Reste t il une place pour les filtres dans l'ATC du pontage veineux ?

GRCI Dec 2018
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NCN le Confluent / ICPS Massy
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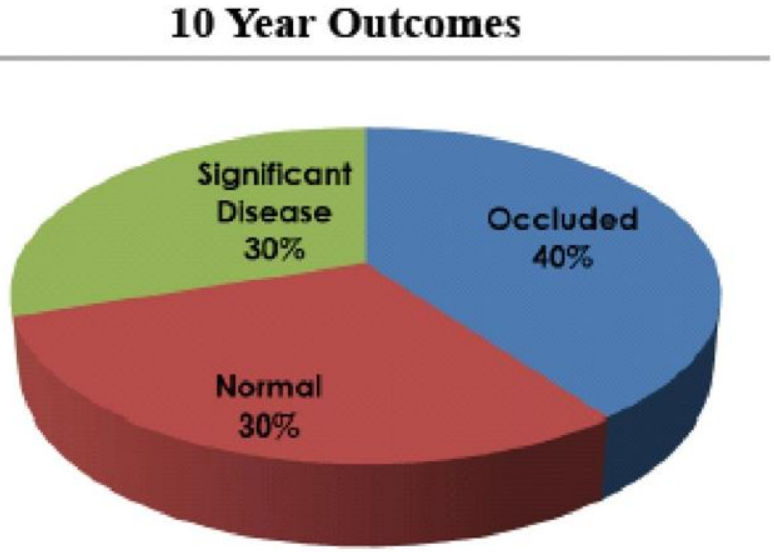
Pas de conflit d’interet

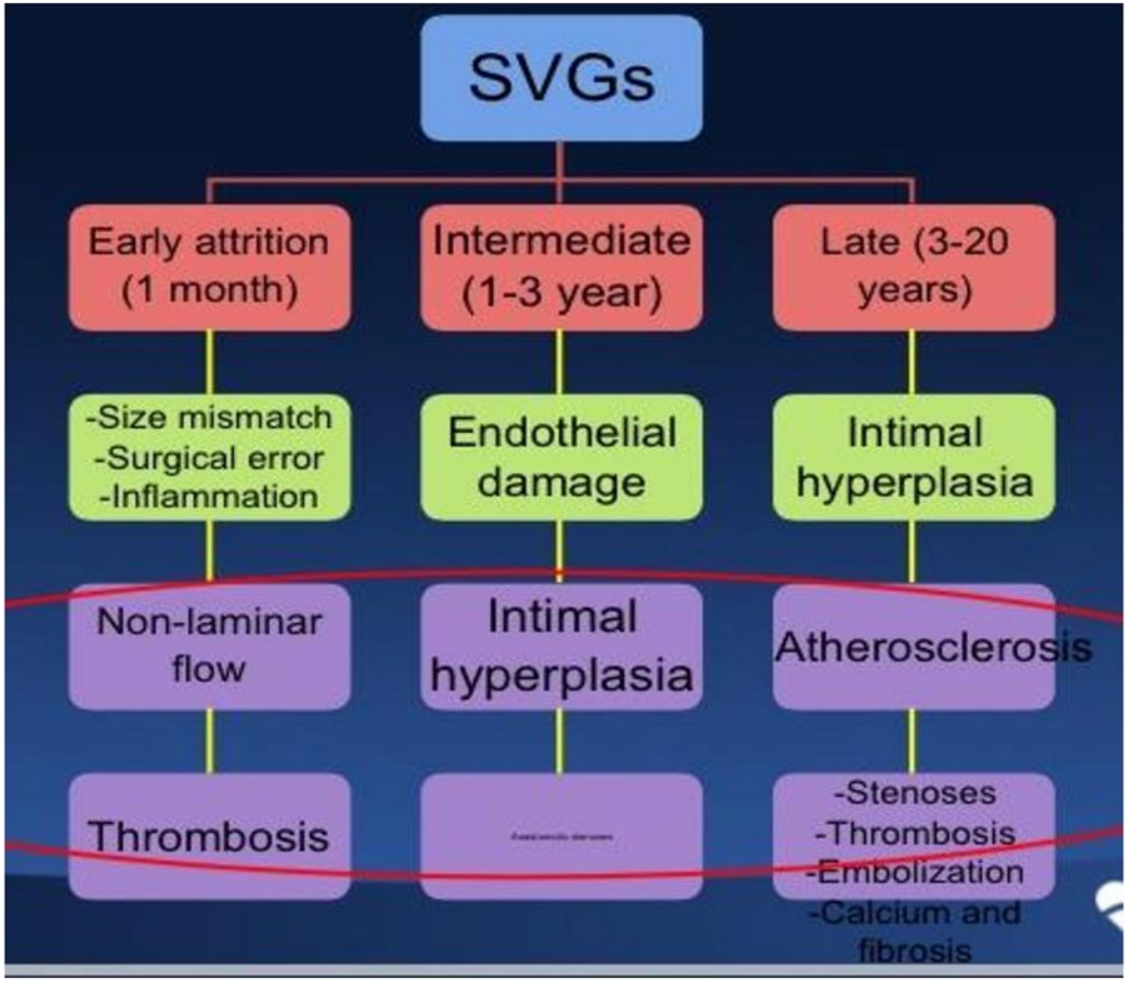
Taux occlusion pontages

- 1 Year 15%
- 1- 6 Years 1-2% / year
- 6-10 Years 4% / year



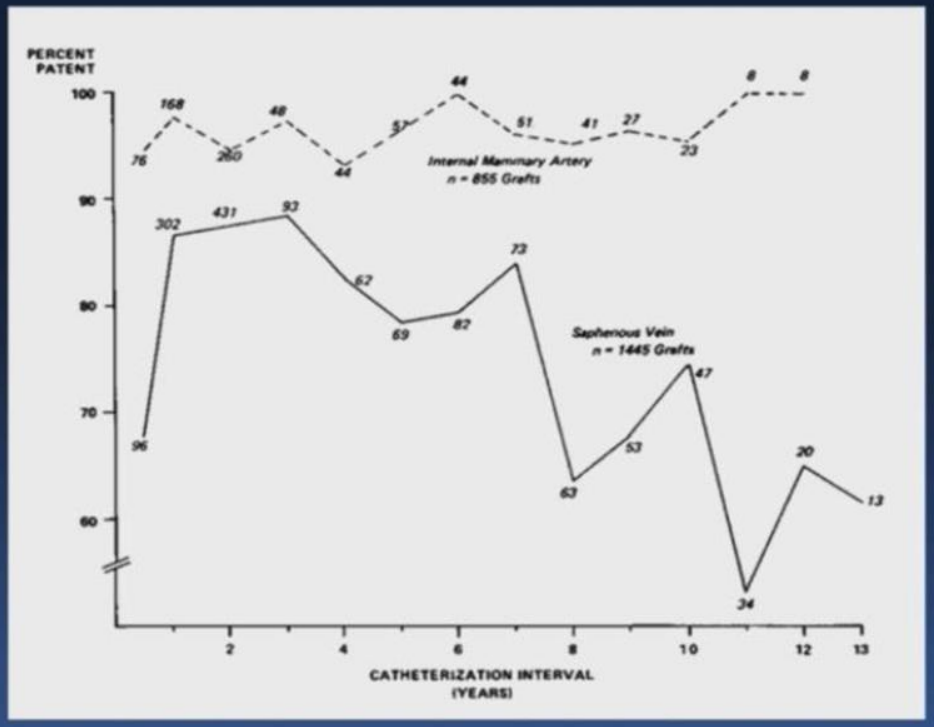
L. Campeau, NEJM 1984; B. Fitzgibbons, JACC 1996; M. Bourassa, JACC 1991

Physiopatho SVG / temps



SVG : Taux occlusion

Saphenous vein bypass graft patency



closure rates estimated to be 12% to 20% at the end of the first year and ≈50% by 10 years.

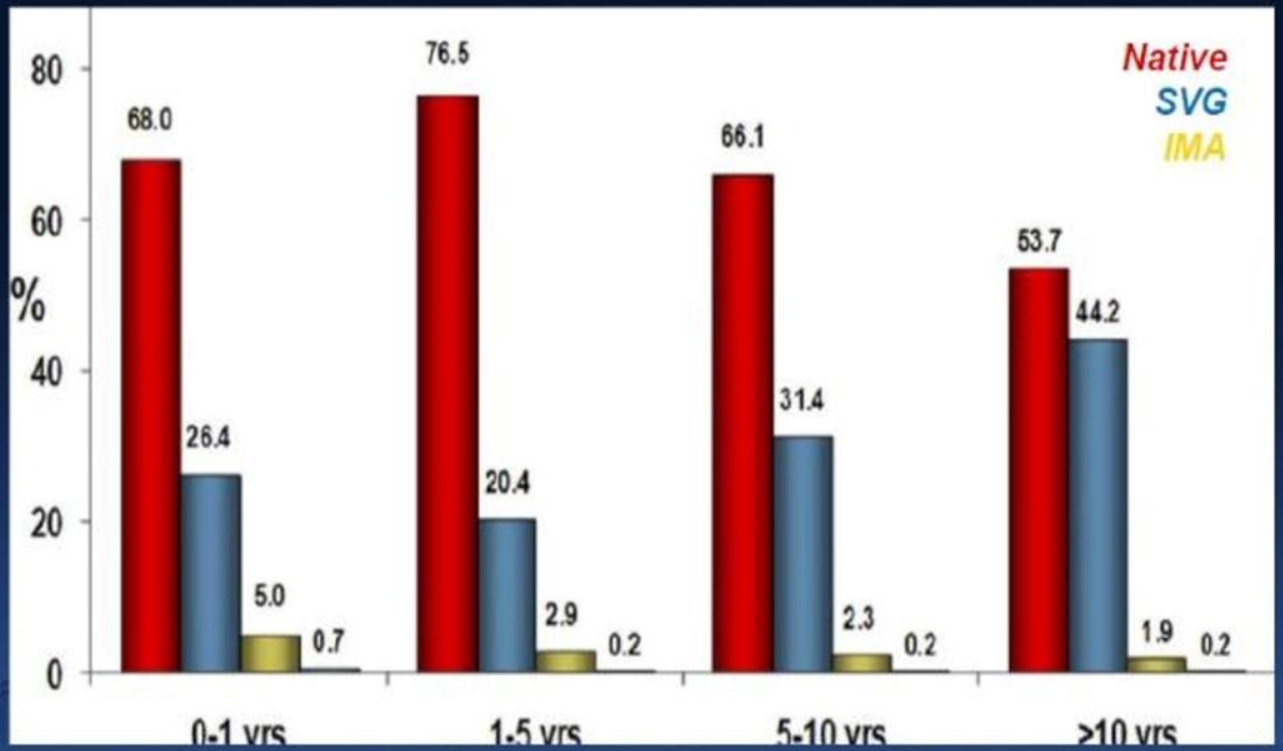
Loop, N Engl J Med 1986; 314:1-6

Nwasokwa ON. *Ann Intern Med*. 1995;123:528 –545.

