INTERVENÇÃO EM PONTES DE SAFENA

IV Curso "José Gabay" para Intervencionistas em Treinamento de ProEducar - SOLACI

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LESÕES EM PONTE DE SAFENA

1- A FISIOPATOLOGIA.

2 - LOCALIZAÇÃO

2 - O PROBLEMA DA RE- OPERAÇÃO.

5- A REESTENOSE.

FISIOPATOLOGIA

1- TROMBOSE (COM OU SEM SINTOMAS) – PRECOCE - 1º MÊS

- **Lesão endotelial***
- **Lesão da camada média***
- **Incidência: 10 %**

- **Redução de fluxo**
  - **Válvulas**
  - **Estenose nas anastomoses proximal e distal**

**** Utilização precoce de aspirina e tienopiridínicos.***

FISIOPATOLOGIA

2- HIPERPLASIA INTIMAL – PRIMEIROS MESES (1 MÊS-1ANO)

- **EXPOSIÇÃO DO ENDOTÉLIO VENOSO A ALTAS PRESSÕES**
- **PRECURSORA DA ATEROSCLEROSE**

FISIOPATOLOGIA

3- ATEROSCLEROSE (APÓS O PRIMEIRO ANO)

- Início dos sintomas cerca de 3 anos após
- Capsula fibrosa ausente ou fina
- Placas friáveis

INTRODUÇÃO

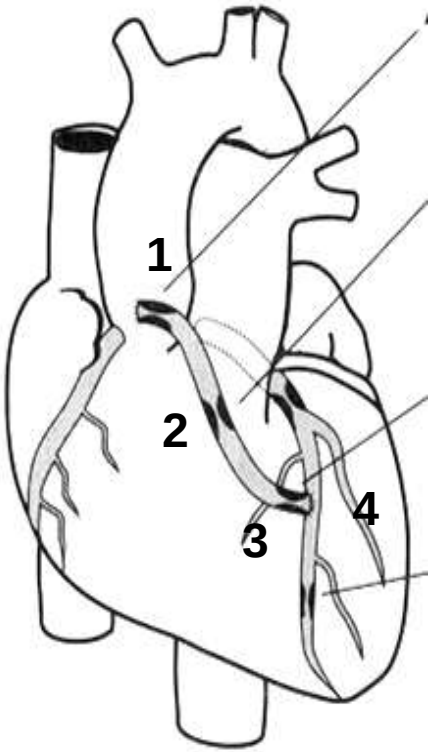
PATÊNCIA DOS ENXERTOS DE SAFENA

10%	OCLUIDOS ANTES DA ALTA
20-35%	OCLUIDOS EM 5 ANOS
40-50%	OCLUIDOS EM 10 ANOS

NOVOS PROCEDIMENTOS DI
REVASCULARIZAÇÃO MIOCÁRDICA
(CRM / ATC)

• 4%	5 ANOS
• 19%	10 ANOS
• 31%	12 ANOS

LESÕES EM PONTE DE SAFENA
(Localização)



1 - Doença aorto-ostial
(Estenose / Oclusão)

2 - Doença do corpo da ponte:
a) focal
b) difusa

3 - Doença da anastomose distal

4 - Leito do vaso nativo

LESÕES EM PONTE DE SAFENA
REESTENOSE PÓS ATC

Authors (Ref.)	% F/U	Graft Site		
		Proximal	Body	Distal
Douglas(30)	NR	79% (11/14)	62% (40/65)	20% (10/51)
Cote (31)	70	33% (3/9)	24% (5/21)	15% (2/13)
Dorros (32)	57	60% (3/5)	43% (3/7)	31% (4/13)
Pinkerton (33)	92	33% (1/3)	60% (3/5)	40% (6/15)
Reeves (34)	94	64% (7/11)	63% (20/32)	36% (5/14)
Total		55% (46/84)	53% (80/150)	28% (37/130)

F/U, Follow-up; *NR*, not reported.

Strategic Approaches in Coronary Intervention - Chapter 25
Sthephen G. Ellis, David Holmes, Jr
Williams & Wilkins - 1996

QUANDO INTERVIR ?

O PROBLEMA DA RE-OPERAÇÃO

- **MORTALIDADE:** 2 a 4 x maior Óbito: 5 a 7 %
  IAM : 2 a 12 %

- **TAXA DE SOBREVIDA:**
  5 anos: 84 a 94 %
  10 anos: 75%

- **LIVRE DE EVENTOS EM 5 ANOS:**
  Óbito, IAM, ATC, CRM: 64%
  Angina: 50%

QUANDO INTERVIR ?

ISQUEMIA PRECOCE (30 dias)

- **Oclusão trombótica do enxerto – 10%**
- **Cerca de 6% dos pacientes desenvolvem isquemia clínica significativa**
- **Nesse subgrupo 40-60% apresentam enxertos ocluidos**
- **A ICP está indicada somente nos casos de pacientes com sintomas relevantes**

QUANDO INTERVIR ?

ANASTOMOSE DISTAL

- RESULTADOS BONS
- MELHORES QUE LESÕES NO CORPO DO ENXERTO
- MELHORES QUE EM LESÕES AORTO-OSTIAIS

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ASPECTOS TÉCNICOS

QUANDO INTERVIR ?

OCLUSÃO CRÔNICA

- EVOLUÇÃO RUIM A CURTO E LONGO PRAZO
- SE POSSÍVEL INTERVIR NO VASO NATIVO
- A ICP SÓ SE JUSTIFICA NA PRESENÇA DE SINTOMAS GRAVES OU EM CASOS DE GRANDE ÁREA DE MIOCÁRDIO EM RISCO

LESÕES EM PONTE DE SAFENA

Estratégias de Angioplastia

1 - VIA DE ACESSO: RADIAL X FEMORAL

2- ATC SEM PRÉVIA DILATAÇÃO
(Implante primário de Stents)

3 - LIBERAÇÃO A BAIXAS PRESSÕES

4- STENTS REVESTIDOS (Stents graft)

5- RELAÇÃO STENT/ARTÉRIA

6 – STENTS FARMACOLÓGICOS X CONVENCIONAIS

7- OUTROS DISPOSITIVOS : FILTROS DE PROTEÇÃO

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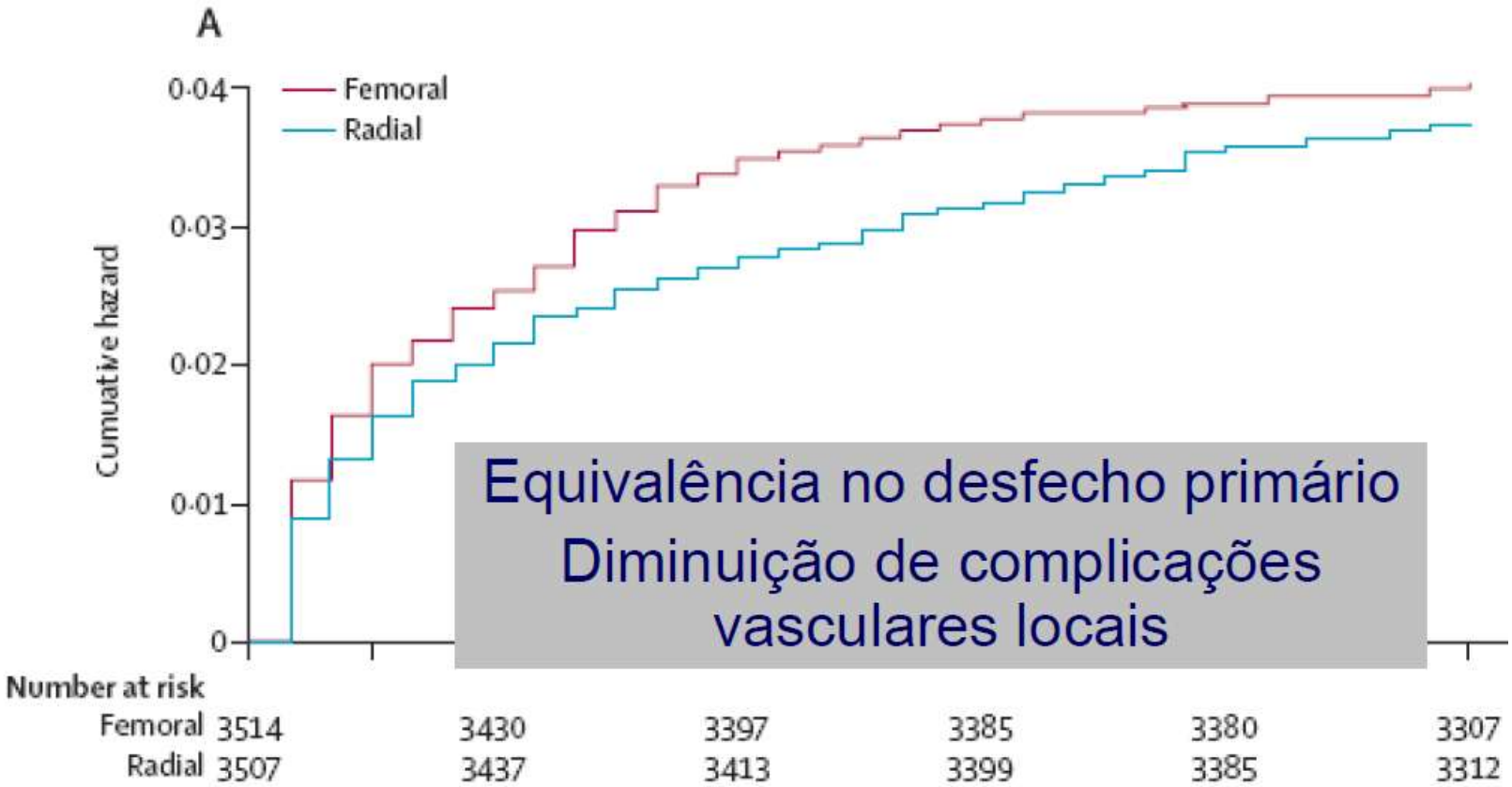
Radial versus femoral access for coronary angiography and intervention in patients with acute coronary syndromes (RIVAL): a randomised, parallel group, multicentre trial

