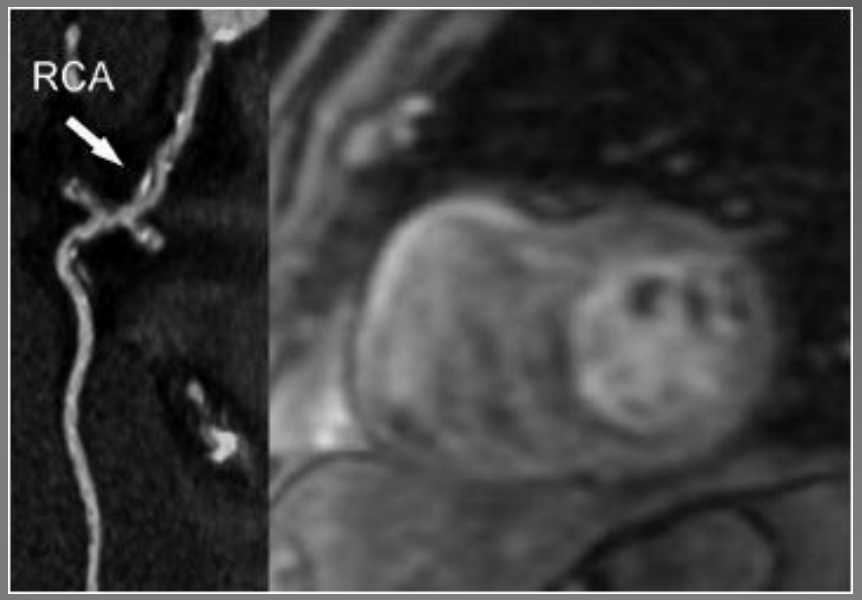
Alon Eisen, MD; Alexander Tenenbaum, MD; Nira Koren-Morag, PhD; David Tanne, MD; Joseph Shemesh, MD; Massimo Imazio, MD; Enrique Z. Fisman, MD; Michael Motro, MD; Ehud Schwammenthal, MD; Yehuda Adler, MD

DIAGNÓSTICO. TEST NO INVASIVOS. ANGIOTAC Y RMN

Comprehensive Assessment of Coronary Artery Stenoses

Computed Tomography Coronary Angiography
Versus Conventional Coronary Angiography and Correlation
With Fractional Flow Reserve in Patients With Stable Angina

J Am Coll Cardiol, 2008 52: 636-43



Circulation Journal
Official Journal of the Japanese Circulation Society
http://www.j-circ.or.jp

ORIGINAL ARTICLE
Imaging

Non-Invasive Diagnostic Workup of Patients With Suspected Stable Angina by Combined Computed Tomography Coronary Angiography and Magnetic Resonance Perfusion Imaging

Sharon W. Kirschbaum; Koen Nieman; Tirza Springeling; Annick C. Weustink; Steve Ramcharitar; Carlos van Mieghem; Alexia Rossi; Eric Duckers; Patrick W. Serruys; Eric Boersma; Pim J. de Feyter; Robert-Jan M. van Geuns

Circ J, 2011; 75: 1678-84

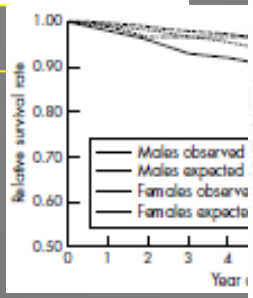
El AngioTAc coronario como 1er test diagnóstico en pacientes con sospecha de AE descarta dicha patología en un elevado número de pacientes.
La RMN contribuye a detectar el significado funcional de los hallazgos del AngioTAC.

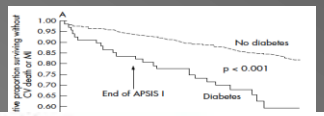
PRONÓSTICO

Favourable long term prognosis in stable angina pectoris: an extended follow up of the angina prognosis study in Stockholm (APSIS)

P Hjemdahl, S V Eriksson, C Held, L Forslund, P Näsman, N Rehnqvist

Heart, 2006; 92: 177-82





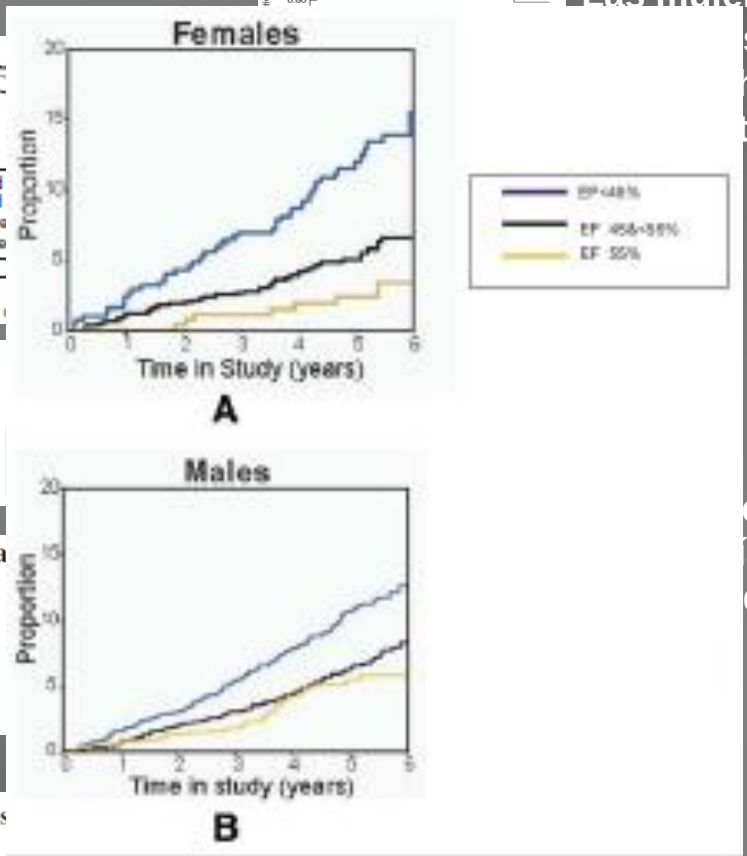
Coronary and Aortic Calcifications Inter-relationship in Stable Angina Pectoris: A Coronary Disease Trial Investigating Outcome with Nifedipine GITS (ACTION) – Israeli Spiral Computed Tomography Substudy

Alon Eisen MD[1], Alexander Tenenbaum MD[1], Nira Koren-Morag PhD[1], David Tanne MD[2], Joseph Shemesh MD[1], Avivit Golan MD[3], Enrique Z. Fisman MD[1], Michael Motro MD[1], Ehud Schwammenthal MD[1] and Yehuda Adler MD[1,3]

Calcification of the Thoracic Aorta as Detected by Spira Computed Tomography Among Stable Angina Pectoris Patients

Association With Cardiovascular Events and Death

Alon Eisen, MD; Alexander Tenenbaum, MD; Nira Koren-Morag, PhD; David Tanne, MD; Joseph Shemesh, MD; Massimo Imazio, MD; Enrique Z. Fisman, MD; Michael Motro, MD; Ehud Schwammenthal, MD; Yehuda Adler, MD



Gender Differences in Cardiac Remodeling and Clinical Outcomes in Chronic Stable Angina Pectoris (from the ACTION Trial)

Bonnie Ky, MD[a,*], Bridget-Anne Kirwan, PhD[b], Sophie de Brouwer, PhD[b], Jacobus Lubsen, MD, PhD[b,c], Philip Poole-Wilson, MD[d], Jan-Erik Otterstad, MD[e], Stephen E. Kimmel, MD[a], and Martin St. John Sutton, MBBS[a]

Am J Cardiol. 2010; 105(7): 943-7

Las mujeres con AE tienen mortalidad su población de referencia, hombres tienen más.
tes, IAM previo y la HTA son predictores de IAM y de muerte CV

erte asociación entre la existencia a coronaria y la severidad de la de la aorta en pacientes con AE.

Las mujeres con AE tienen peor evolución con FE baja.