Columbia University Medical Center

NewYork-Presbyterian

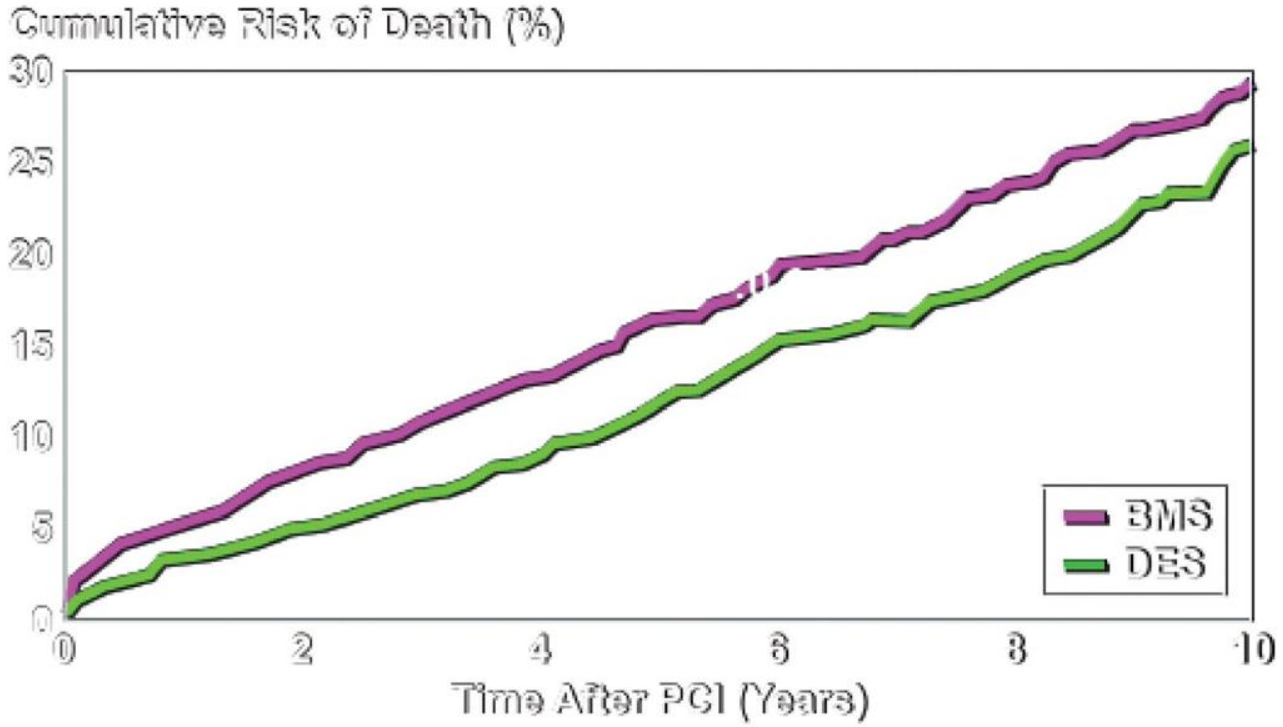
Target Vessel for PCI Among Patients Classified According to the Interval From CABG



Data from the National Cardiovascular Data Registry analyzing over 300.000 post CABG patients. Between 2004 and 2009

SVG-Long Term: BMS vs DES

SCAAR Registry 2005-2011

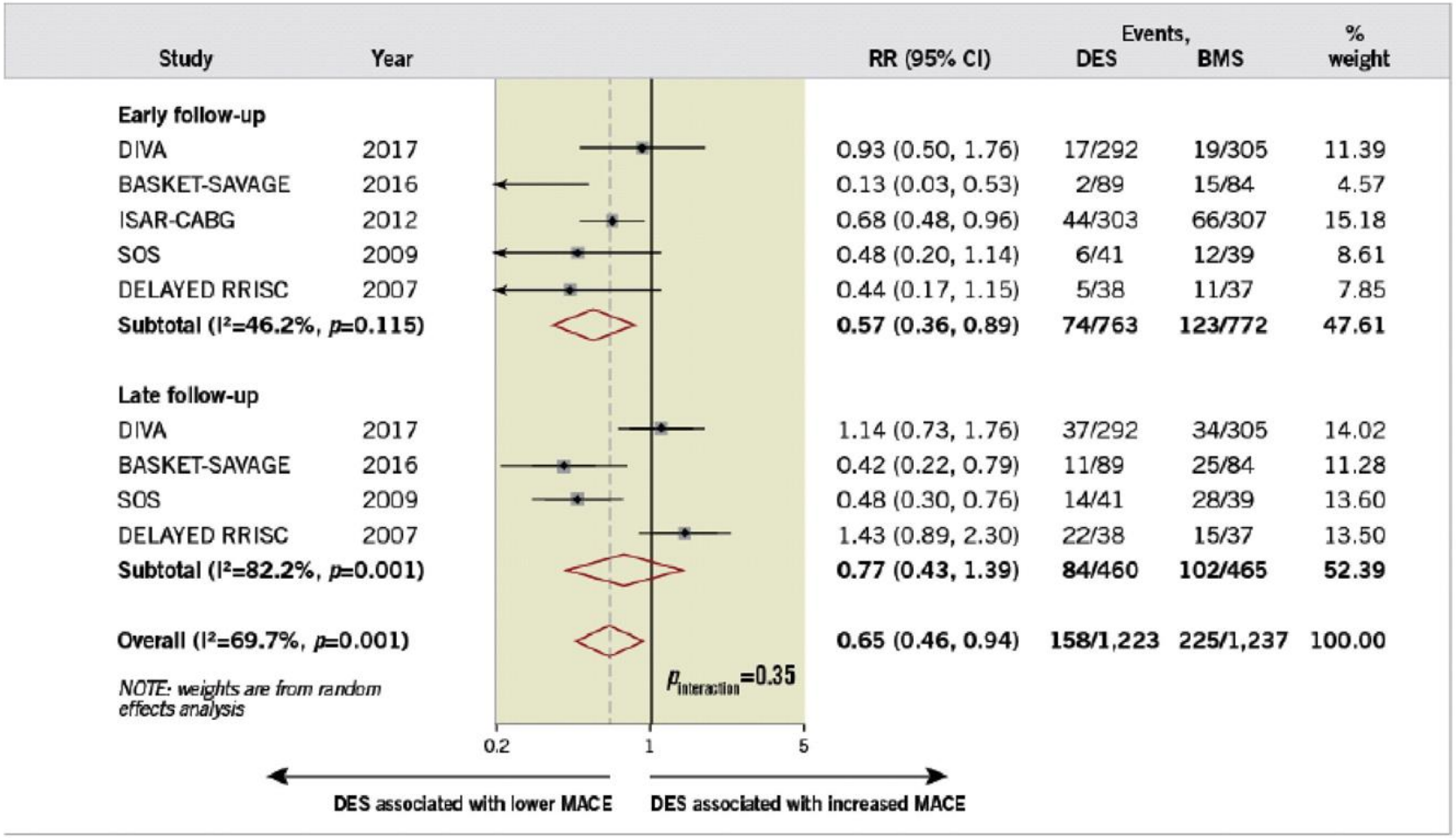


No at risk

BMS	**1569**	**1331**	**1045**	**686**	**394**	**147**
DES	**1144**	**937**	**743**	**504**	**365**	**219**

Frobert O., Am Heart J 2012;164:87-93

SVG : DES vs BMS



CORONARY INTERVENTIONS

Drug-eluting stents versus bare metal stents for saphenous vein graft revascularisation: a meta-analysis of randomised trials

Published on 20 June 2018

SVG : DES vs BMS

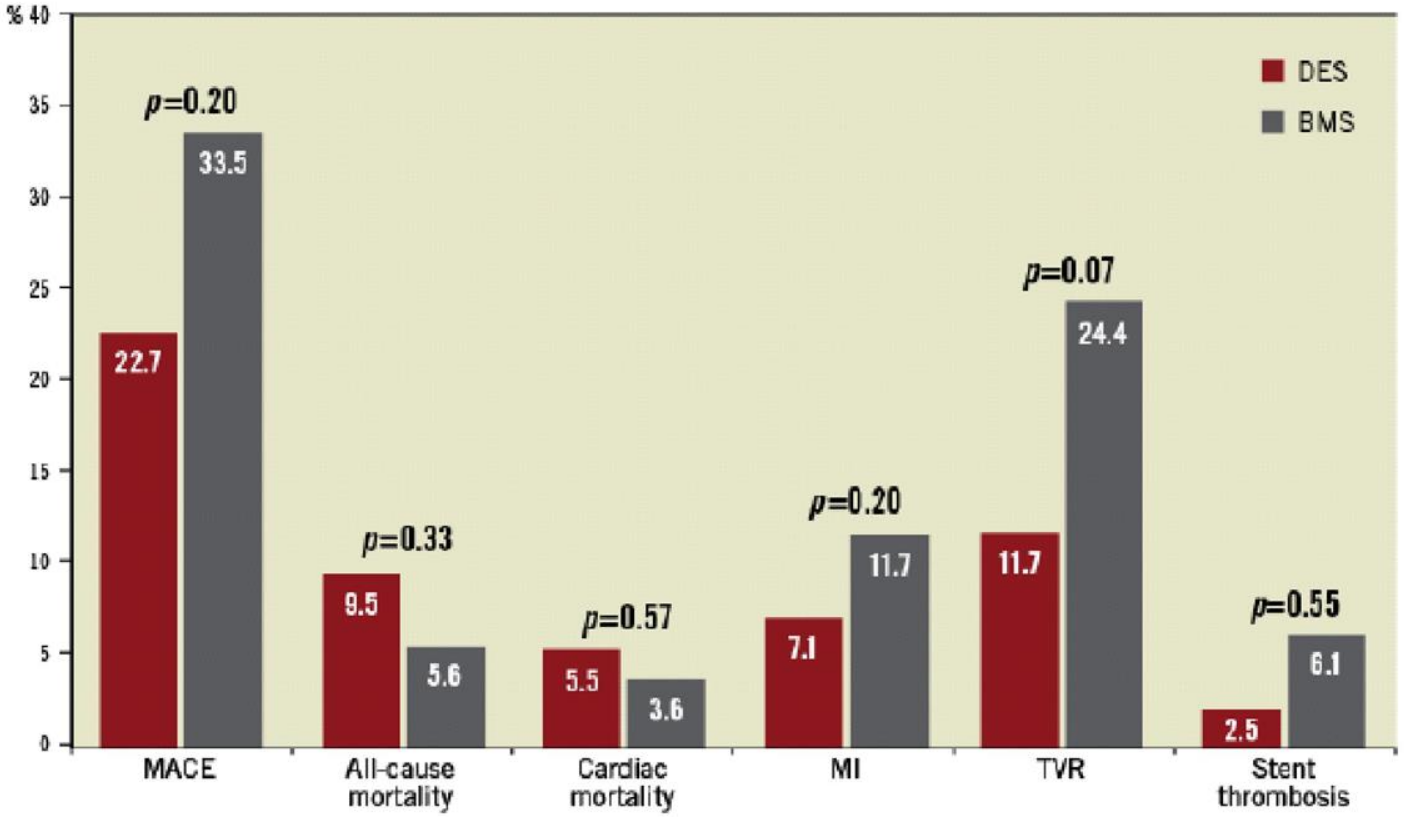


Figure 4. Bar chart summarising the incidences of all the outcomes assessed in this meta-analysis.