*Sanjit S Jolly, Salim Yusuf, John Cairns, Kari Niemelä, Denis Xavier, Petr Widimsky, Andrzej Budaj, Matti Niemelä, Vicent Valentin, Basil S Lewis, Alvaro Avezum, Philippe Gabriel Steg, Sunil V Rao, Peggy Gao, Rizwan Afzal, Campbell D Joyner, Susan Chrolavicius, Shamir R Mehta, for the RIVAL trial group**



Equivalência no desfecho primário

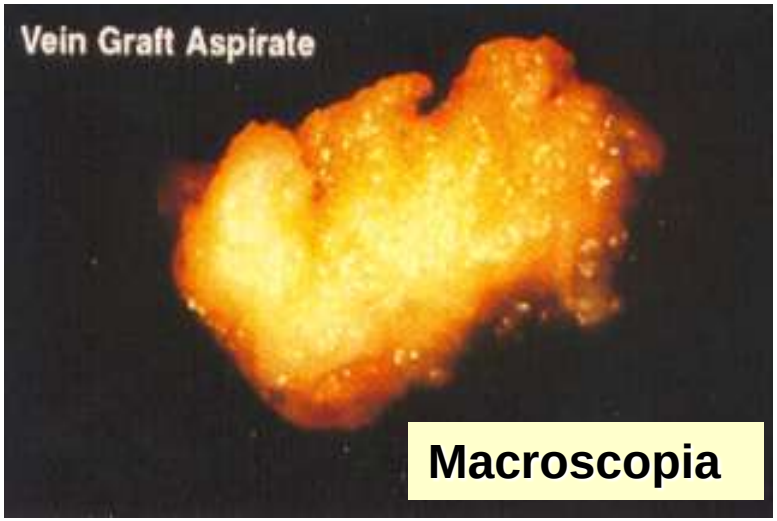
Diminuição de complicações vasculares locais

www.thelancet.com Published online April 4, 2011 DOI:10.1016/S0140-6736(11)60404-2

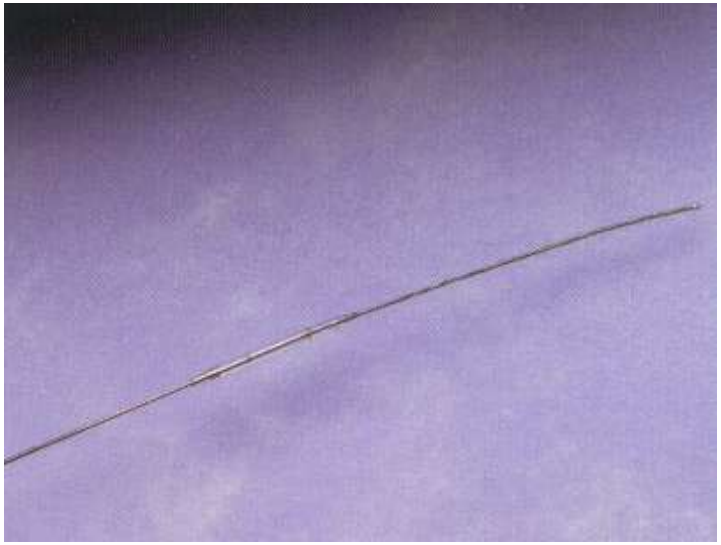
“DEBRIS “EM PONTE DE SAFENA

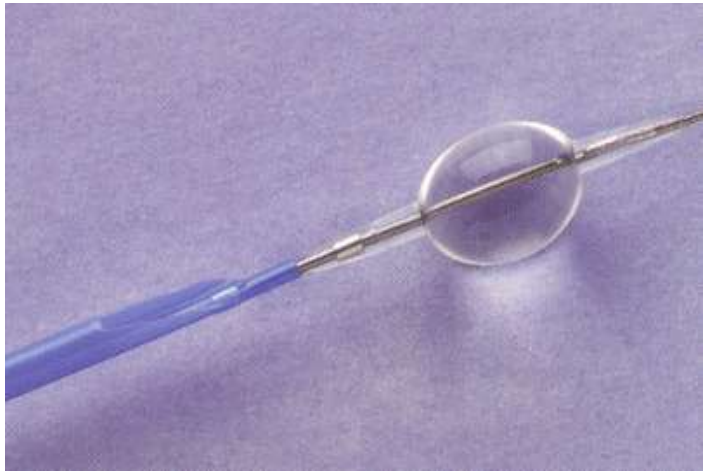
SVG ASPIRATES PARTICLE SIZE DISTRIBUTION

Particle size (micron)	Percent
17 to 56.5	64%
56.5 to 96	17%
96 to 214.5	14%
214.5 to 767.5	3%
767.5 to 807	3%
	100%