TRATAMIENTO. OPCIONES DE TRATAMIENTO

Optimal Medical Therapy with or without PCI for Stable Coronary Disease

William E. Boden, M.D., Robert A. O'Rourke, M.D., Koon K. Teo, M.B., B.Ch., Ph.D., Pamela M. Hartigan, Ph.D., David J. Maron, M.D., William J. Kostuk, M.D., Merril Knudtson, M.D., Marcin Dada, M.D., Paul Casperson, Ph.D., Crystal L. Harris, Pharm.D., Bernard R. Chaitman, M.D., Leslee Shaw, Ph.D., Gilbert Gosselin, M.D., Shah Nawaz, M.D., Lawrence M. Title, M.D., Gerald Gau, M.D., Alvin S. Blaustein, M.D., David C. Booth, M.D., Eric R. Bates, M.D., John A. Spertus, M.D., M.P.H., Daniel S. Berman, M.D., G.B. John Mancini, M.D., and William S. Weintraub, M.D., for the COURAGE Trial Research Group*

N Engl J Med, 2007; 356: 1503-16

Impact of Optimal Medical Therapy With or Without Percutaneous Coronary Intervention on Long-Term Cardiovascular End Points in Patients With Stable Coronary Artery Disease (from the COURAGE Trial)

William E. Boden, MD[a,*], Robert A. O'Rourke, MD[c], Koon K. Teo, MB, BCh, PhD[1], David J. Maron, MD[d], Pamela M. Hartigan, PhD[e], Steven P. Sedlis, MD[b], Marcin Dada, MD[f], Mohammed Labedi, MD[a], John A. Spertus, MD, MPH[g], William J. Kostuk, MD[m], Daniel S. Berman, MD[i], Leslee J. Shaw, PhD[j], Bernard R. Chaitman, MD[h], G.B. John Mancini, MD[a], and William S. Weintraub, MD[k], on Behalf of the COURAGE Trial Investigators

Am J Cardiol, 2009; 104: 1-4

Outcome of patients with stable angina pectoris treated with or without percutaneous coronary intervention

Ye Gu, Yongjun Hu, Liqun Hu, Zhong Cheng and Lun Li

Cardiol J, 2008; 15: 226-9

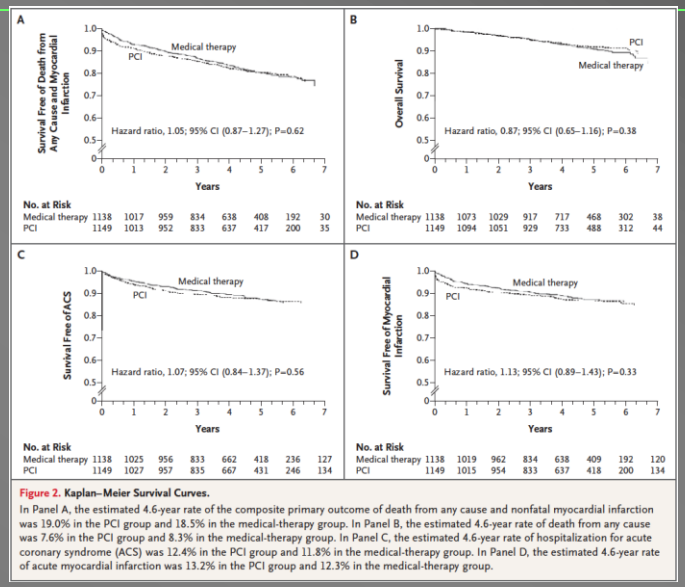


Figure 2. Kaplan–Meier Survival Curves.
In Panel A, the estimated 4.6-year rate of the composite primary outcome of death from any cause and nonfatal myocardial infarction was 19.0% in the PCI group and 18.5% in the medical-therapy group. In Panel B, the estimated 4.6-year rate of death from any cause was 7.6% in the PCI group and 8.3% in the medical-therapy group. In Panel C, the estimated 4.6-year rate of hospitalization for acute coronary syndrome (ACS) was 12.4% in the PCI group and 11.8% in the medical-therapy group. In Panel D, the estimated 4.6-year rate of acute myocardial infarction was 13.2% in the PCI group and 12.3% in the medical-therapy group.

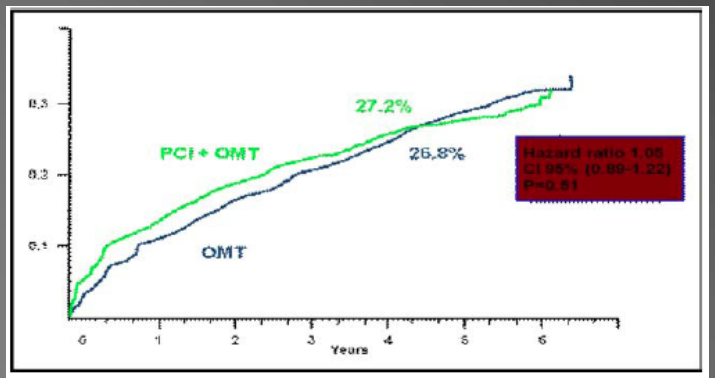


Figure 3. Kaplan-Meier curve for tertiary outcome of the composite of cardiac death, MI, stroke, and hospitalization for ACS during long-term follow-up for the 2 treatment groups (PCI + OMT vs OMT alone).

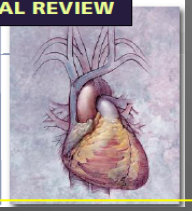
En pacientes con AE, el Intervencionismo coronario añadido al tratamiento médico óptimo como tratamiento inicial NO REDUCE el riesgo de muerte, IAM o otros eventos CV mayores

JAOA
THE JOURNAL OF THE AMERICAN OSTEOPATHIC ASSOCIATION

EVIDENCE-BASED CLINCIAL REVIEW

Stable Angina Pectoris: What Does the Current Clinical Evidence Tell Us?

Kenneth J. Tobin, DO



J Am Osteopath Assoc, 2010; 110(7): 364-70

El tratamiento farmacológico agresivo es un primer escalón apropiado en el tratamiento de la enfermedad coronaria

TRATAMIENTO. BÚSQUEDA EN PUBMED

TRATAMIENTO FARMACOLÓGICO. IVABRADINE

Antianginal Efficacy and Safety of Ivabradine Compared with Amlodipine in Patients with Stable Effort Angina Pectoris

A 3-Month Randomised, Double-Blind, Multicentre, Noninferiority Trial

Witold Ruzyllo,[1] Michal Tendera,[2] Ian Ford[3] and Kim M. Fox[4]

Drugs, 2007; 67: 393-405

In summary, in patients with stable angina, ivabradine 7.5mg or 10mg twice daily was shown to have similar efficacy to amlodipine 10mg once daily in reducing anginal symptoms. Ivabradine was superior to amlodipine in reducing myocardial oxygen consumption as demonstrated by the significantly greater effect on the rate-pressure product. This

Clin Res Cardiol. 2010 Oct;99(10):665-72.

Clin Res Cardiol. 2011 Feb;100(2):121-8.

Cardiology. 2007;108(4):387-96.

Ivabradine for patients with stable coronary artery disease and left-ventricular systolic dysfunction (BEAUTIFUL): a randomised, double-blind, placebo-controlled trial

*Kim Fox, Ian Ford, P Gabriel Steg, Michal Tendera, Roberto Ferrari, on behalf of the BEAUTIFUL Investigators**

Lancet, 2008; 372: 807-16

Interpretation Reduction in heart rate with ivabradine does not improve cardiac outcomes in all patients with stable coronary artery disease and left-ventricular systolic dysfunction, but could be used to reduce the incidence of coronary artery disease outcomes in a subgroup of patients who have heart rates of 70 bpm or greater.

Efficacy of the I_f current inhibitor ivabradine in patients with chronic stable angina receiving beta-blocker therapy: a 4-month, randomized, placebo-controlled trial

Jean-Claude Tardif[1*], Piotr Ponikowski[2,3], and Thomas Kahan[4] for the ASSOCIATE study Investigators

Eur Heart J, 2009; 30: 540-8

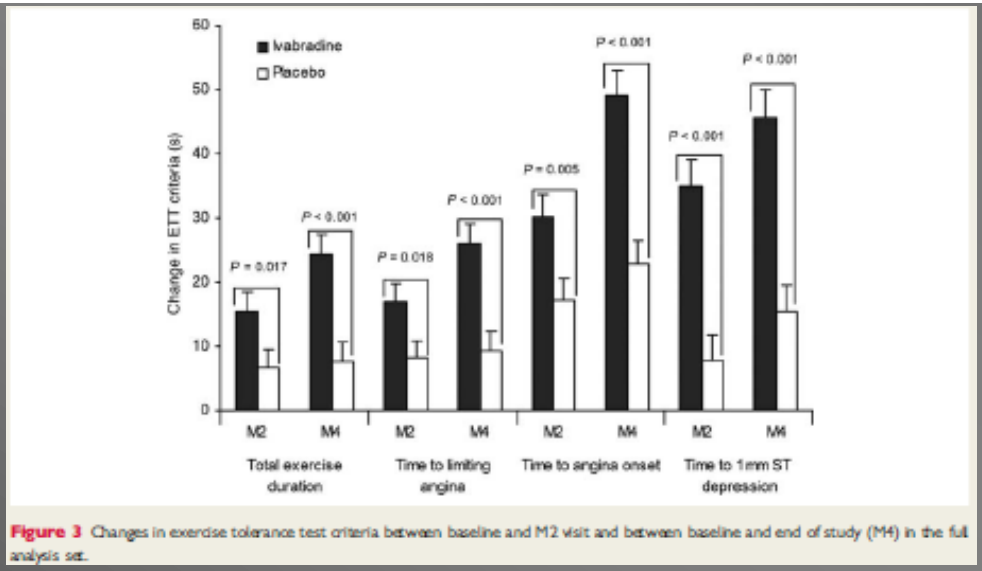
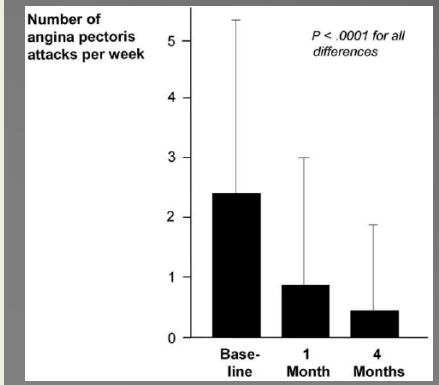


Figure 3 Changes in exercise tolerance test criteria between baseline and M2 visit and between baseline and end of study (M4) in the full analysis set.