CORONARY INTERVENTIONS

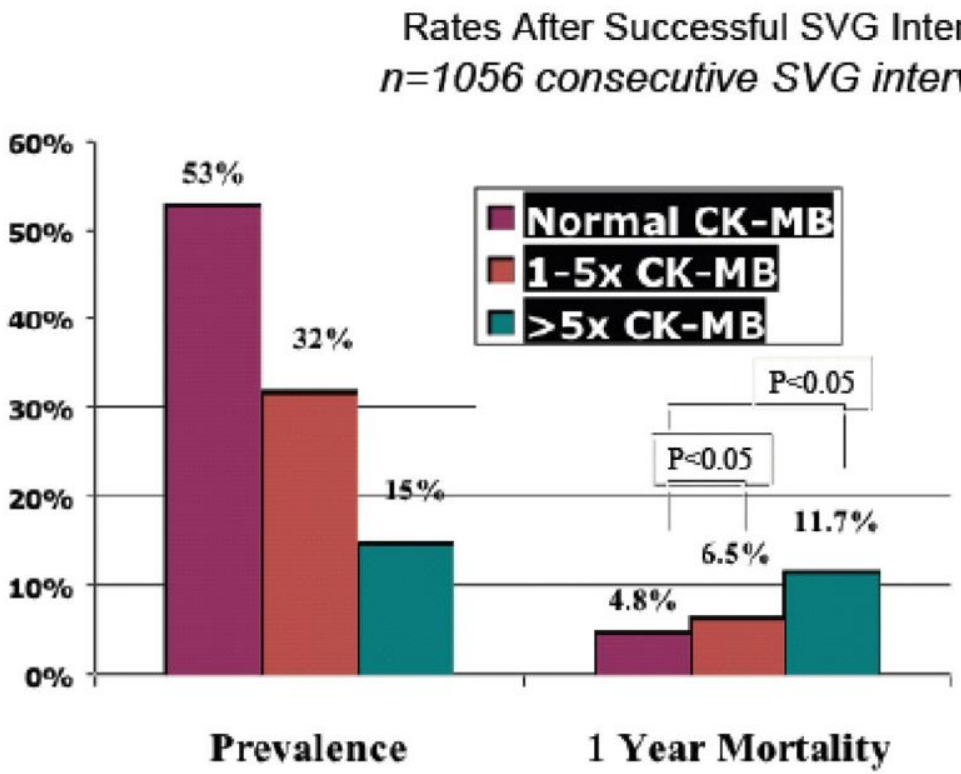
Drug-eluting stents versus bare metal stents for saphenous vein graft revascularisation: a meta-analysis of randomised trials

Published on 20 June 2018

No reflow

- Complicates 10–15% of SVG PCI1
- 31% rate of acute myocardial infarction2
- Increases in-hospital mortality by 10-fold2

SVG : MI post PCI



- 47% had CK-MB rise, even after successful PCI
- 15% had major CK-MB rise

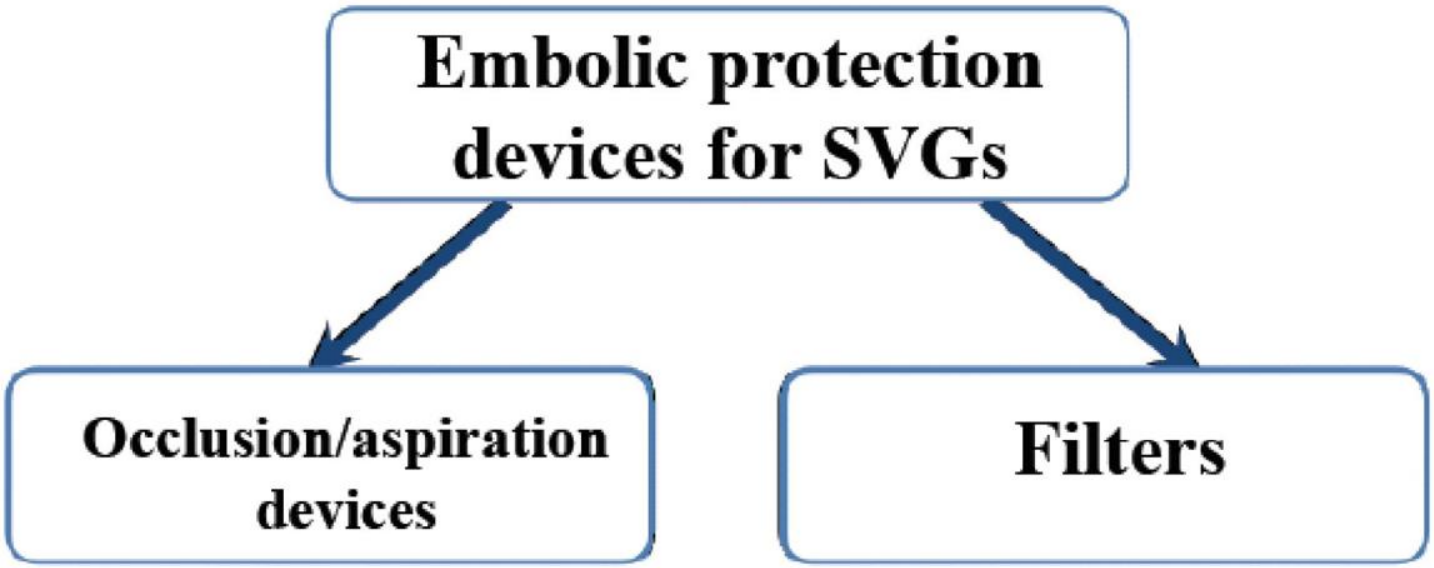
- Even minor CK-MB rise related to a significant late mortality increase
- Patients with major CK-MB rise had 2.5x the mortality as those with normal CK-MB

2400-2405

Prévention du No reflow / MI

- Vasodilators
- GP IIb/IIIa inhibitors
- PTFE Covered stents
- Undersized stents
- Low pressure stent deployment
- Acolysis
- Laser
- Thrombectomy
- EMBOLIC PROTECTION DEVICES

EPD



- Guardwire

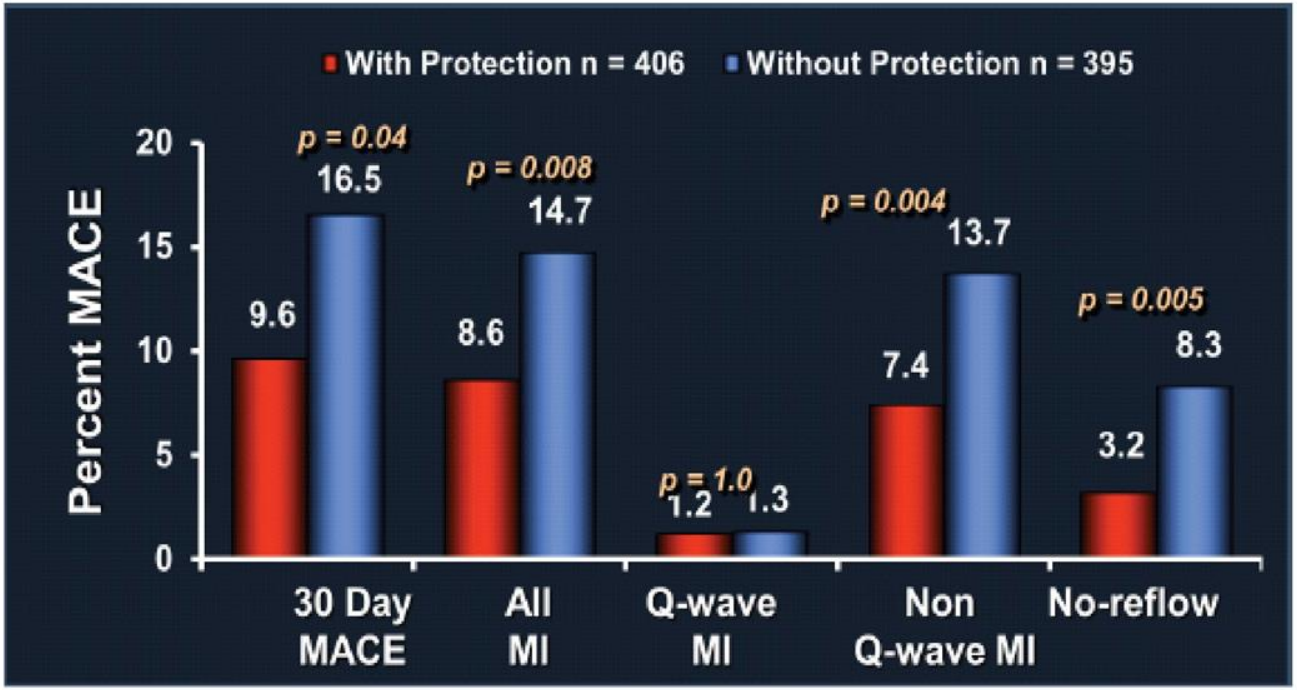
- Filterwire
- Spider

EPD

Device	Manufacturer	Approval date
Guardwire 	Medtronic	6/2001
Filterwire 	Boston Scientific	6/2003
Spider 	ev3	6/2006

SAFER: Primary Endpoint

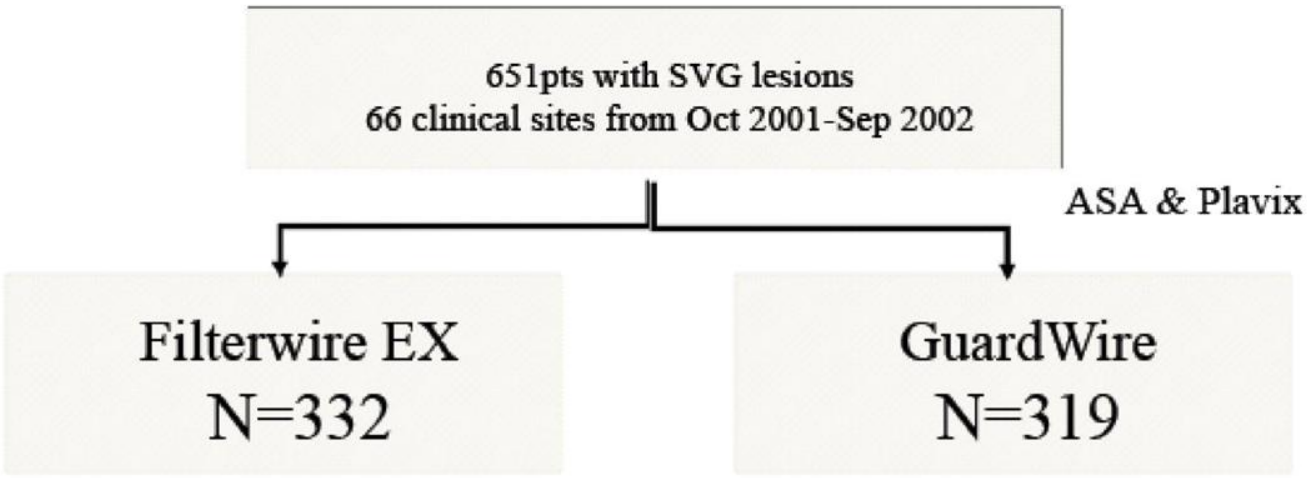
30 Day Outcomes



42% relative reduction in MACE

Baim DS, et al Circulation 2002;105:1285-1290

FilterWire EX Randomized Evaluation (FIRE)