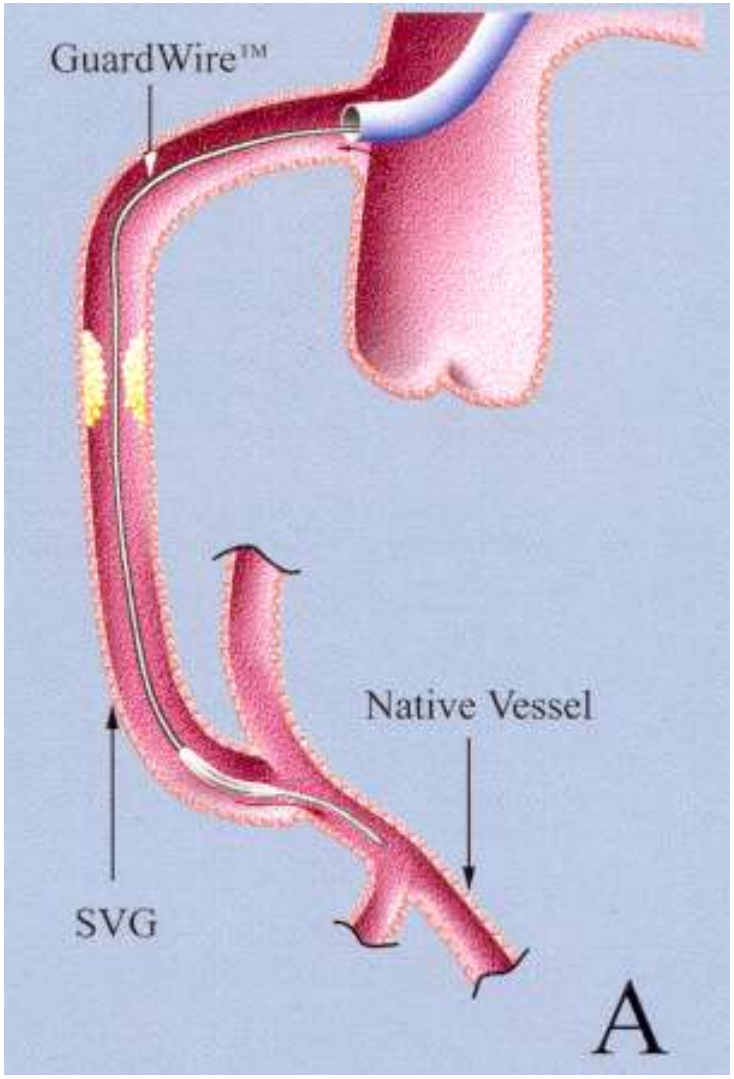


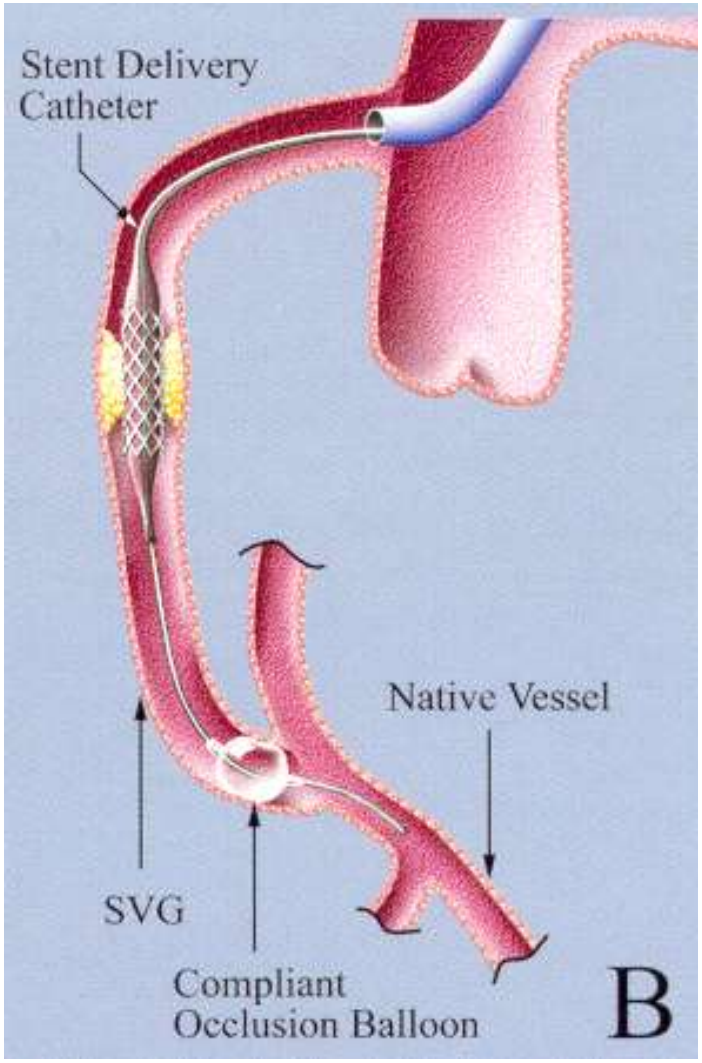
PercuSurge GuarWire™ System



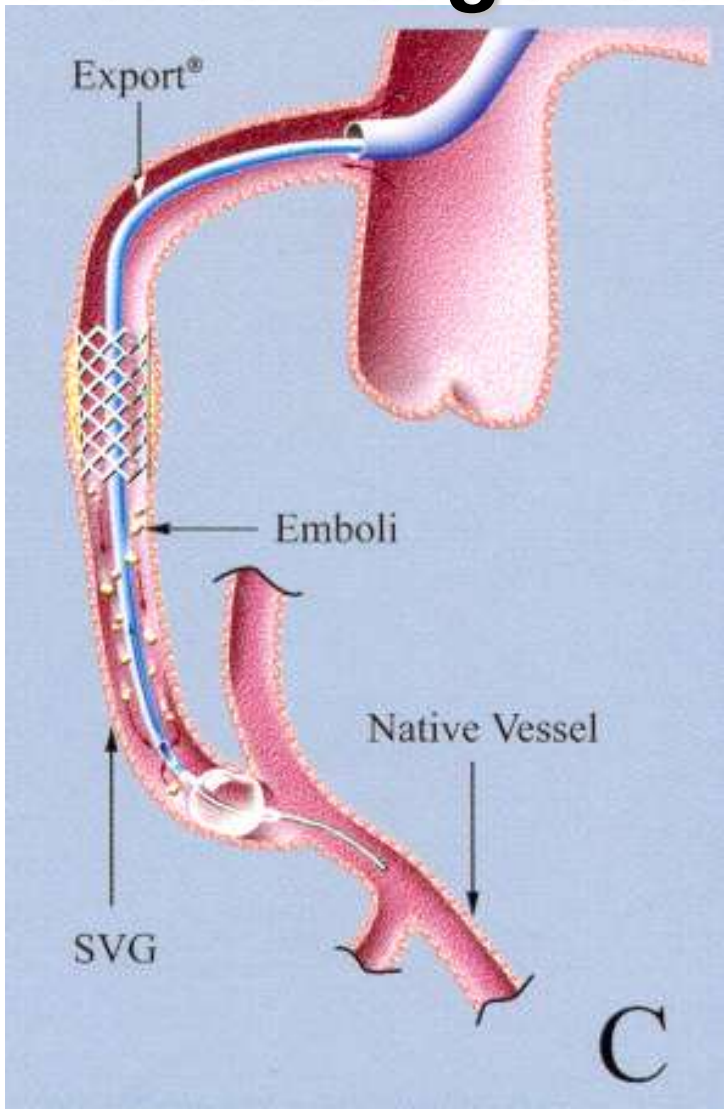


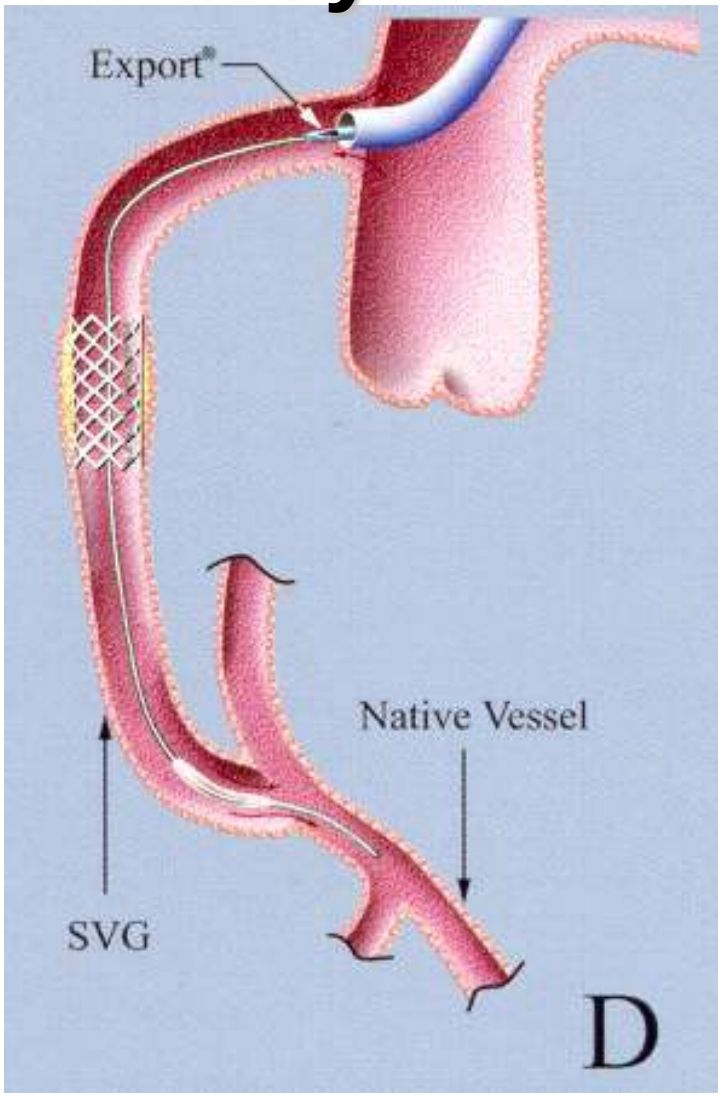
PercuSurge GuarWire™ System



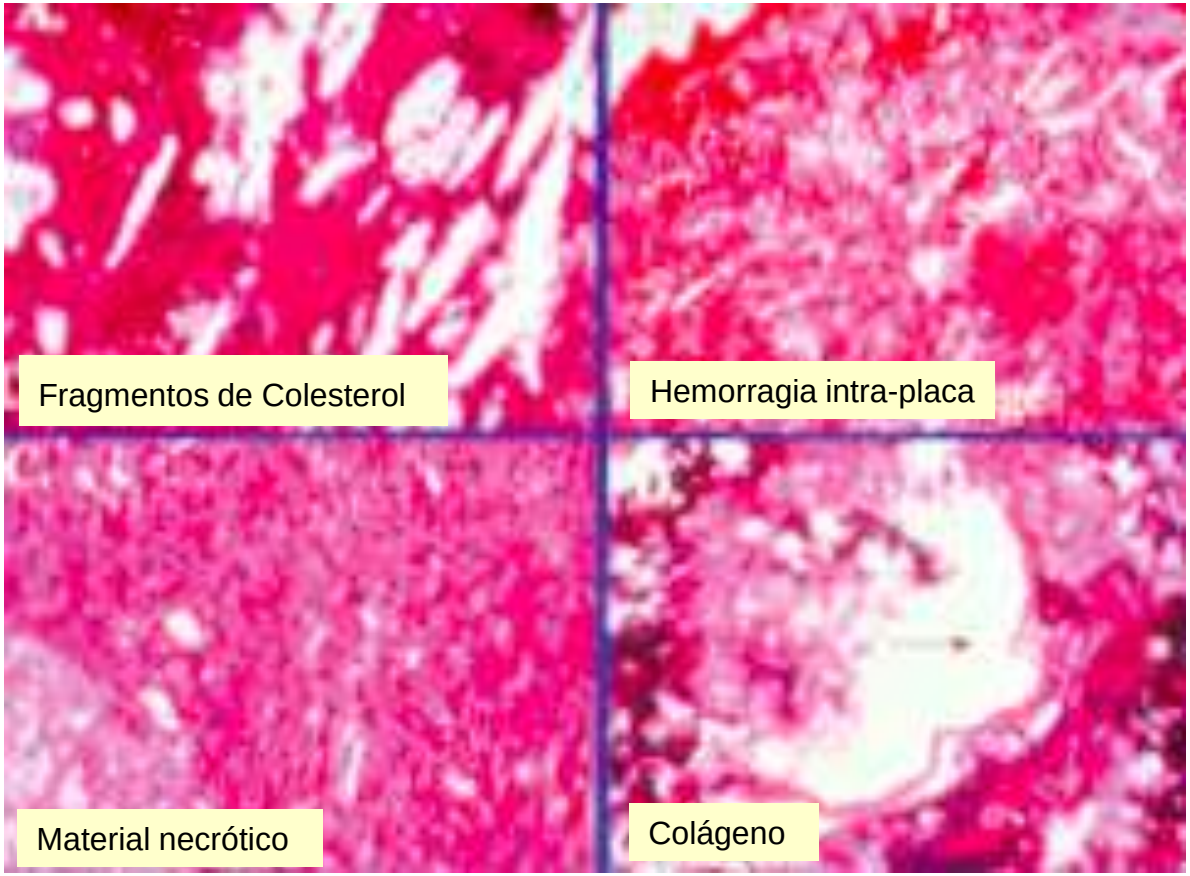


PercuSurge GuarWire™ System





MATERIAL ASPIRADO
(aspecto histológico)