Treatment of stable angina pectoris by ivabradine in every day practice: The REDUCTION Study

Ralf Köster, MD, Jan Kachler, MD, and Thomas Meinertz, MD, for the REDUCTION Study Group
Hamburg, Germany

Am Heart J, 2009; 158: e51-e57

Efficacy of Ivabradine, a Selective I_f Inhibitor, in Patients With Chronic Stable Angina Pectoris and Diabetes Mellitus

Jeffrey S. Borer, MD[a,*], and Jean-Claude Tardif, MD[b]

Am J Cardiol, 2010; 105: 29-35

TRATAMIENTO FARMACOLÓGICO. RANOLAZINA

Antianginal Efficacy of Ranolazine
When Added to Treatment With Amlodipine

The ERICA (Efficacy of Ranolazine in Chronic Angina) Trial

Peter H. Stone, MD, FACC,* Nikolay A. Gratsiansky, MD,† Alexey Blokhin, MD,‡ I-Zu Huang, MD,§ Lixin Meng, MS, MPH,§ for the ERICA Investigators
Boston, Massachusetts; Moscow, Russia; and Palo Alto, California

J Am Coll Cardiol, 2006, 48: 566-75

CLINICAL RESEARCH — Pharmacologic Studies

Long-Term Safety of a Novel Antianginal Agent in Patients With Severe Chronic Stable Angina

The Ranolazine Open Label Experience (ROLE)

Michael J. Koren, MD, FACC,* Michael R. Crager, PHD,† Michael Sweeney, MD†
Jacksonville, Florida

J Am Coll Cardiol, 2007, 49: 1027-34

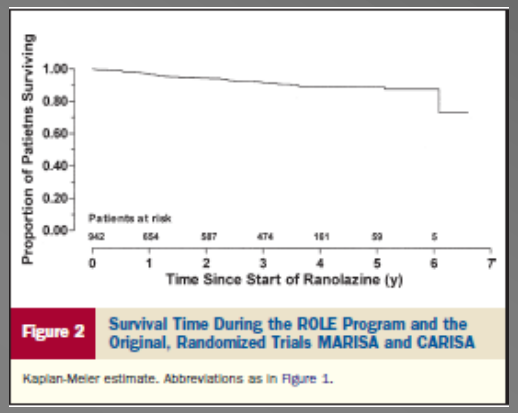


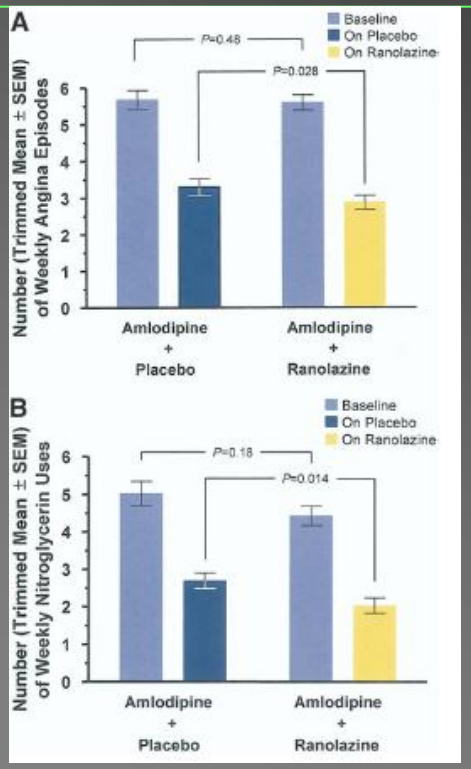
Figure 2 Survival Time During the ROLE Program and the Original, Randomized Trials MARISA and CARISA

Kaplan-Meier estimate. Abbreviations as in Figure 1.

Ranolazine for chronic stable angina

David T Nash, Stephen D Nash

Lancet, 2008, 372: 1335-41



Efficacy of Ranolazine in Patients With Chronic Angina

Observations From the Randomized, Double-Blind, Placebo-Controlled MERLIN–TIMI (Metabolic Efficiency With Ranolazine for Less Ischemia in Non–ST-Segment Elevation Acute Coronary Syndromes) 36 Trial

Sean R. Wilson, MD,* Benjamin M. Scirica, MD, MPH,*† Eugene Braunwald, MD,*† Sabina A. Murphy, MPH,* Ewa Karwatowska-Prokopczuk, MD, PHD,‡ Jacqueline L. Buros, BA,* Bernard R. Chaitman, MD,§ David A. Morrow, MD, MPH*†
Boston, Massachusetts; Palo Alto, California; and St. Louis, Missouri

J Am Coll Cardiol, 2009, 53: 1510-6

J Cardiovasc Pharmacol Ther, 2011; 16(2): 168-72

Am J Geriatr Cardiol, 2007, 16(4): 216-21

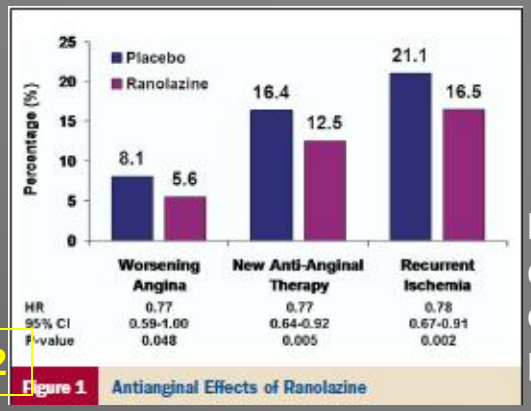


Figure 1 Antianginal Effects of Ranolazine

La Ranolazina reduce la frecuencia de angina y el uso de cfn comparado con placebo y existe mejoría de los parámetros de Función V. Izda

TRATAMIENTO FARMACOLÓGICO. CALCIOANTAGONISTAS.

Uric acid and other renal function parameters in patients with stable angina pectoris participating in the ACTION trial: impact of nifedipine GITS (gastro-intestinal therapeutic system) and relation to outcome

Luis M. Ruilope[a], Bridget-Anne Kirwan[b], Sophie de Brouwer[b], Nicolas Danchin[c], Keith A.A. Fox[d], Gilbert Wagener[e], Julian Segura[a], Philip A. Poole-Wilson[f] and Jacobus Lubsen[b,g], on behalf of the ACTION investigators

J Hypertens, 2007; 25: 1711-8

Nifedipina no altera la evolución de los Pacientes con AE

Blood pressure reduction in stable angina by nifedipine was related to stroke and heart failure reduction but not to coronary interventions

Jacobus Lubsen[a,h,*], Zoltán Vokó[c], Philip A. Poole-Wilson[d], Bridget-Anne Kirwan[a], Sophie de Brouwer[a] on behalf of the ACTION (A Coronary disease Trial Investigating Outcome with Nifedipine GITS) investigators

J Clin Epidemiol, 2007; 60(7): 720-6

Nifedipina baja la TA y reduce riesgo de Ictus e ICC, pero no altera la indicación de cateterismo ni By-pass

Differential Effects of Antihypertensive Treatment on Left Ventricular Diastolic Function

An ASCOT (Anglo-Scandinavian Cardiac Outcomes Trial) Substudy

Robyn J. Tapp, PHD,*† Andrew Sharp, MB, CHB,* Alice V. Stanton, MD, PHD,‡ Eoin O'Brien, PHD,§ Nishi Chaturvedi, MD,* Neil R. Poulter, MD,* Peter S. Sever, MD, PHD,* Simon A. McG. Thom, MD,* Alun D. Hughes, MD, PHD,* Jamil Mayet, MD,* on behalf of the ASCOT Investigators