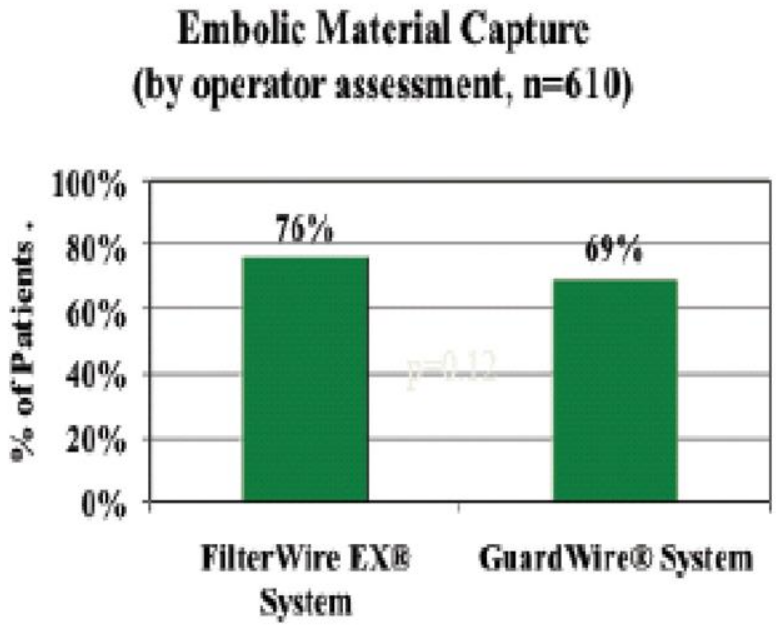
Non-Inferiority Analysis

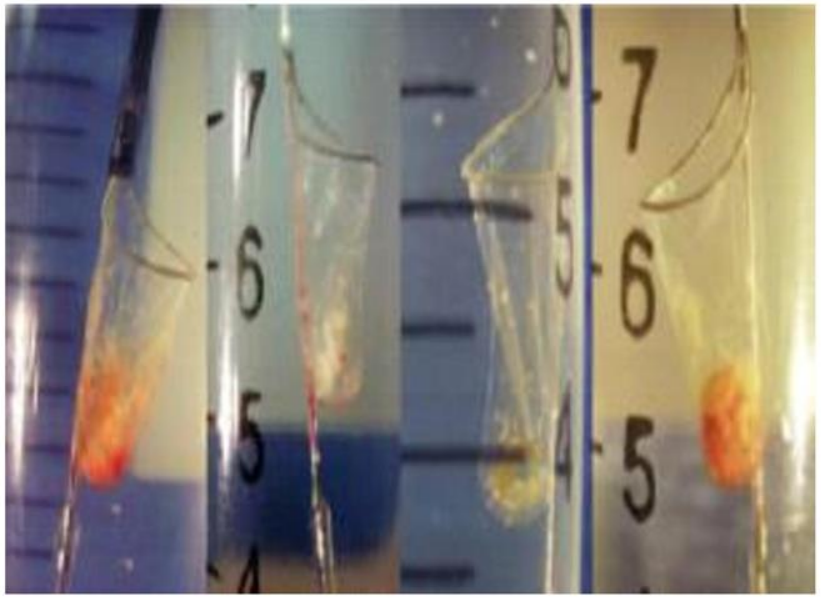
Primary endpoint: MACE at 30-days = Death, MI* (Q-wave and non-Q wave), TLR, urgent CABG

Stone et al. *Circulation* 2003;108:548-553

Stone et al. *Circulation* 2003;108:548-553

Capture débris (FIRE)

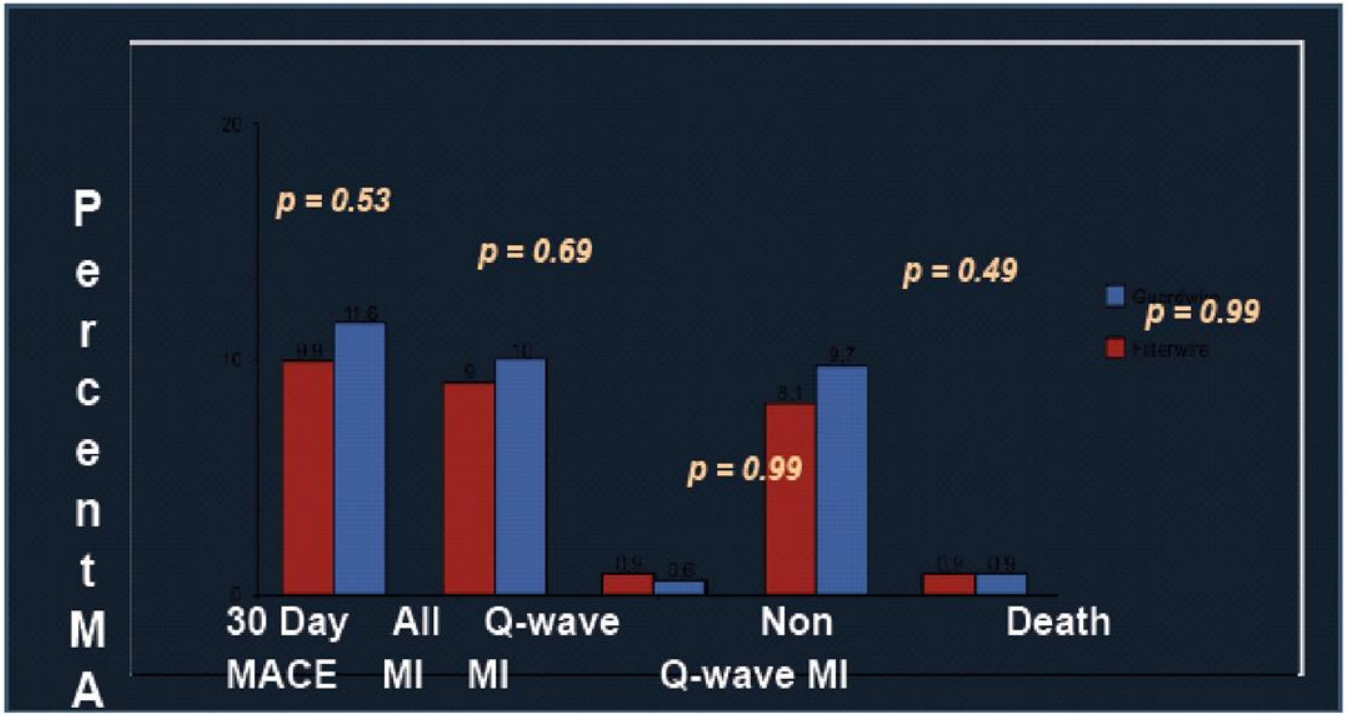




-Giora Weisz, et.al. JACC Vol. 43, number 5(supplement A); 72A-73A

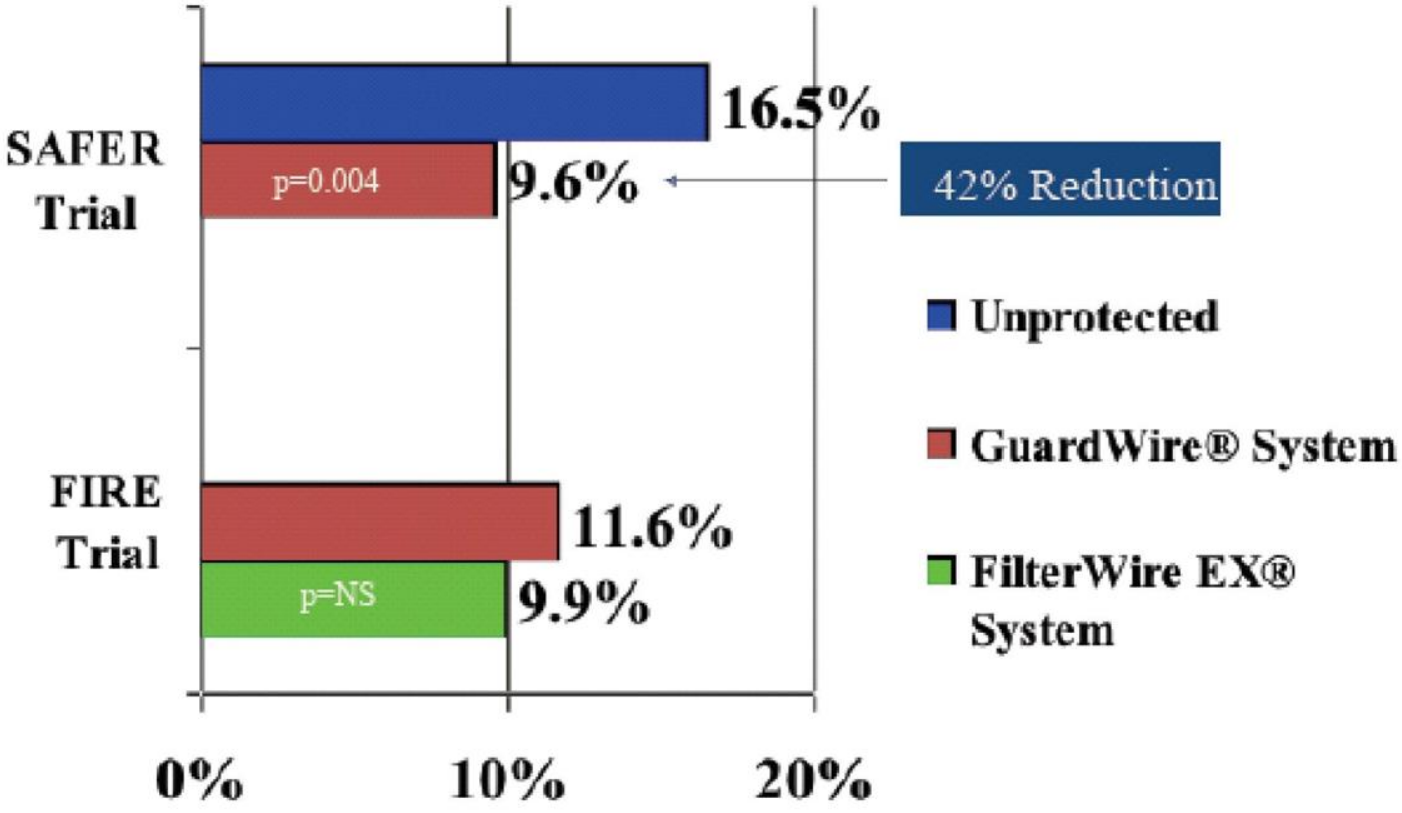
FilterWire EX Randomized Evaluation (FIRE)