The SAFER Trial

*"**S**VG **A**ngioplasty **F**ree of **E**mboli **R**andomized"*

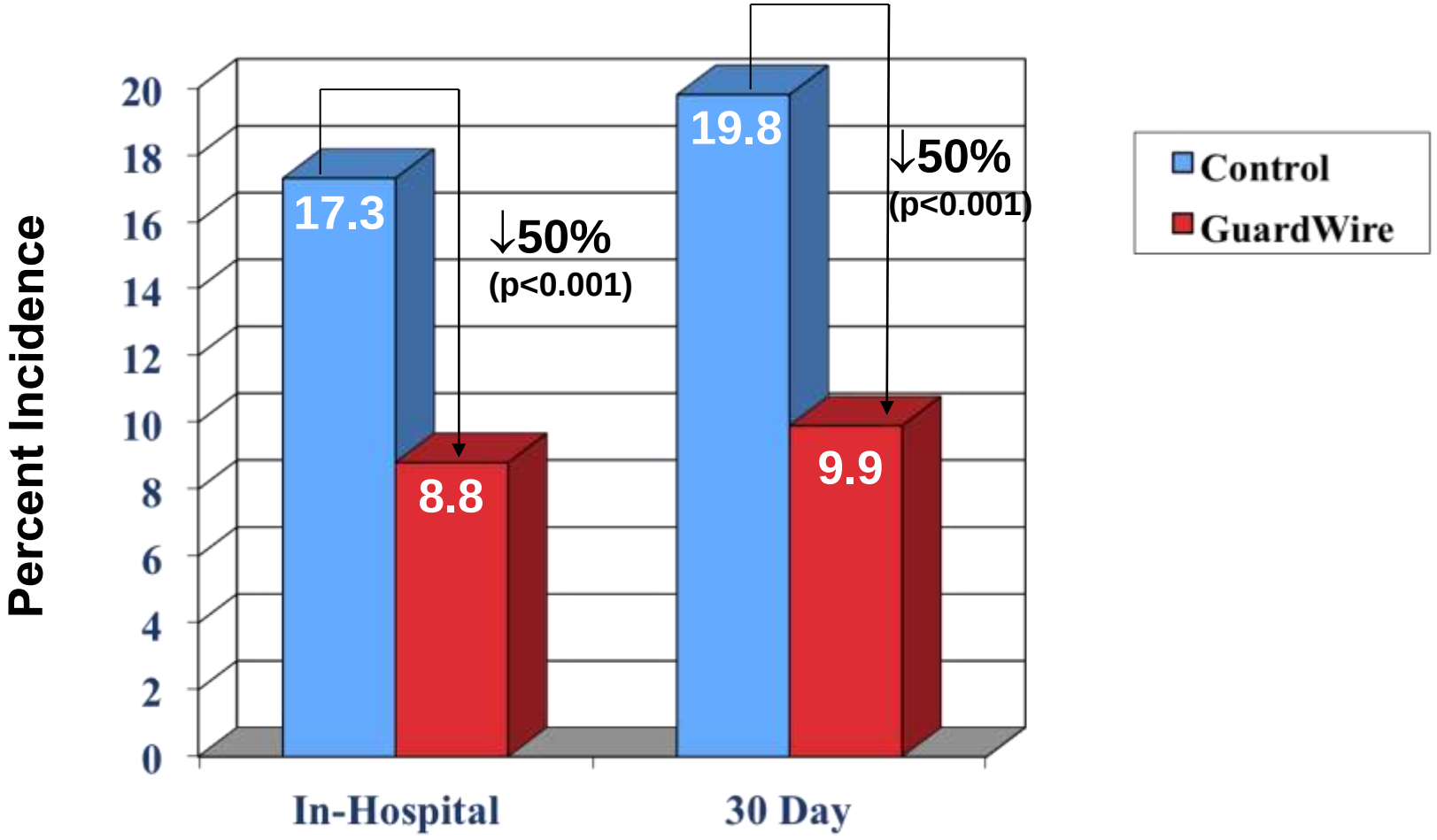
Evaluation of the Clinical Safety and Efficacy of the PercuSurge GuardWire in Saphenous Vein Graft Intervention

As presented at TCT 2000 by:

Donald S. Baim, MD FACC
Harvard Medical School
Brigham and Women's Hospital

The SAFER Trial

Results: MACE



N = 801 pts

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FilterWire EZ™ System

- Suspension arm conforms filter to curvature
- Improved guidewire
- Pre-loaded
- 3.2F profile
- Re-designed delivery sheath
- Re-tooled nosecone

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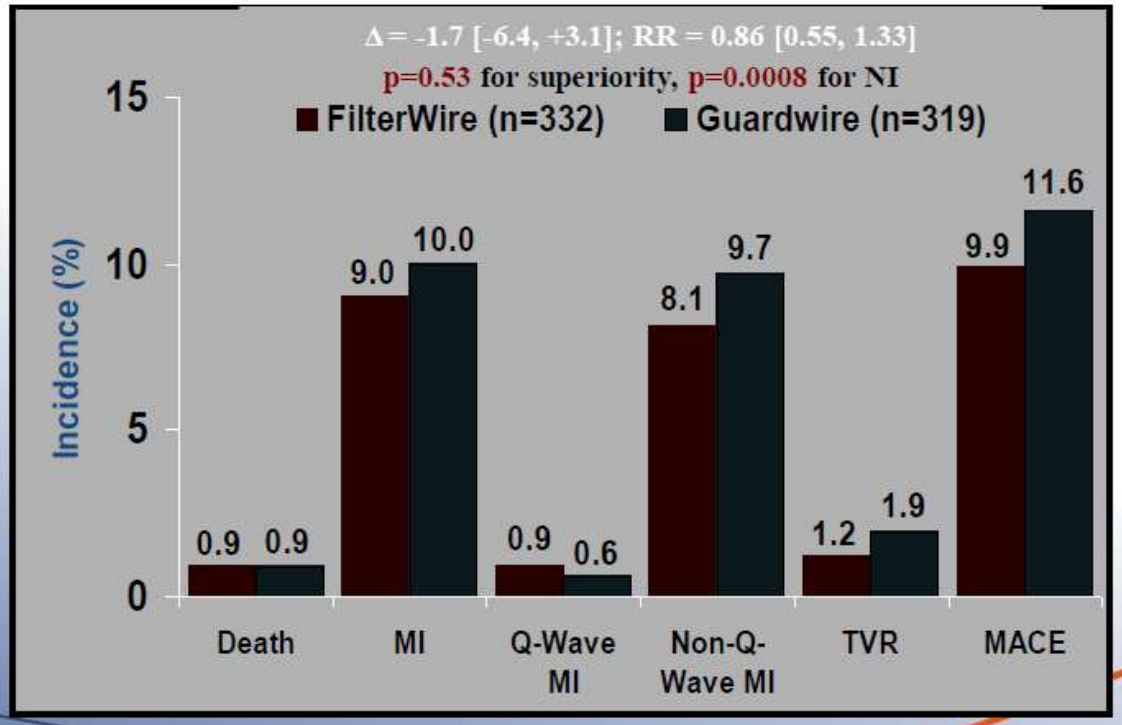
ASPECTOS TÉCNICOS

Estudo FIRE



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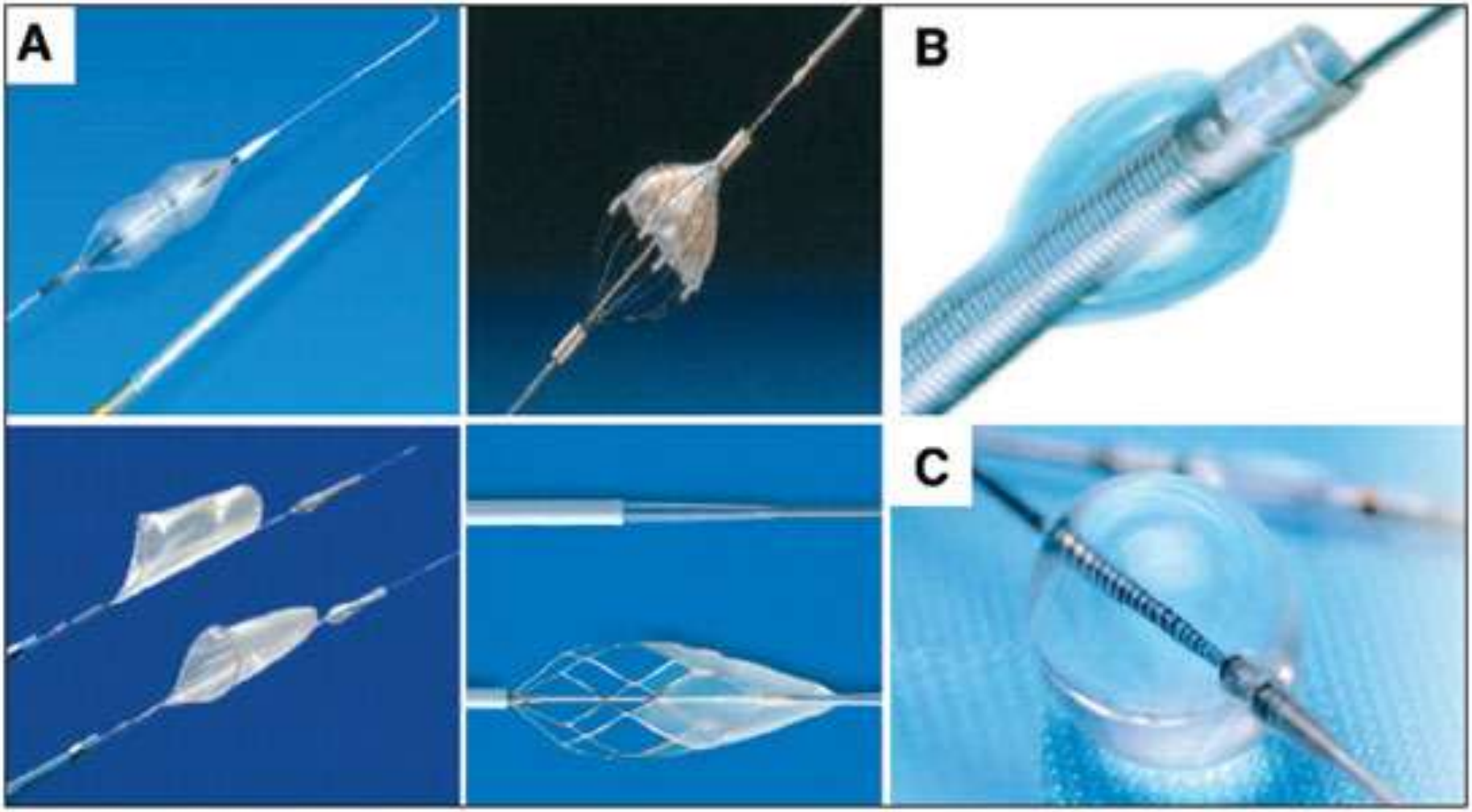
FILTROS



STENTS REVESTIDOS - STENTS “GRAFT”

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The Randomised Evaluation of Polytetrafluoroethylene (PTFE) Covered Stent in Saphenous Vein Grafts - *RECOVERS*

5-year follow-up of polytetrafluoroethylene-covered stents compared with bare-metal stents in aortocoronary saphenous vein grafts the randomized *BARRICADE* (barrier approach to restenosis: restrict intima to curtail adverse events) trial.