London, United Kingdom; Melbourne, Australia; and Dublin, Ireland

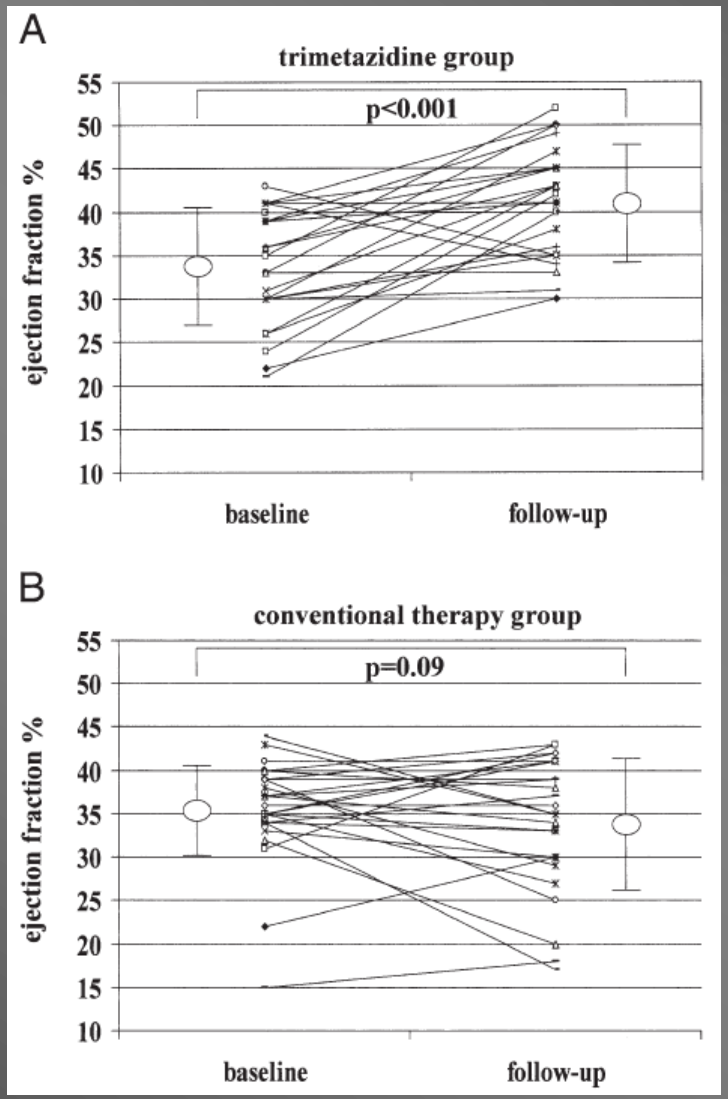
J Am Coll Cardiol, 2010; 55: 1875-81

Los pacientes con AE tratados con Amlodipino tienen mejor función diastólica que los tratados con Atenolol, independientemente de otros parámetros

TRATAMIENTO FARMACOLÓGICO. TRIMETAZIDINA.

A Randomized Clinical Trial of Trimetazidine, a Partial Free Fatty Acid Oxidation Inhibitor, in Patients With Heart Failure

Gabriele Fragasso, MD,* Altin Palloshi, MD,* Patrizia Puccetti, MD,* Carmen Silipigni, MD,* Alessandra Rossodivita, MD,† Mariagrazia Pala, MD,† Giliola Calori, MD, PhD,* Ottavio Alfieri, MD,* Alberto Margonato, MD, FESC*



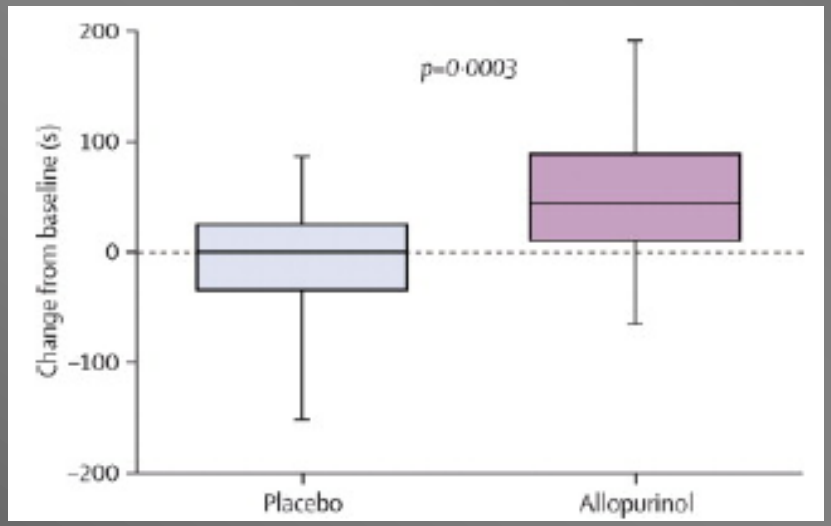
La Trimetazidine en los pacientes con AE se asocia de manera independiente con una reducción significativa de la mortalidad después de un IAM. Esto sugiere que combinar tratamiento metabólico con el clásico puede conferir un beneficio en la supervivencia

J Am Coll Cardiol, 2006; 48: 992-8

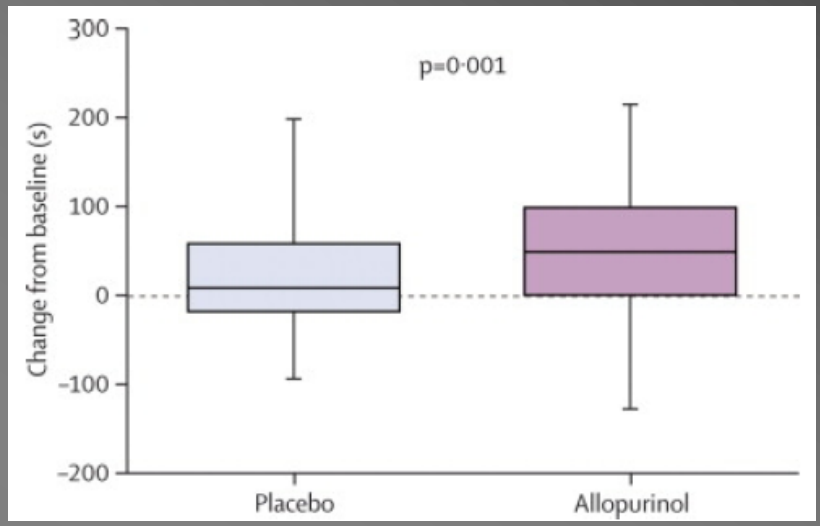
TRATAMIENTO FARMACOLÓGICO. ALOPURINOL

Effect of high-dose allopurinol on exercise in patients with chronic stable angina: a randomised, placebo controlled crossover trial

Awsan Noman[a], Donald SC Ang[a], Simon Ogston[b], Chim C Lang[a], and Allan D Struthers[a,*]
[a]Division of Medical Sciences, University of Dundee, Ninewells Hospital and Medical School, Dundee, UK.
[b]Division of Clinical and Population Science and Education, University of Dundee, Dundee, UK.