30 Day Outcomes

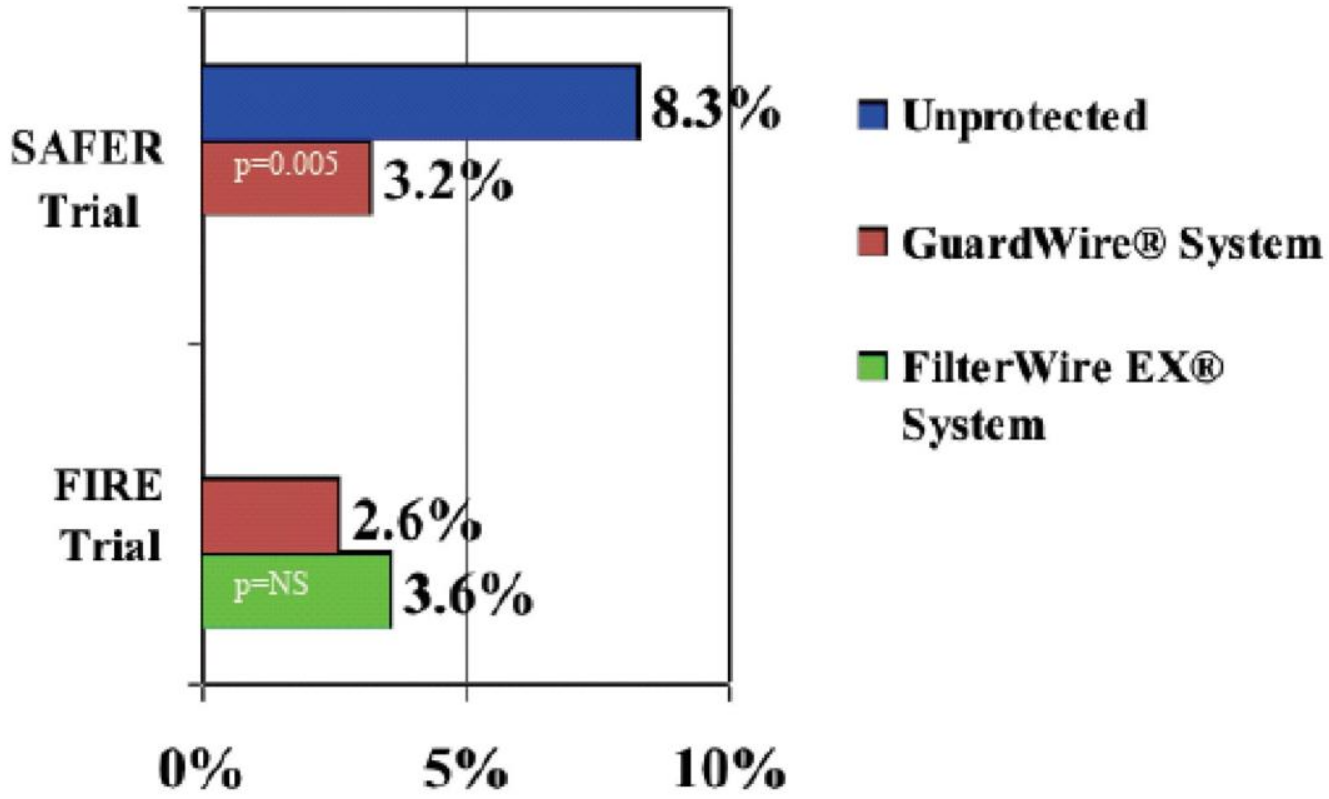


Stone et al. *Circulation* 2003;108:548-553

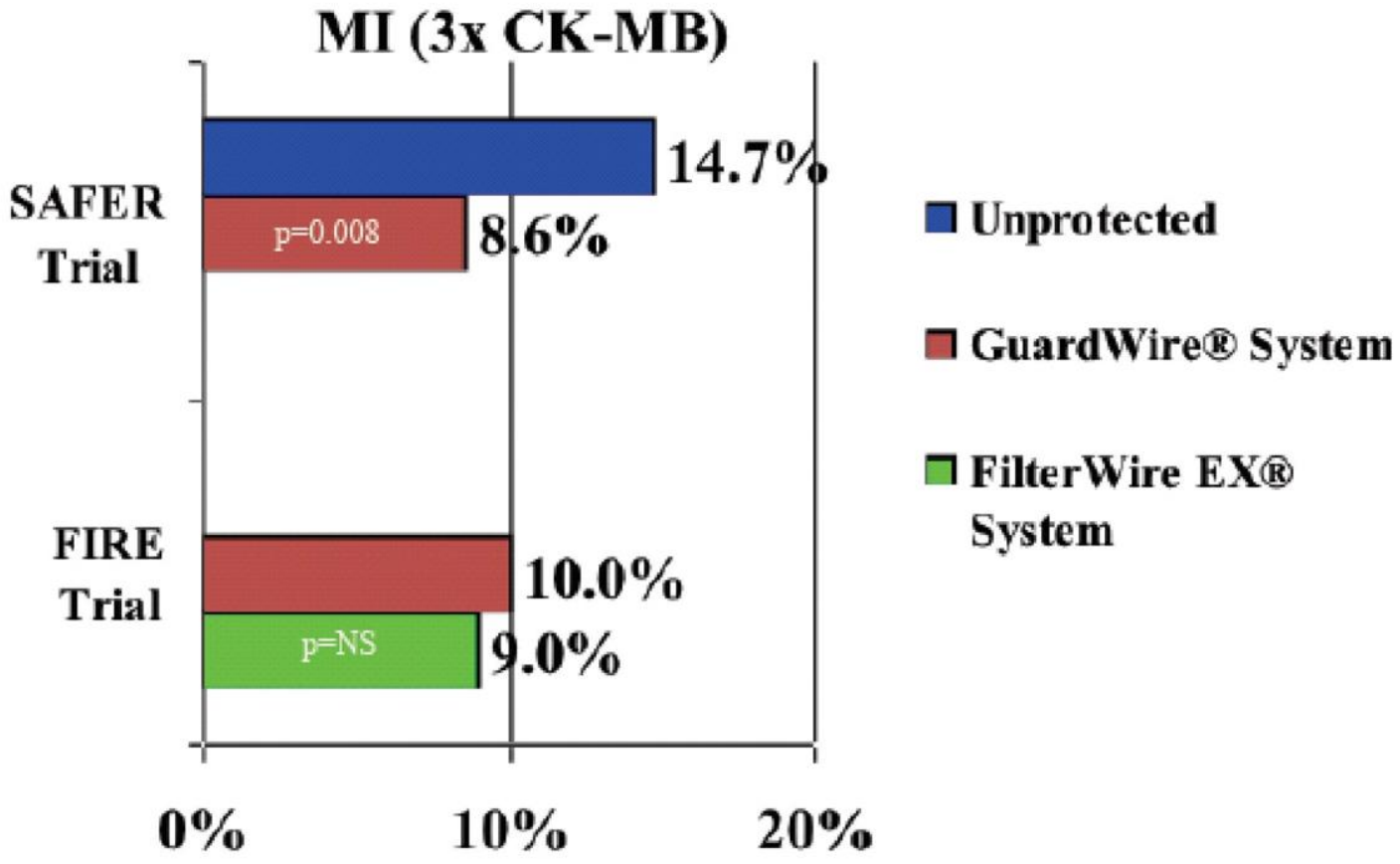
EPD : réduction MACE



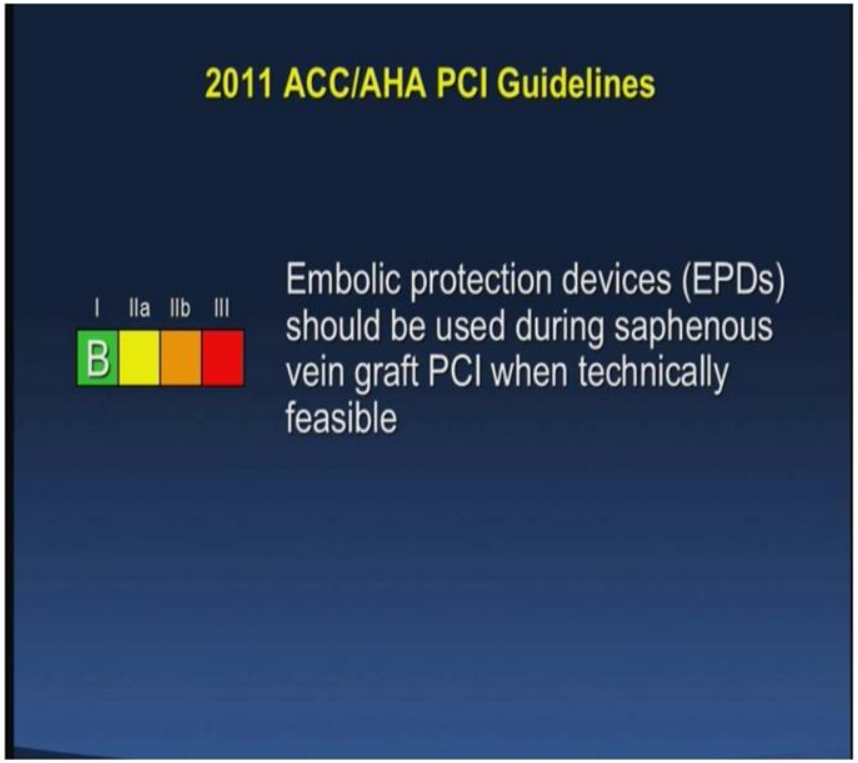
EPD : Réduction no reflow



EPD : réduction MI péri procédure



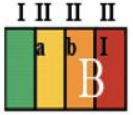
Recommandations



2011 ACCF/AHA/SCAI Guidelines for PCI

Saphenous Vein Grafts

EPDs should be used during SVG PCI when technically feasible.