Stone GW; Goldberg S; O'Shaughnessy C; Midei M; Siegel RM; Cristea E; Dangas G; Lansky AJ; Mehran R.

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E CARDIOLOGIA
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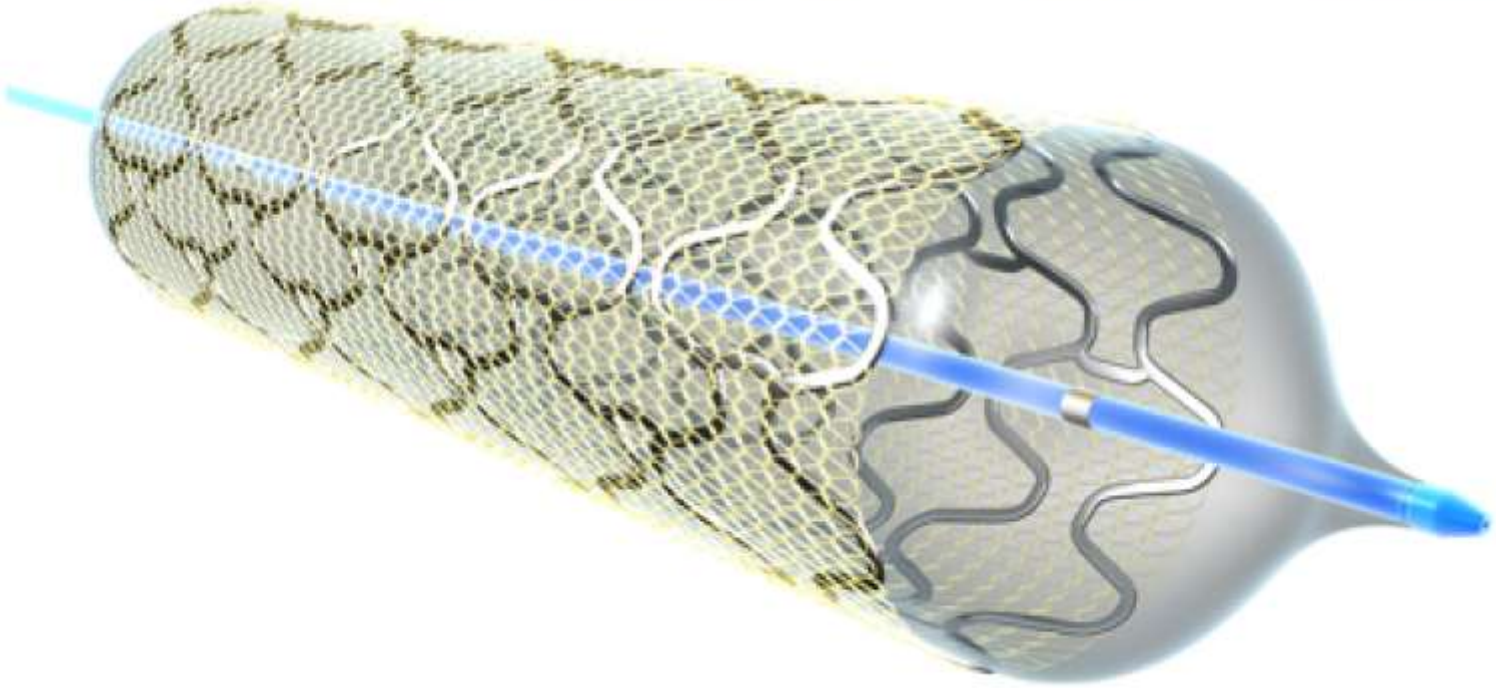
MGUARD



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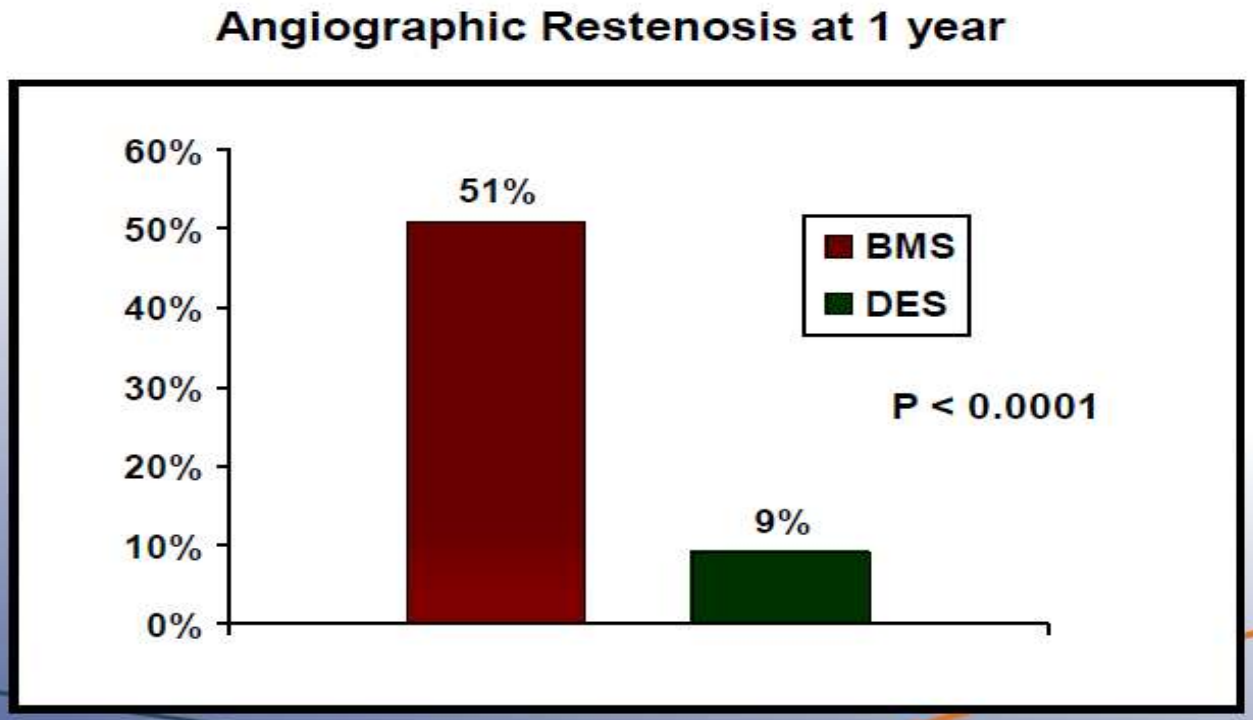
DES VERSUS BMS

Stenting Of Saphenous Vein Grafts



Brilakis et al J Am Coll Cardiol. 2009 Mar 17;53(11):919-28

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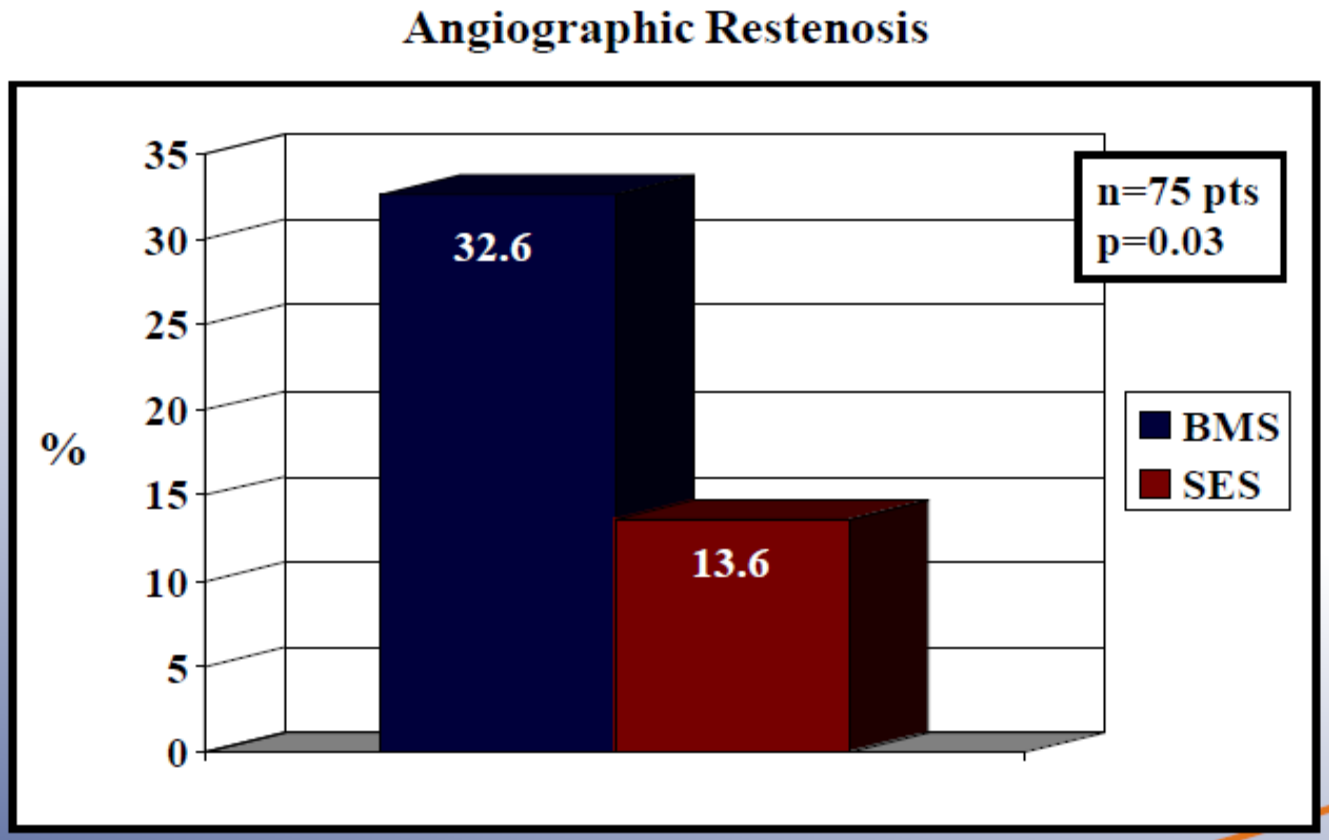
DES VERSUS BMS

RRISC Trial



Vermeersch, et al, JACC 2006;48:2423–2431.