Tiempo de ejercicio



Tiempo hasta aparición angina

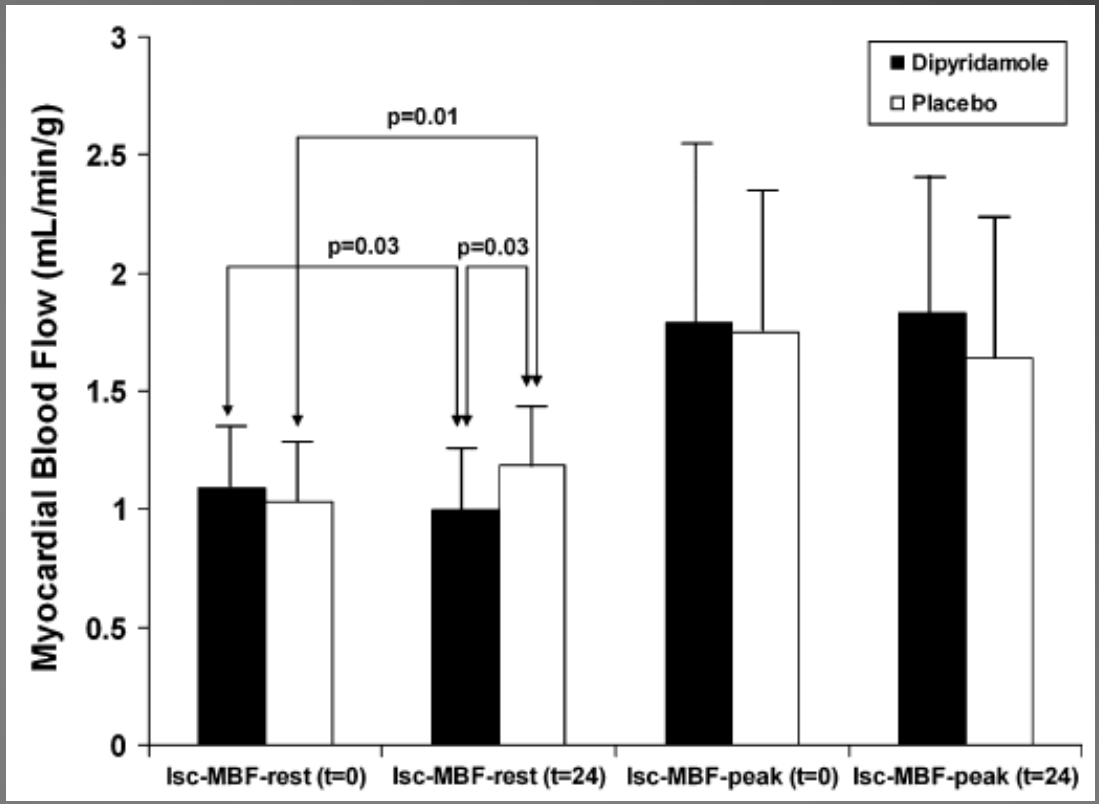
El Alopurinol parece ser un fármaco antisquémico útil, barato, bien tolerado, y seguro para los pacientes con AE

Lancet, 2010; 375(9732): 2161-7

TRATAMIENTO FARMACOLÓGICO. DIPIRIDAMOL

Effects of Long-Term Oral Dipyridamole Treatment on Coronary Microcirculatory Function in Patients With Chronic Stable Angina: A Substudy of the Persantine In Stable Angina (PISA) Study

Rohan Jagathesan, BSc, MRCP, Stuart D. Rosen, MA, MD, FRCP,* Rodney A. Foale, FRCP,* Paolo G. Camici, MD, FESC, FACC, FAHA, FRCP,* and Eugenio Picano, MD, FESC†*



El Dipiridamol modifica el flujo miocárdico(medido con PET), pero no de manera significativa

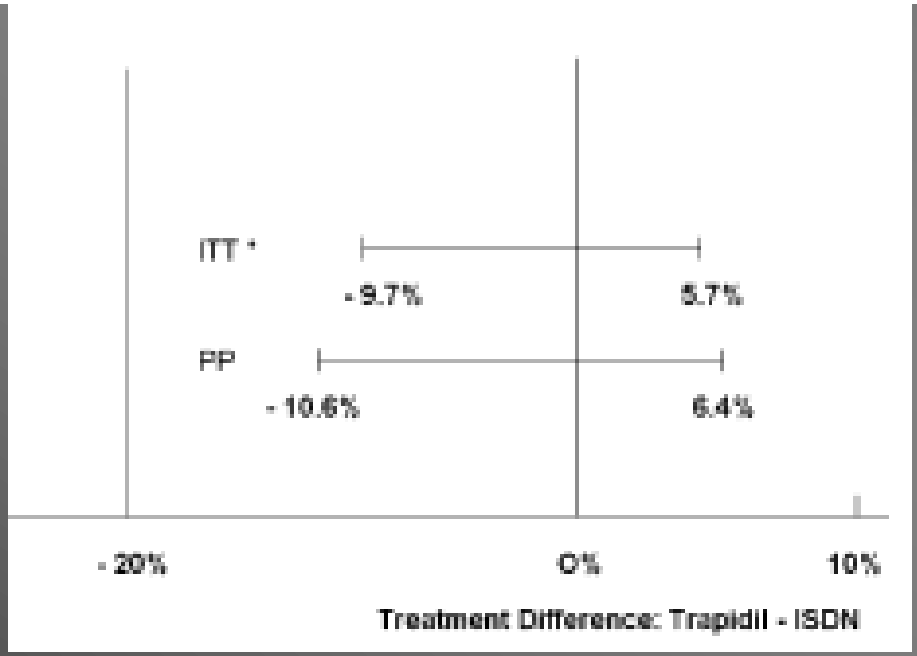
J Cardiovasc Pharmacol, 2006; 48: 110-6

TRATAMIENTO FARMACOLÓGICO. TRAPIDIL

T. Meinertz
W. Lehmacher
for the Trapidil/ISDN
Study Group

Trapidil is as effective as isosorbidedinitrate for treating stable angina pectoris –

A multinational, multicenter, double-blind, randomized study



Trapidil es igual de eficaz que ISDN para el tratamiento a corto plazo de los pacientes con AE

Clin Res Cardiol, 2006; 95(4):217-23.

TRATAMIENTO NO FARMACOLÓGICO. ENHANCED EXTERNAL COUNTER PULSATION

Enhanced external counter pulsation in treatment of refractory angina pectoris: two year outcome and baseline factors associated with treatment failure

André Erdling*[1], Susanne Bondesson[1], Thomas Pettersson[1] and Lars Edvinsson[2]

BMC Cardiovascular Disorders, 2008; 8: 39

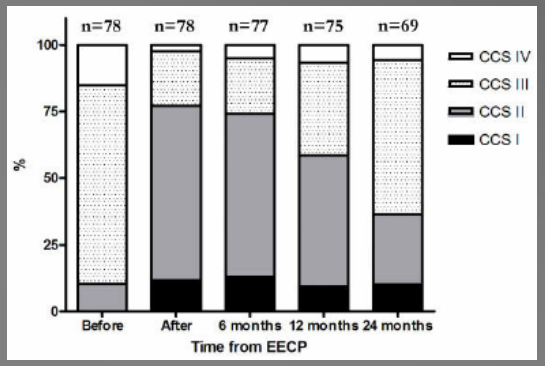


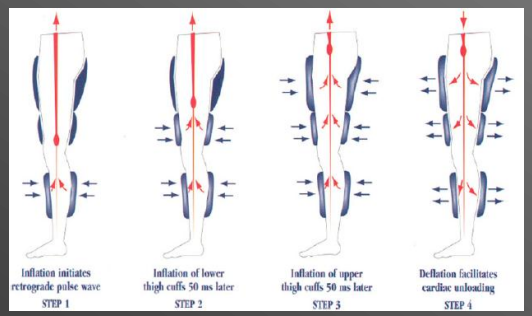
Figure 1
Overall changes in CCS class before EECP, after EECP and during follow-up. The figure shows marked reduction in the number of patients suffering from severe angina pectoris after treatment and during the follow-up period.

Se confirma la seguridad y eficacia para la angina refractaria, sobre todo en clase III-IV de CCS

Evaluation of left ventricular systolic and diastolic regional function after enhanced external counter pulsation therapy using strain rate imaging

Maryam Esmaeilzadeh[1]*, Arsalan Khaledifar[1], Majid Maleki[1], Anita Sadeghpour[1], Niloufar Samiei[1], Hassan Moladoust[2], Feridoun Noohi[1], Zahra Ojaghi Haghighi[1], and Ahmad Mohebbi[1]

Eur J Echocardiogr, 2009; 10: 120-6



El tratamiento con EEC parece mejorar la funcion sistólica y diastólica tanto regional como global en pacientes con AE.