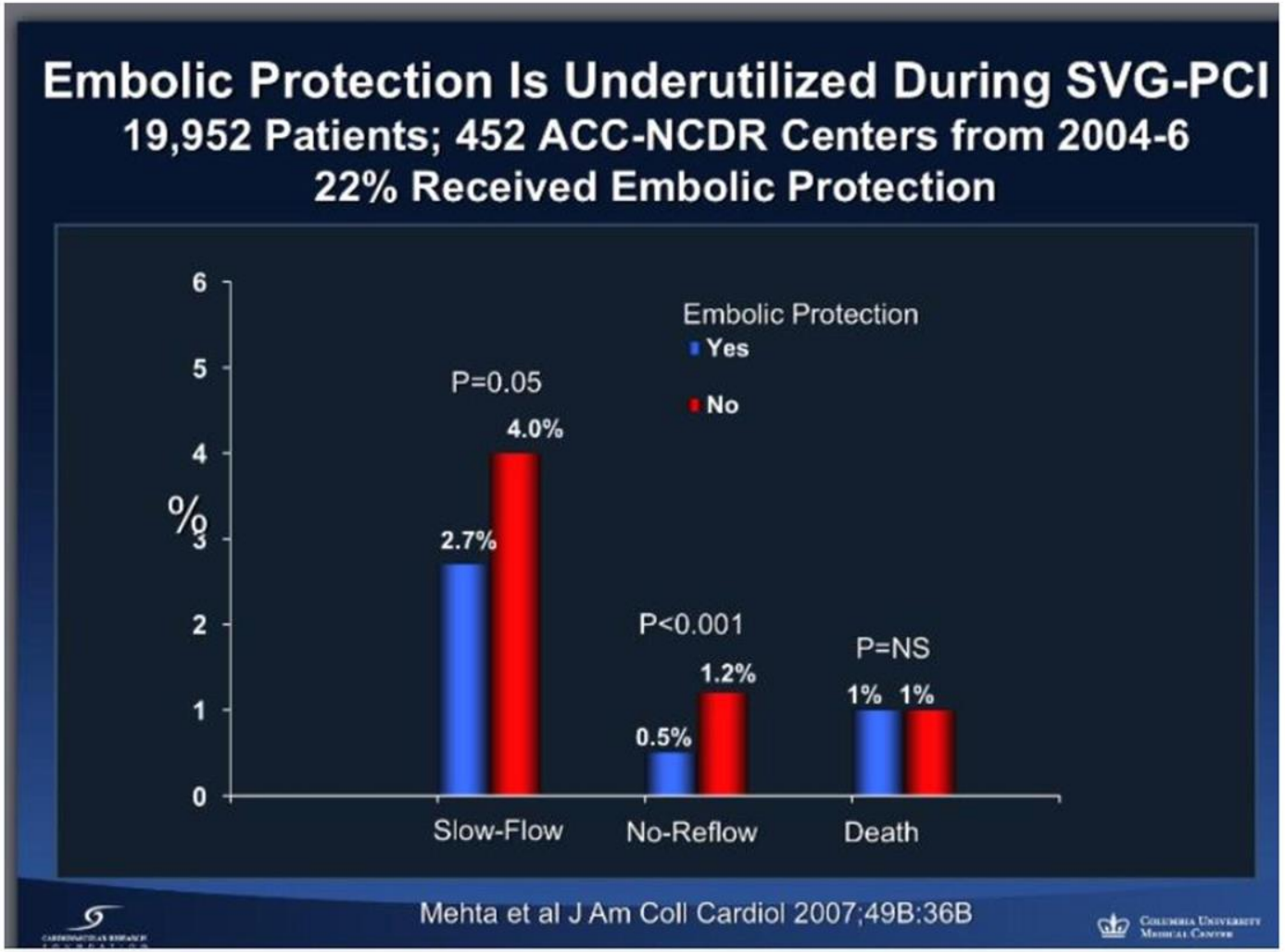
No Benefit

Platelet GP IIb/IIIa inhibitors are not beneficial as adjunctive therapy during SVG PCI.

Harm

PCI is not recommended for chronic SVG occlusions.

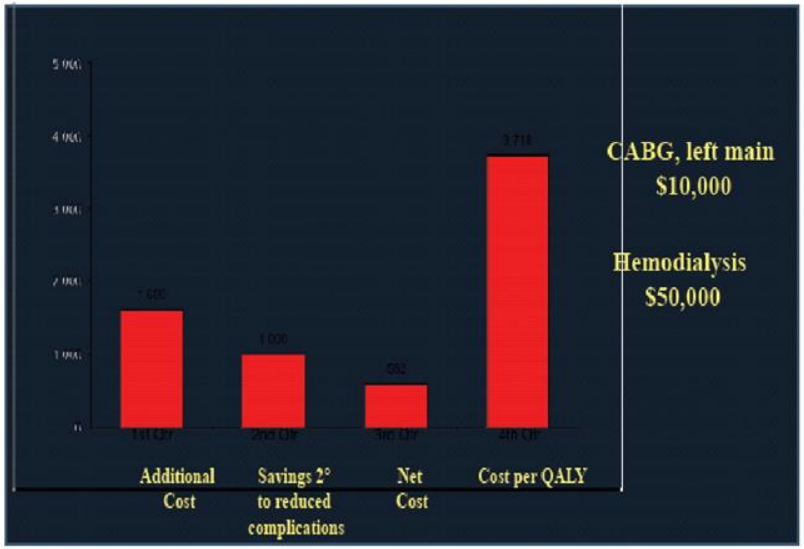
EPD : % PCI


Embolic Protection Is Underutilized During SVG-PCI
19,952 Patients; 452 ACC-NCDR Centers from 2004-6
22% Received Embolic Protection
%
6
5
4
3
2
1
0
Embolic Protection
Yes
No
P=0.05
4.0%
2.7%
P<0.001
1.2%
0.5%
P=NS
1% 1%
Slow-Flow
No-Reflow
Death
Mehta et al J Am Coll Cardiol 2007;49B:36B

Causes sous-utilisation EPD

- Occlusion
- Diamètre pontage ++
- Lésion ostiale
- Lésion post (anastomotique)
- Lésion sur séquentiel
- Degré de dégénérescence
- Absence de landing zone

- Complexité
- Durée procédure
- Iatrogénie
- surcout



Cohen D, et al J Am Coll Cardiol 2004; 44:1801

SVG unsuitable for Filter Wire or Percusurge in 42% and 57% resp . !

Mathew V, Lennon RJ, Rihal CS, Bresnahan JF, Holmes DR, Jr. Applicability of distal protection for aortocoronary vein graft interventions in clinical practice. *Catheter Cardiovasc Interv*. 2004;63:148–151.

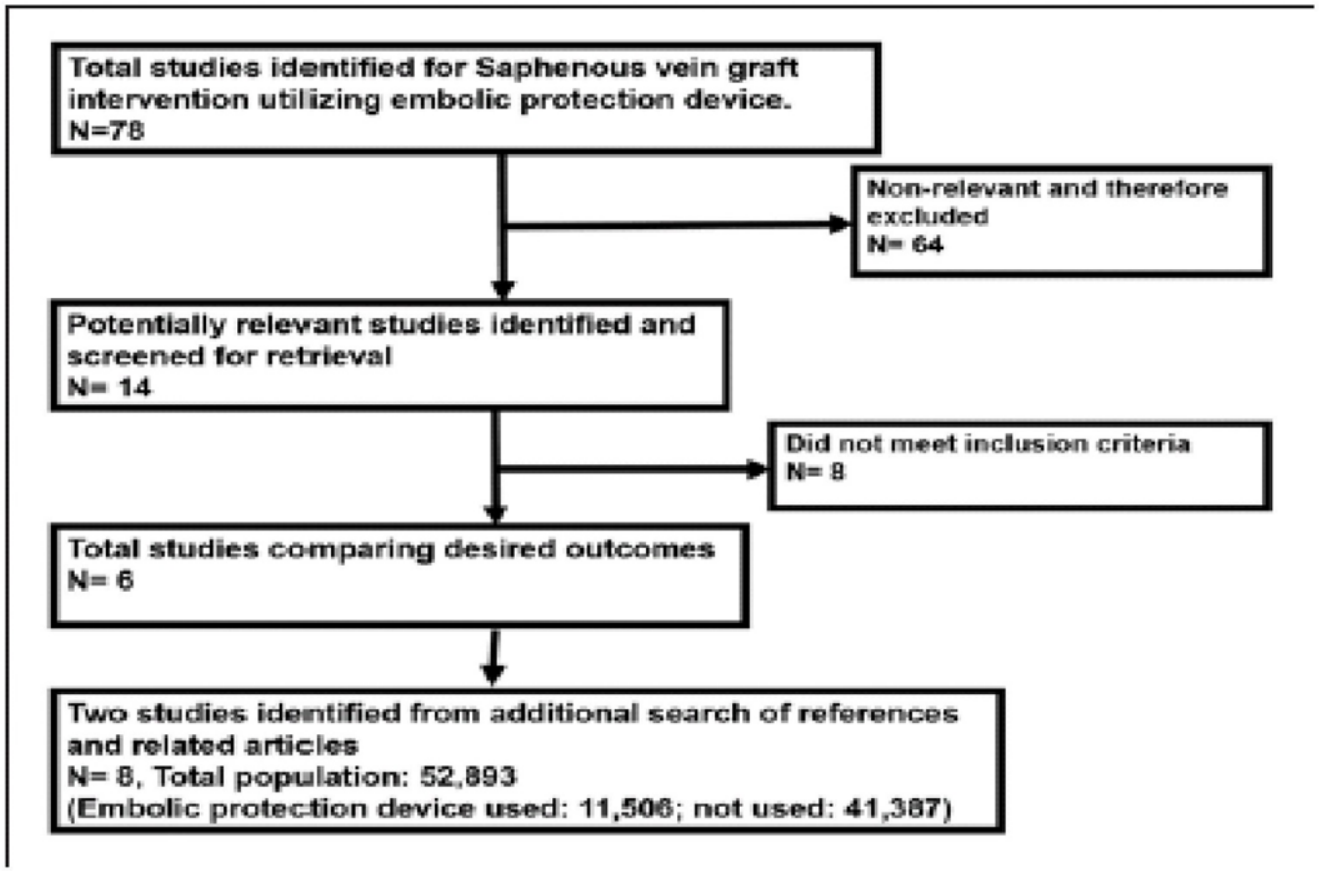
EPD

	Proximal Occlusion	Distal Occlusion	Distal Filter
Maintenance of antegrade blood flow during intervention	-	-	+
Limited contrast opacification	+	+	-
Unlimited debris capture	+	+	-
Capture of debris <100 µm	+	+	-
Capture of soluble mediators	+	+	-
Shunting of debris into proximal side branches	-	+	-
Ease of use	Complex	Complex	Simple
Manoeuverability	Good	Good	Reduced
Crossing profile	NA	Low (2.7 Fr)*	High (3.2 Fr)**

*NA = not available. * PercuSurge GuardWire (Medtronic). ** FilterWire EZ (Boston Scientific).*

Outcomes of Saphenous Vein Graft Intervention With and Without Embolic Protection Device

A Comprehensive Review and Meta-Analysis

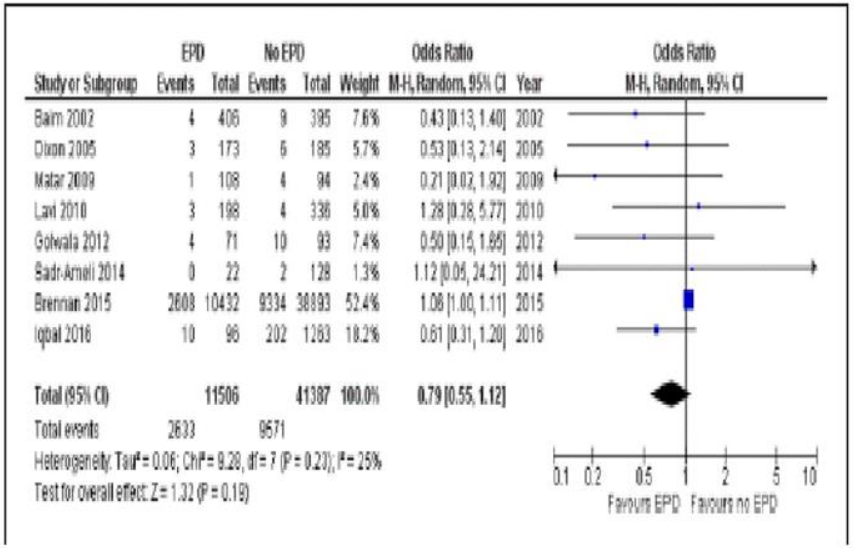


(*Circ Cardiovasc Interv*. 2017;10:e005538.]