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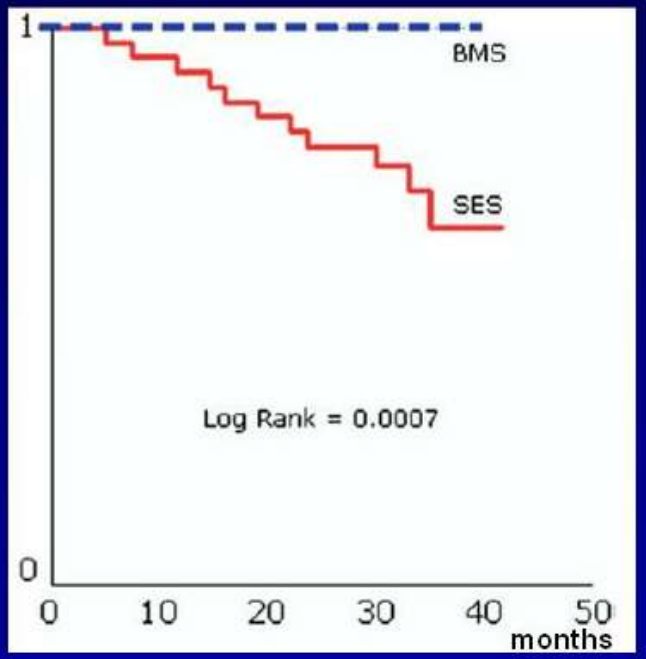
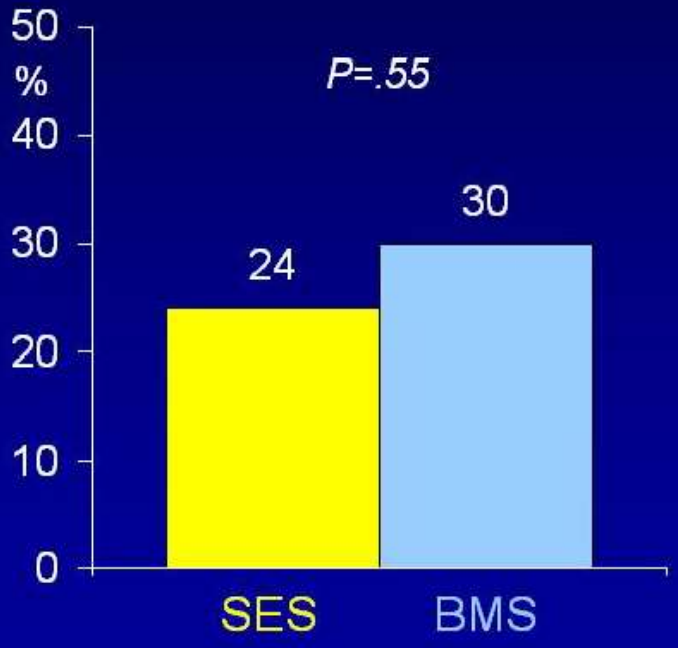
DELAYED RRISC Trial
N=75

Survival



TLR



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DES VERSUS BMS

Drug-eluting versus bare-metal stents in saphenous vein graft lesions (ISAR-CABG): a randomised controlled superiority trial

Julinda Mehilli, Jürgen Pache, Mohamed Abdel-Wahab, Stefanie Schulz, Robert A Byrne, Klaus Tiroch, Jörg Hausleiter, Melchior Seyfarth, Ilka Ott, Tareq Ibrahim, Massimiliano Fusaro, Karl-Ludwig Laugwitz, Steffen Massberg, Franz-Josef Neumann, Gert Richardt, Albert Schömig, Adnan Kastrati, for the Is Drug-Eluting-Stenting Associated with Improved Results in Coronary Artery Bypass Grafts? (ISAR-CABG) Investigators*

Summary

Background Comparative assessment of clinical outcomes after use of drug-eluting stents versus bare-metal stents for treatment of aortocoronary saphenous vein graft lesions has not been undertaken in large randomised trials. We aimed to undertake a comparison in a randomised trial powered for clinical endpoints.

Methods In this randomised superiority trial, patients with de-novo saphenous vein graft lesions were assigned by computer-generated sequence (1:1:1:3) to receive either drug-eluting stents (one of three types: permanent-polymer paclitaxel-eluting stents, permanent-polymer sirolimus-eluting stents, or biodegradable-polymer sirolimus-eluting stents) or bare-metal stents. Randomisation took place immediately after crossing of the lesion with a guidewire, and was stratified for each participating centre. Investigators assessing data were masked to treatment allocation;

Published Online
August 28, 2011
DOI:10.1016/S0140-6736(11)61255-5

See Online/Comment
DOI:10.1016/S0140-6736(11)61340-8

*Listed at end of paper

Deutsches Herzzentrum (Prof J Mehilli MD, J Pache MD,

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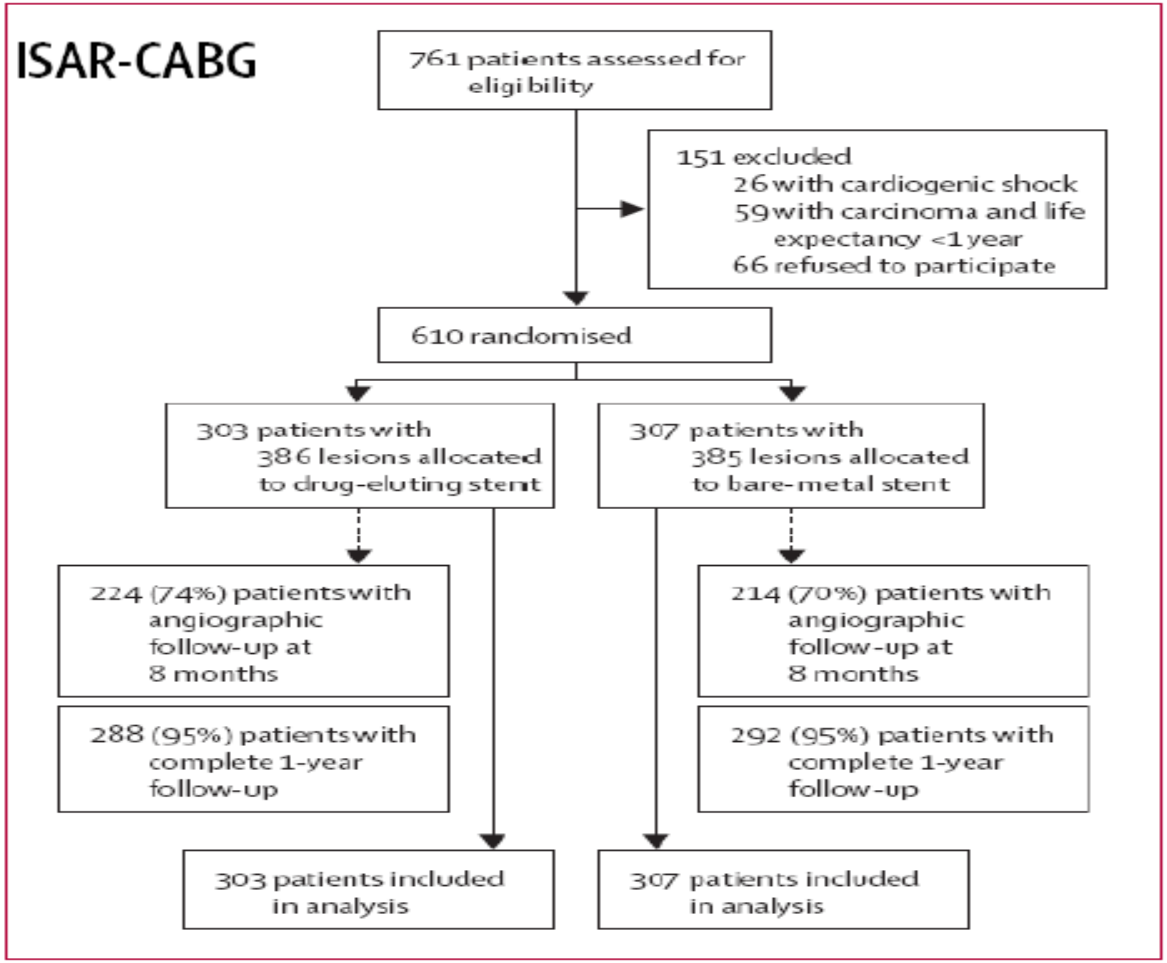
DES VERSUS BMS