TRATAMIENTO NO FARMACOLÓGICO. TERAPIA GENÉTICA

Circulating CD34⁺/133⁺ Progenitor Cells in Patients With Stable Angina Pectoris Undergoing Percutaneous Coronary Intervention

Kenshiro Arao, MD; Takanori Yasu, MD; Nobuhiro Ohmura, MD; Yoshiaki Tsukamoto, MD; Miho Murata, MD; Norifumi Kubo, MD; Tomio Umemoto, MD; Nahoko Ikeda, MD; Junya Ako, MD; San-e Ishikawa, MD; Masanobu Kawakami, MD; Shin-ichi Momomura, MD

Circ J, 2010; 74: 1929-35

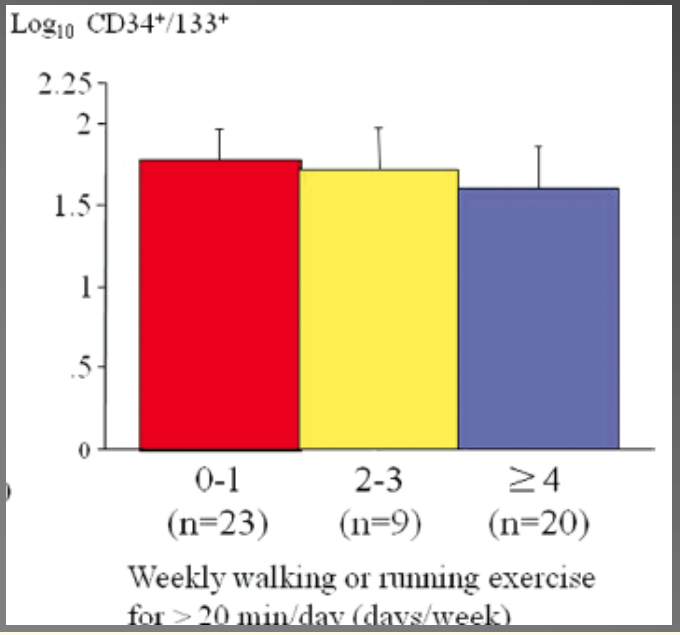


Figure 1. Distribution of CD34⁺/133⁺ cell counts in peripheral blood and the influence of exercise on log10 CD34⁺/133⁺ cell counts. (a) CD34⁺/133⁺ cell counts did not show a normal distribution. (b) Information regarding weekly exercise activity was obtained by interviewing each patient. A day was counted as an exercise day if the patient performed walking exercise for >20 min/day. No significant differences in log10 CD34⁺/133⁺ cell counts were seen among the 3 groups (0–1 day/week, 2–3 days/week and 4–7 days/week.

El número de células madres en pacientes con AE se modifica por el BMI, pero no por otros factores de riesgo ni tampoco por ser sometidos a IPC

Association of monocyte subsets with vulnerability characteristics of coronary plaques as assessed by 64-slice multidetector computed tomography in patients with stable angina pectoris

Manabu Kashiwagi, Toshio Imanishi*, Hiroto Tsujioka, Hideyuki Ikejima, Akio Kuroi, Yuichi Ozaki, Kohei Ishibashi, Kenichi Komukai, Takashi Tanimoto, Yasushi Ino, Hironori Kitabata, Kumiko Hirata, Takashi Akasaka

Atherosclerosis, 2010; 212: 171-6

G Ital Cardiol, 2011; 12(3): 198-211

El incremento de monocitos CD14 CD16 en los pacientes con AE se asocia con vulnerabilidad de las placas

TRATAMIENTO NO FARMACOLÓGICO. REVASCULARIZACIÓN MIOCÁRDICA

Clopidogrel pre-treatment in stable angina: for all patients >6 h before elective coronary angiography or only for angiographically selected patients a few minutes before PCI? A randomized multicentre trial PRAGUE-8

Petr Widimský[1]*, Zuzana Motovská[1], Stanislav Šimek[2], Petr Kala[4], Radek Pudil[3], František Holm[5], Robert Petr[1], Dana Bílková[1], Hana Skalická[2], Petr Kuchynka[2], Martin Poloczek[4], Roman Miklík[4], Marek Malý[6], and Michael Aschermann[2] on behalf of the PRAGUE-8 trial Investigators

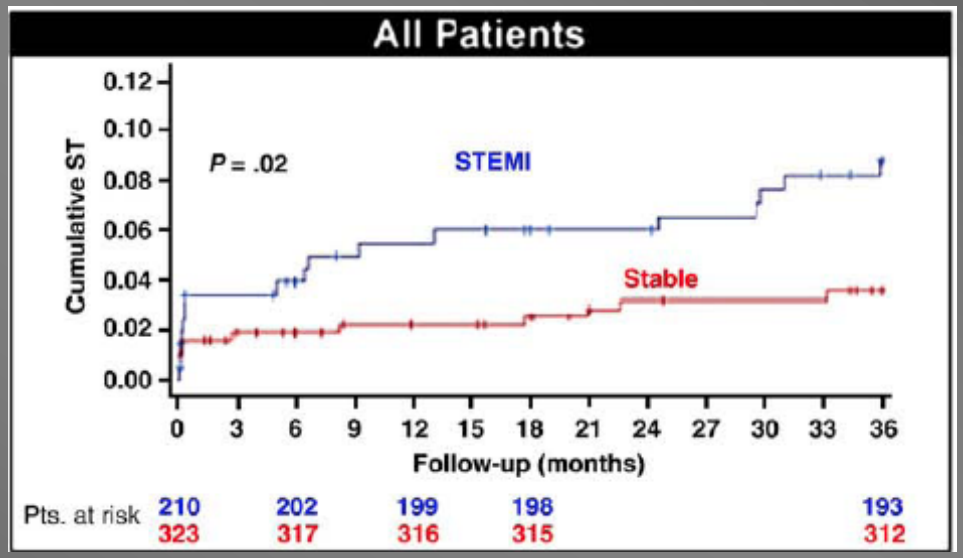
Eur Heart J, 2008; 29: 1495-1503

El paciente con AE que se somete a cateterismo electivo no precisa dosis de Clopidogrel 600 mg de carga previa

Stent thrombosis up to 3 years after stenting for ST-segment elevation myocardial infarction versus for stable angina—Comparison of the effects of drug-eluting versus bare-metal stents

Gregor Leibundgut, MD,[a] Fabian Nietlispach, MD,[a] Undine Pittl, MD, Hanspeter Brunner-La Rocca, MD, Christoph A. Kaiser, MD, and Matthias E. Pfisterer, MD, FACC, FESC, FAHA *Basel, Switzerland*

Am Heart J, 2009; 158: 1271-6



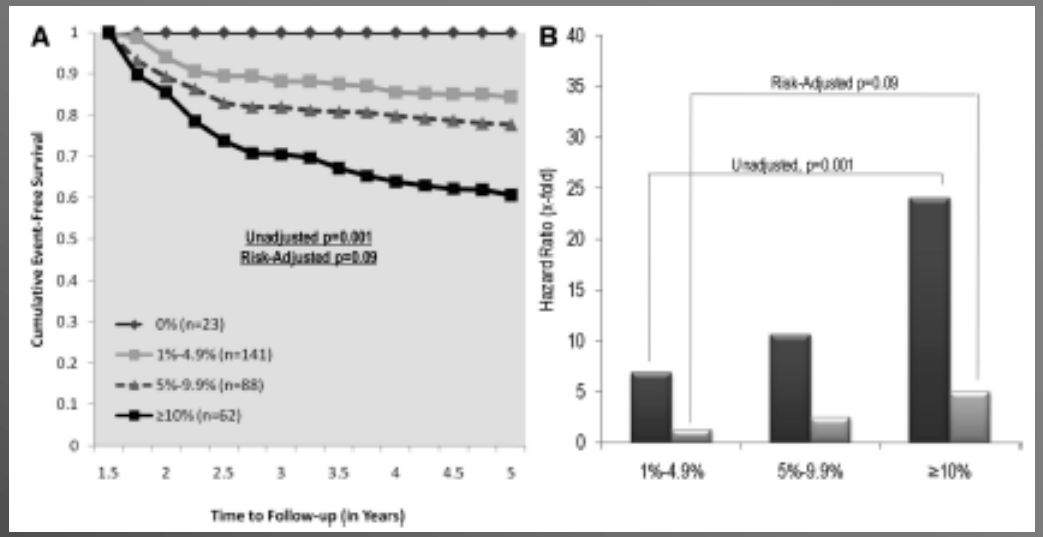
Los pacientes sometidos s ACTP-STENT después de SCACEST tienen más elevación tardía de ST que los pacientes con AE.