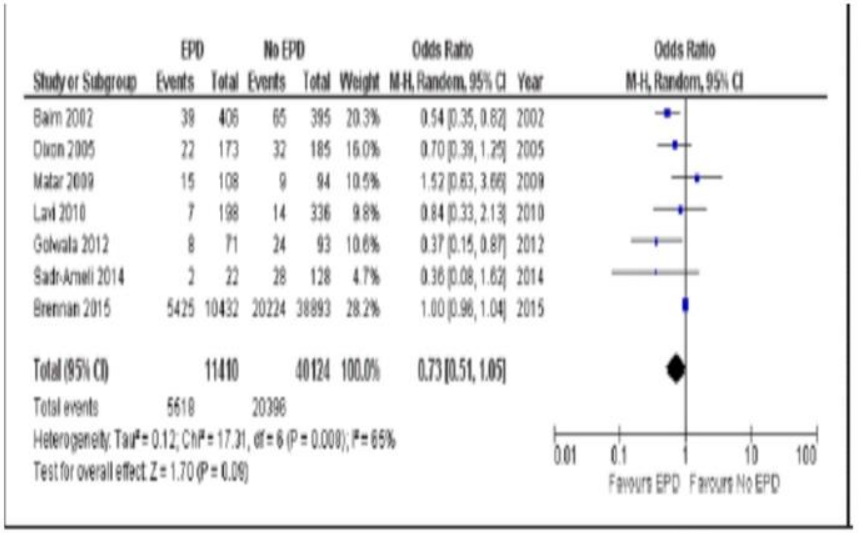
Outcomes of Saphenous Vein Graft Intervention With and Without Embolic Protection Device

A Comprehensive Review and Meta-Analysis

Mortalité 0.79



Mace 0.73

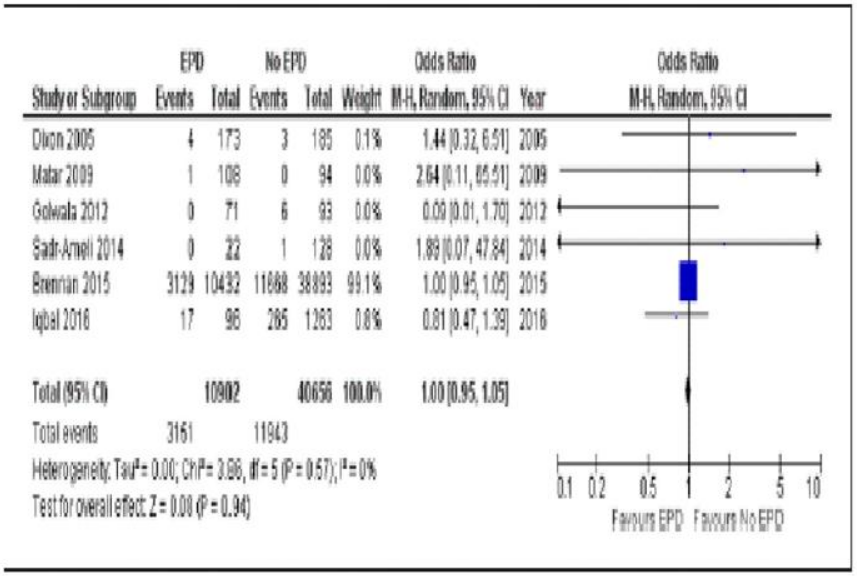


(Circ Cardiovasc Interv. 2017;10:e005538.I

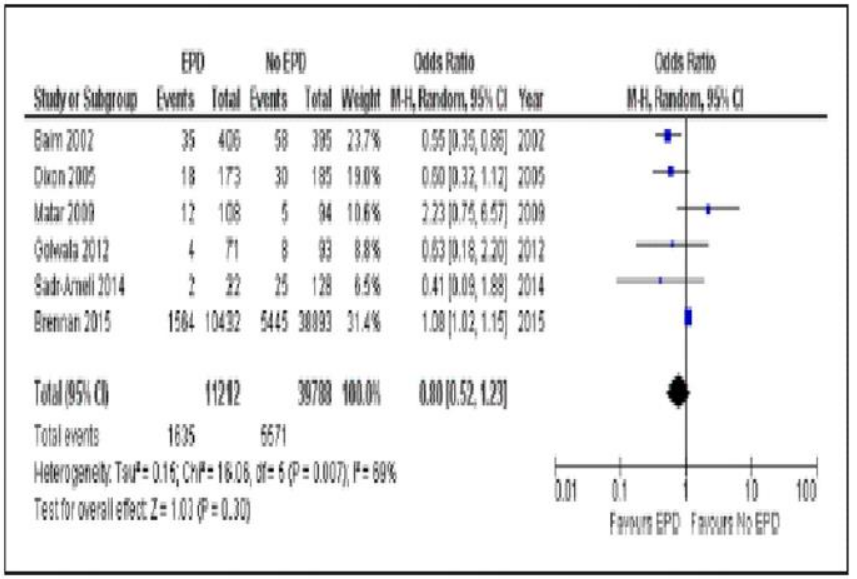
Outcomes of Saphenous Vein Graft Intervention With and Without Embolic Protection Device

A Comprehensive Review and Meta-Analysis

TVR 1



MI 0.80

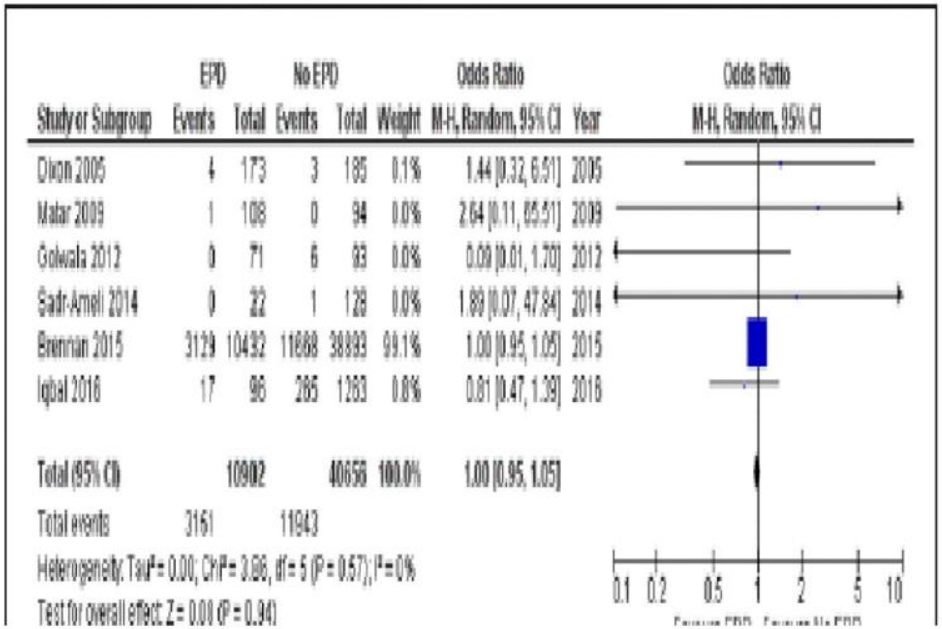


(*Circ Cardiovasc Interv*. 2017;10:e005538.I

Outcomes of Saphenous Vein Graft Intervention With and Without Embolic Protection Device

A Comprehensive Review and Meta-Analysis

Mi PERI PROCEDURE X 1.5



(Circ Cardiovasc Interv. 2017;10:e005538.I

EPD

Les cas simples :