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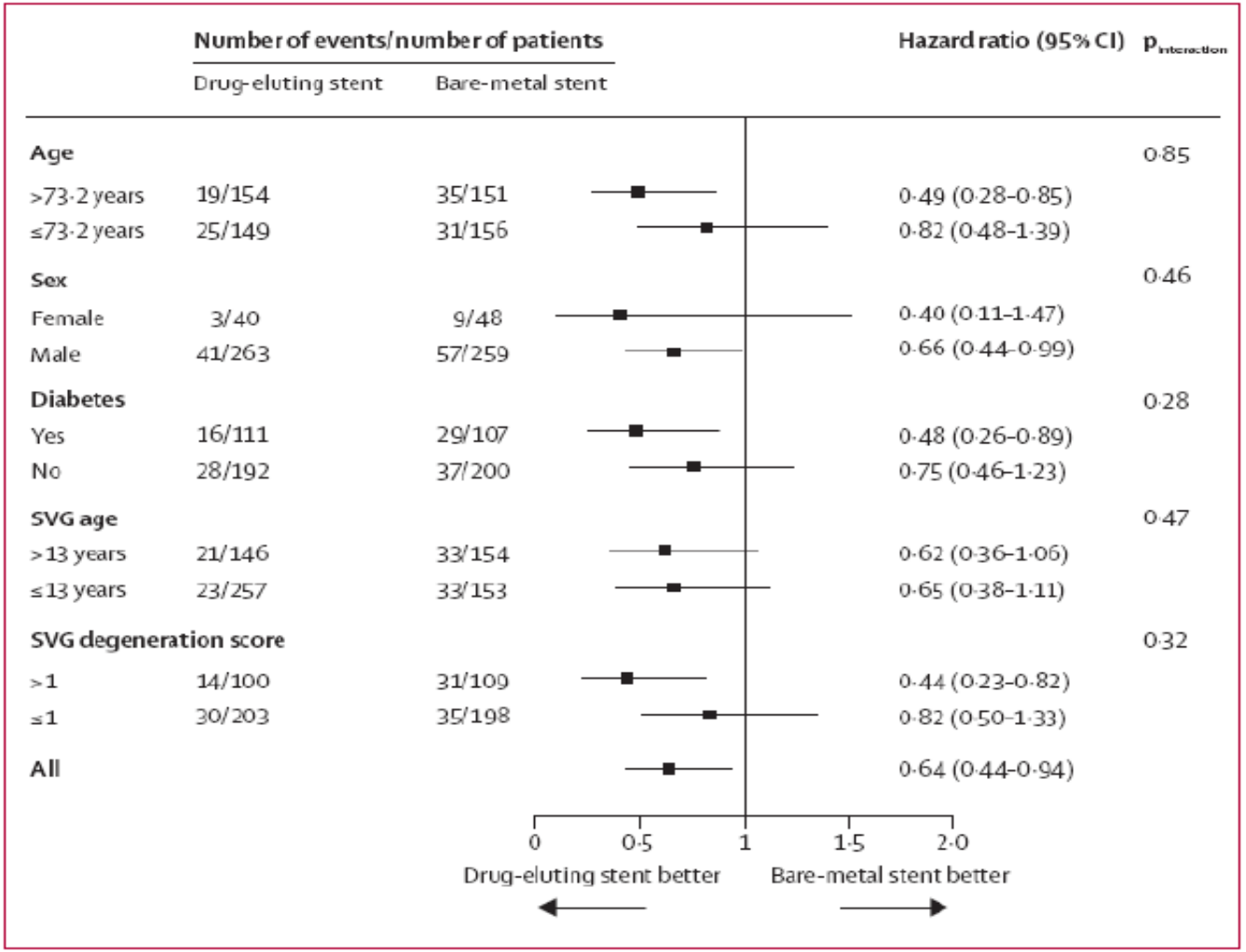
DES VERSUS BMS

ISAR-CABG



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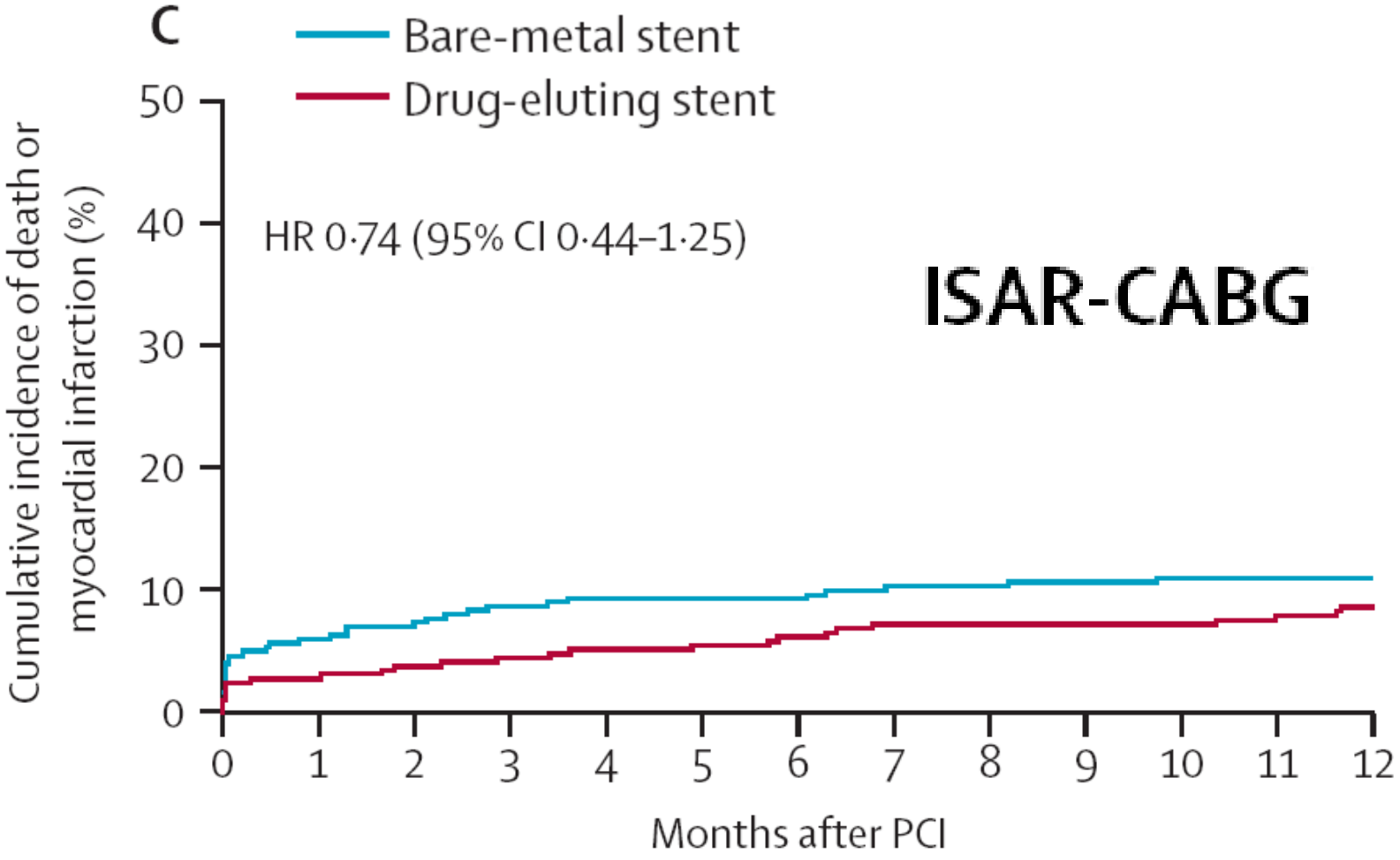
DES VERSUS BMS



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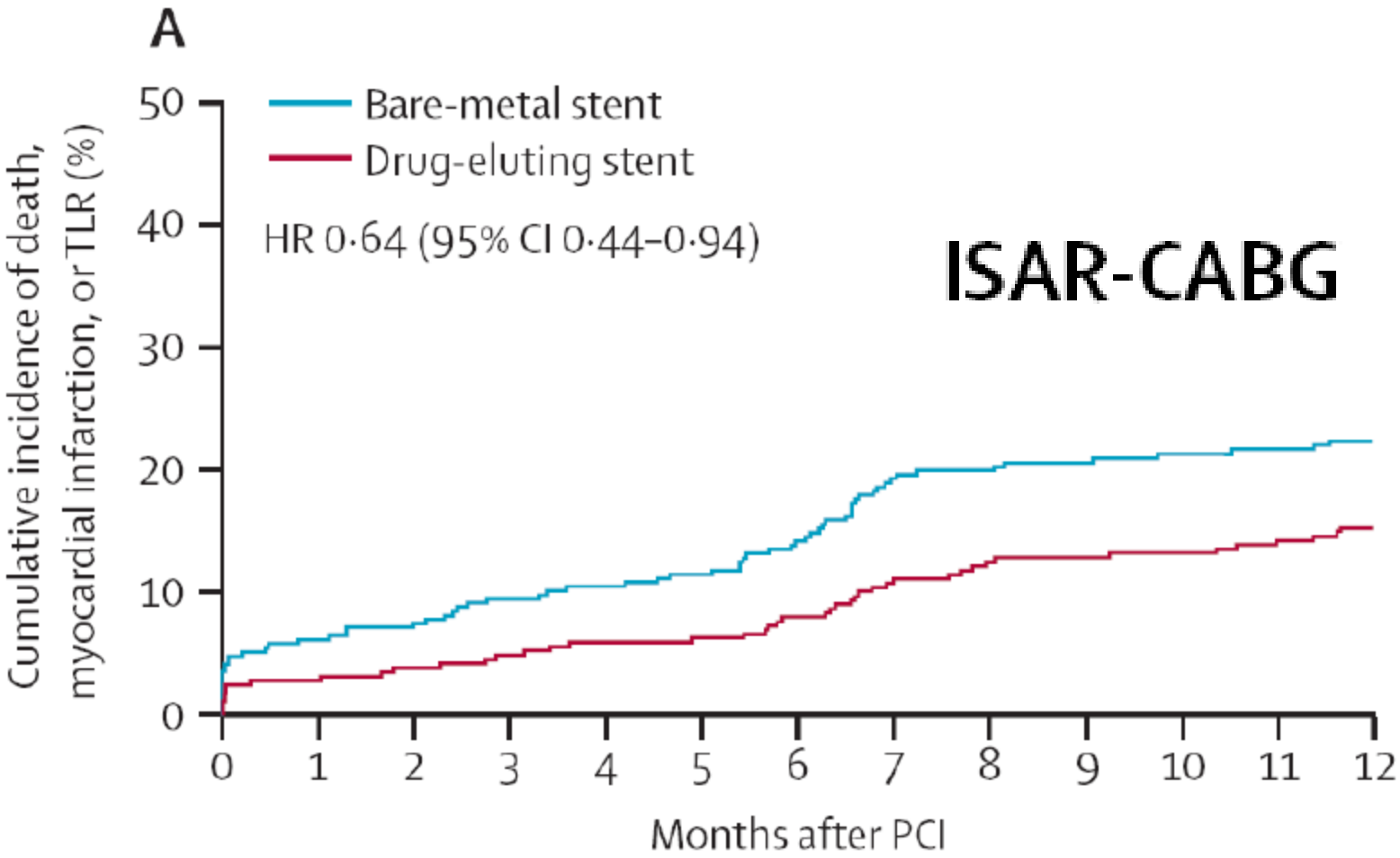
DES VERSUS BMS