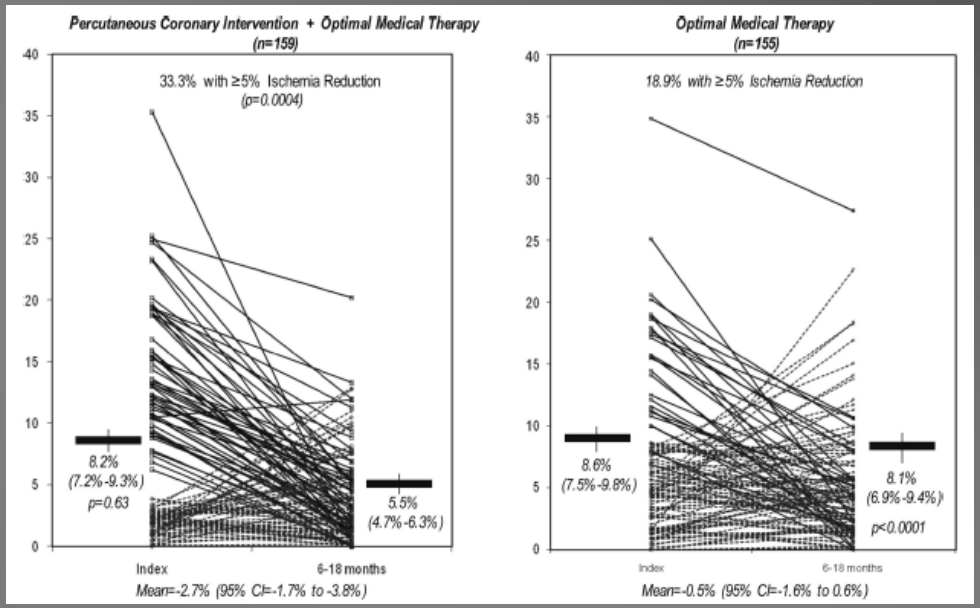
TRATAMIENTO NO FARMACOLÓGICO. REVASCULARIZACIÓN MIOCÁRDICA

Optimal Medical Therapy With or Without Percutaneous Coronary Intervention to Reduce Ischemic Burden

Results From the Clinical Outcomes Utilizing Revascularization and Aggressive Drug Evaluation (COURAGE) Trial Nuclear Substudy

Leslee J. Shaw, PhD; Daniel S. Berman, MD; David J. Maron, MD; G.B. John Mancini, MD; Sean W. Hayes, MD; Pamela M. Hartigan, PhD; William S. Weintraub, MD; Robert A. O'Rourke, MD; Marcin Dada, MD; John A. Spertus, MD, MPH; Bernard R. Chaitman, MD; John Friedman, MD; Piotr Slomka, PhD; Gary V. Heller, MD, PhD; Guido Germano, PhD; Gilbert Gosselin, MD; Peter Berger, MD; William J. Kostuk, MD; Ronald G. Schwartz, MD; Merill Knudtson, MD; Emir Veledar, PhD; Eric R. Bates, MD; Benjamin McCallister, MD; Koon K. Teo, MD; William E. Boden, MD; for the COURAGE Investigators





Angina estable con isquemia > 10% muestra beneficio de revascularizar frente a TMO.

Circulation, 2008; 117: 1283-91

TRATAMIENTO NO FARMACOLÓGICO. REVASCULARIZACIÓN MIOCÁRDICA

Long-term prognosis in stable angina; medical treatment or coronary revascularization in patients younger than 70 years?

Clara Carpeggiani [a,b,*], Patrizia Landi [a], Claudio Michelassi [a], Elena Barberini [b], Antonio L'Abbate [c]

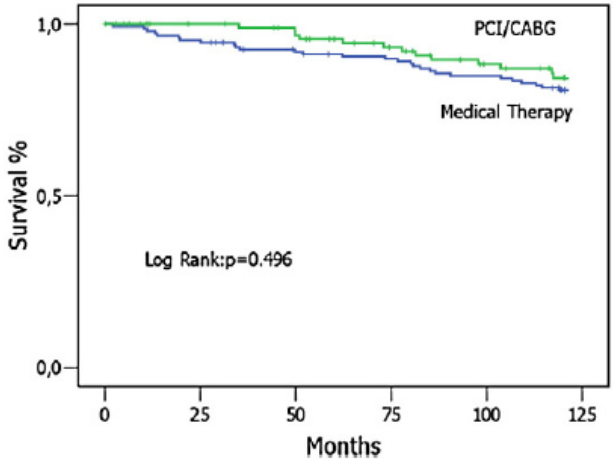


Fig. 1. Kaplan–Meier survival curves for cardiac death in patients with negative stress test: coronary revascularization does not reduce number of events. *P* value refers to differences in event rates between the groups.

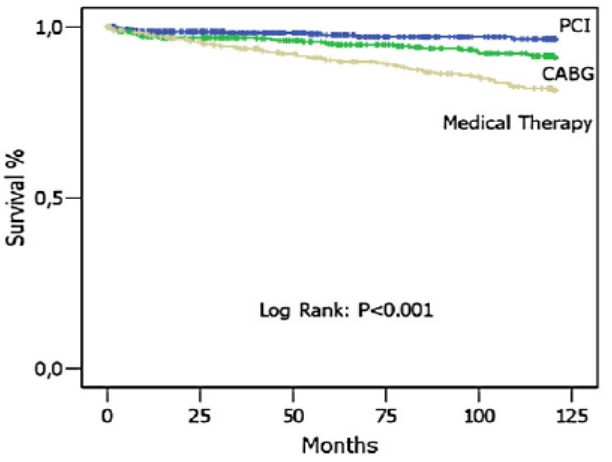


Fig. 2. Kaplan–Meier survival curves for cardiac death in patients with positive stress test: coronary revascularization significantly reduces number of events. *P* value refers to differences in event rates between the groups.

En pacientes con AE de bajo riesgo la revas-cularización no mejora el pronóstico salvo casos de isquemia onducible.

Int J, Cardiol, 2011; 148: 43-7

TRATAMIENTO NO FARMACOLÓGICO. REVASCULARIZACIÓN MIOCÁRDICA

Guía de práctica clínica sobre revascularización miocárdica

2.ª edición corregida. 10 de mayo de 2011

Grupo de Trabajo de Revascularización Miocárdica de la Sociedad Europea de Cardiología (ESC) y de la Asociación Europea de Cirugía Cardiotorácica (EACTS). Desarrollada con la colaboración especial de la Asociación Europea de Intervencionismo Cardiovascular Percutáneo (EAPCI)†

TABLA 8. Indicaciones para la revascularización en la angina estable o la isquemia silente

	Subgrupos de enfermedad coronaria según la anatomía	Clase[a]	Nivel[b]	Ref.[c]
Para el pronóstico	Tronco común izquierdo > 50%[d]	I	A	30,31,54
	Cualquier DAI proximal > 50%[d]	I	A	30-37
	Enfermedad de 2 o 3 vasos con la función del VI afectada	I	B	30-37
	Área importante de isquemia probada (> 10% del VI)	I	B	13,14,38
	Único vaso permeable restante > 50% de reestenosis[d]	I	C	
	Enfermedad de 1 vaso sin afección proximal de la DAI y sin > 10% de isquemia	III	A	39,40,53
Para los síntomas	Cualquier estenosis > 50% con angina limitante o equivalente que no responde a TMO	I	A	30,31,39-43
	Disnea/ICC e isquemia/viabilidad en > 10% del VI irrigado por arteria con estenosis > 50%	IIa	B	
	Sin síntomas limitantes con TMO	III	C	

Rev Esp Cardiol, 2010; 63(12):1485. e1-e76

TRATAMIENTO NO FARMACOLÓGICO. REVASCULARIZACIÓN MIOCÁRDICA

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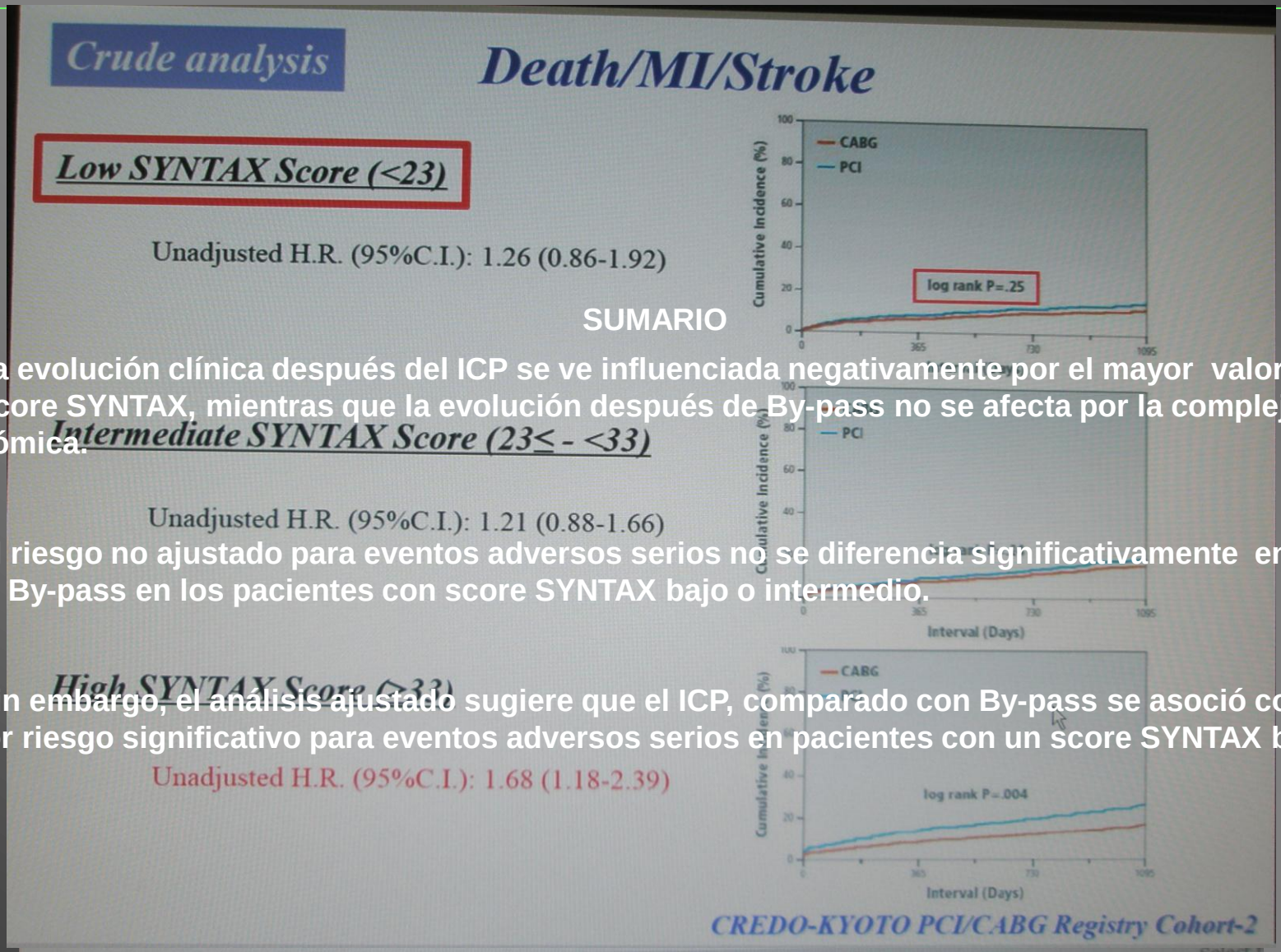
Grupo de Trabajo de Revascularización Miocárdica de la Sociedad Europea de Cardiología (ESC) y de la Asociación Europea de Cirugía Cardiotorácica (EACTS). Desarrollada con la colaboración especial de la Asociación Europea de Intervencionismo Cardiovascular Percutáneo (EAPCI)†

CIRUGIA DE BY-PASS (CABG) VERSUS INTERVENCIONISMO (ICP) EN PACIENTES CON CI ESTABLE

Subgrupos de enfermedad coronaria según la anatomía	A favor de CABG	A favor de ICP	Ref.
Enfermedad de 1 o 2 vasos: DAI no proximal	IIb C	I C	
Enfermedad de 1 o 2 vasos: DAI proximal	I A	IIa B	30,31,50,51
Enfermedad de 3 vasos con lesiones simples, revascularización funcional completa con ICP, escala SYNTAX ≤ 22	I A	IIa B	4,36-37,53
Enfermedad de 3 vasos con lesiones complejas, revascularización funcional incompleta con ICP, escala SYNTAX > 22	I A	III A	4,36-37,53
Tronco común izquierdo (aislado o enfermedad de 1 vaso, *ostium*/tronco medio)	I A	IIa B	4,54
Tronco común izquierdo (aislado o enfermedad de 1 vaso, bifurcación distal)	I A	IIb B	4,54
Tronco común izquierdo + enfermedad de 2 o 3 vasos, escala SYNTAX ≤ 32	I A	IIb B	4,54
Tronco común izquierdo + enfermedad de 2 o 3 vasos, escala SYNTAX ≥ 33	I A	III B	4,54

Rev Esp Cardiol, 2010; 63(12):1485. e1-e76

TRATAMIENTO NO FARMACOLÓGICO. REVASCULARIZACIÓN MIOCÁRDICA



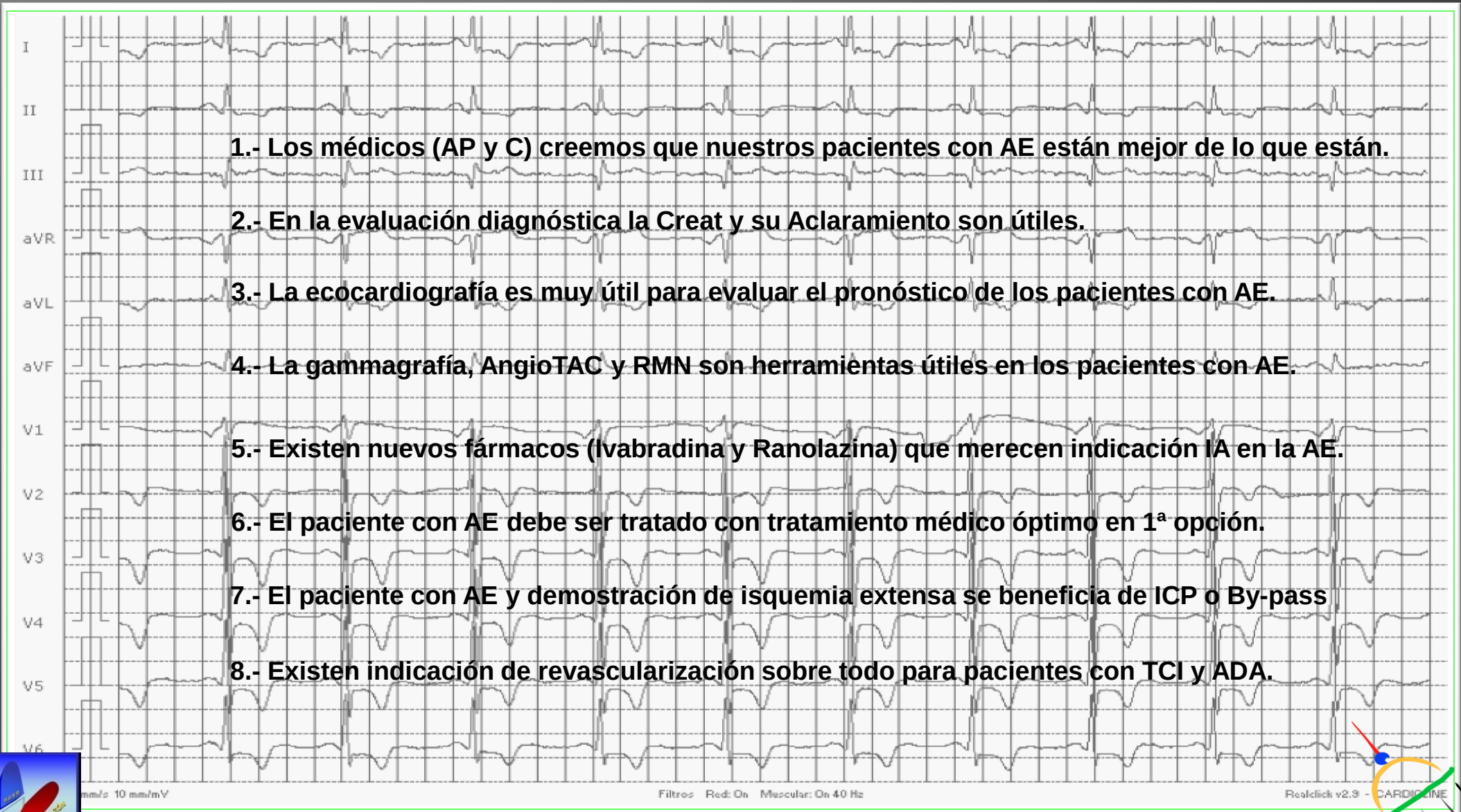
SUMARIO

- **La evolución clínica después del ICP se ve influenciada negativamente por el mayor valor del score SYNTAX, mientras que la evolución después de By-pass no se afecta por la complejidad Anatómica.**

- **El riesgo no ajustado para eventos adversos serios no se diferencia significativamente entre ICP y By-pass en los pacientes con score SYNTAX bajo o intermedio.**

- **Sin embargo, el análisis ajustado sugiere que el ICP, comparado con By-pass se asoció con un Mayor riesgo significativo para eventos adversos serios en pacientes con un score SYNTAX bajo**

MENSAJES PARA LLEVAR A CASA



1.- Los médicos (AP y C) creemos que nuestros pacientes con AE están mejor de lo que están.

2.- En la evaluación diagnóstica la Creat y su Aclaramiento son útiles.

3.- La ecocardiografía es muy útil para evaluar el pronóstico de los pacientes con AE.

4.- La gammagrafía, AngioTAC y RMN son herramientas útiles en los pacientes con AE.

5.- Existen nuevos fármacos (Ivabradina y Ranolazina) que merecen indicación IA en la AE.

6.- El paciente con AE debe ser tratado con tratamiento médico óptimo en 1ª opción.

7.- El paciente con AE y demostración de isquemia extensa se beneficia de ICP o By-pass

8.- Existen indicación de revascularización sobre todo para pacientes con TCI y ADA.