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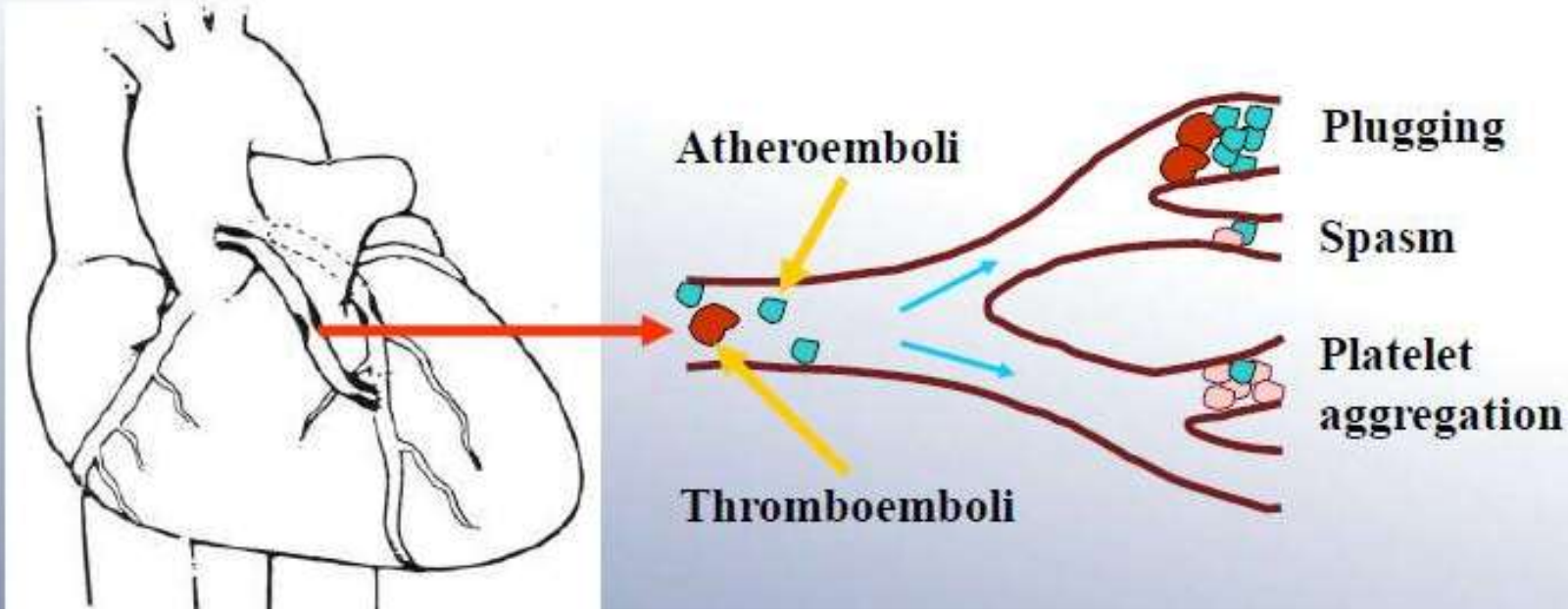
Causes of Microvascular Obstruction

- **Distal embolization** causes microvascular obstruction via plugging, with secondary spasm and platelet aggregation



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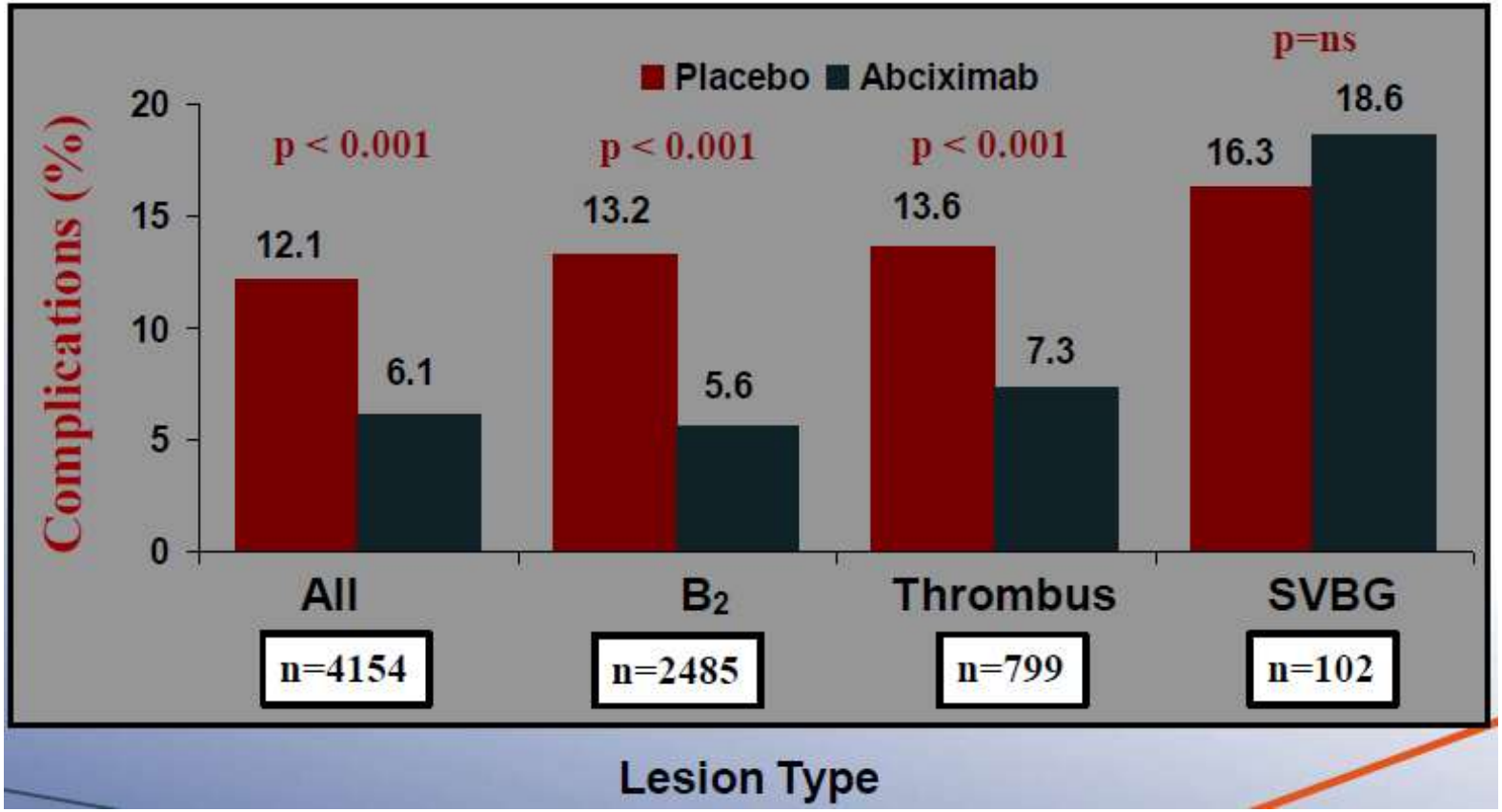
PCI AND ABCIXIMAB IN EPIC AND EPILOG



Ellis, et al. *JACC* ;32:1619, 1998.

ESC Guidelines on Myocardial Revascularization

Table 33 Recommendations for specific percutaneous coronary intervention devices and pharmacotherapy

	Class[a]	Level[b]	Ref.[c]
FFR-guided PCI is recommended for detection of ischaemia-related lesion(s) when objective evidence of vessel-related ischaemia is not available.	I	A	15, 28
DES[d] are recommended for reduction of restenosis/re-occlusion, if no contraindication to extended DAPT.	I	A	45, 46, 55, 215
Distal embolic protection is recommended during PCI of SVG disease to avoid distal embolization of debris and prevent MI.	I	B	171, 213
Rotablation is recommended for preparation of heavily calcified or severely fibrotic lesions that cannot be crossed by a balloon or adequately dilated before planned stenting.	I	C	—
Manual catheter thrombus aspiration should be considered during PCI of the culprit lesion in STEMI.	IIa	A	204–208
For PCI of unstable lesions, i.v. abciximab should be considered for pharmacological treatment of no-reflow.	IIa	B	55, 209, 212
Drug-eluting balloons[d] should be considered for the treatment of in-stent restenosis after prior BMS.	IIa	B	174, 175
Proximal embolic protection may be considered for preparation before PCI of SVG disease.	IIb	B	214
For PCI of unstable lesions, intracoronary or i.v. adenosine may be considered for pharmacological treatment of no-reflow.	IIb	B	209
Tornus catheter may be used for preparation of heavily calcified or severely fibrotic lesions that cannot be crossed by a balloon or adequately dilated before planned stenting.	IIb	C	—
Cutting or scoring balloons may be considered for dilatation of in-stent restenosis, to avoid slipping-induced vessel trauma of adjacent segments.	IIb	C	—
IVUS-guided stent implantation may be considered for unprotected left main PCI.	IIb	C	—

Wijns. Eur Heart J 2010.

CONCLUSÕES

- A via radial é uma excelente opção
- Stent de tamanho adequado (Relação 1:1)
- Evitar utilizar altas pressões de liberação
- Utilizar SEMPRE os filtros de proteção
- Stents farmacológicos são seguros e mais eficazes que os convencionais *
- Os inibidores da glicoproteína IIb – IIIa NÃO previnem o fenomeno de No-Reflow
- Os Stents revestidos (PTFE) NÃO devem ser utilizados