Distal occlusion device

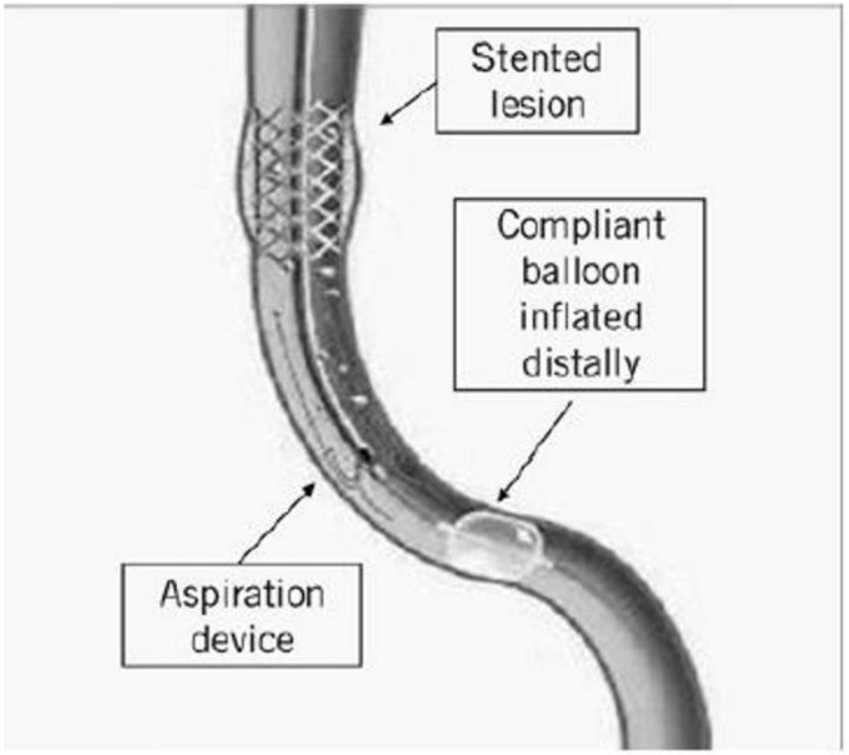
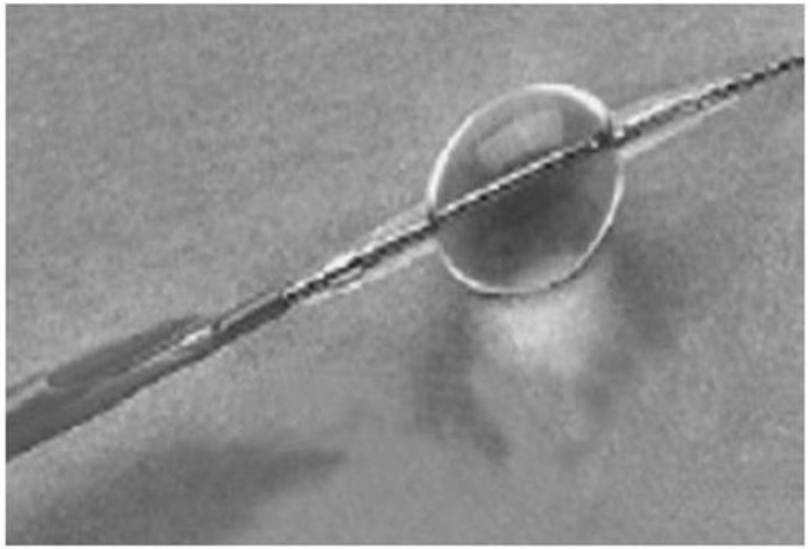
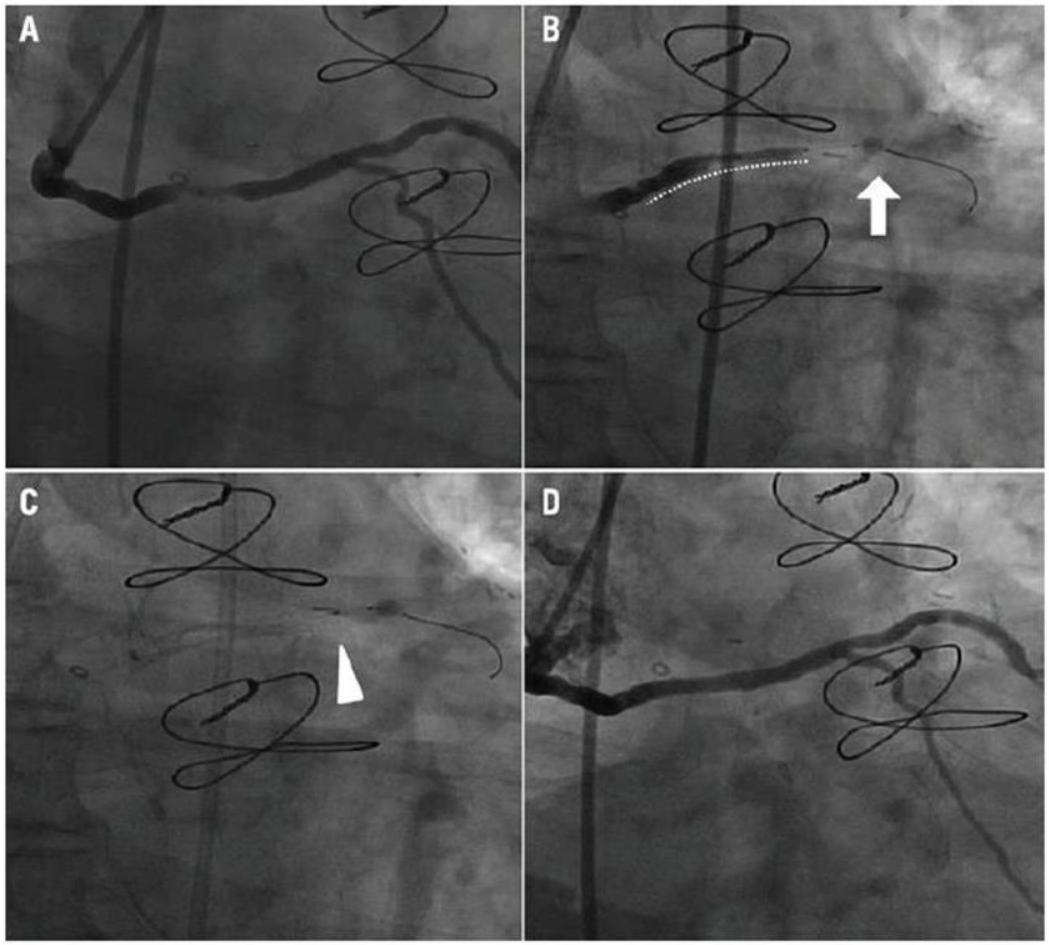


Figure 1. *Distal occlusion device, graphical representation.*

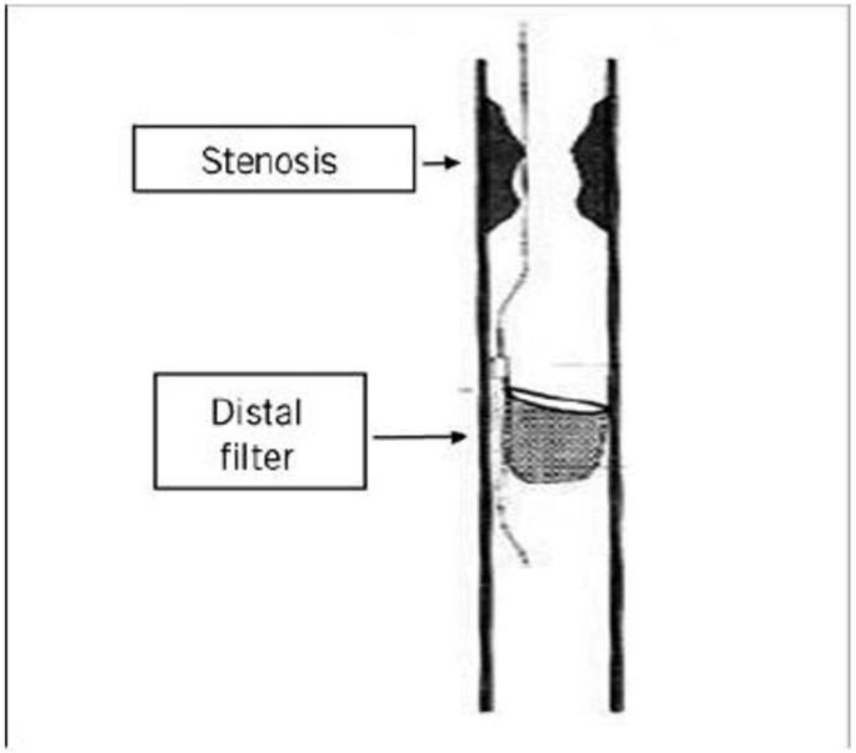


Distal occlusion device (PercuSurge GuardWire; Medtronic Inc., Minneapolis, MN, USA).

Distal occlusion device

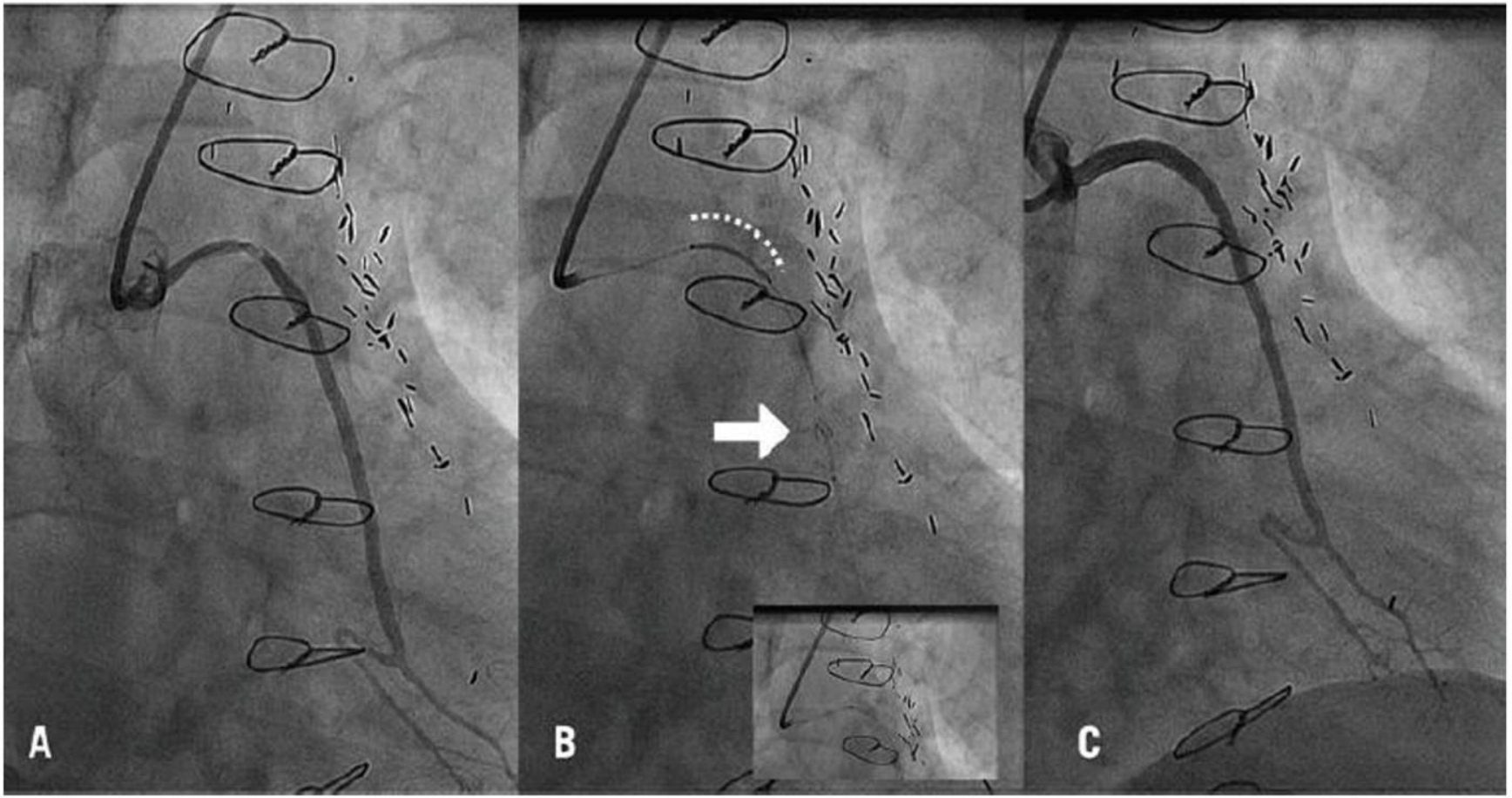


Filtre distal

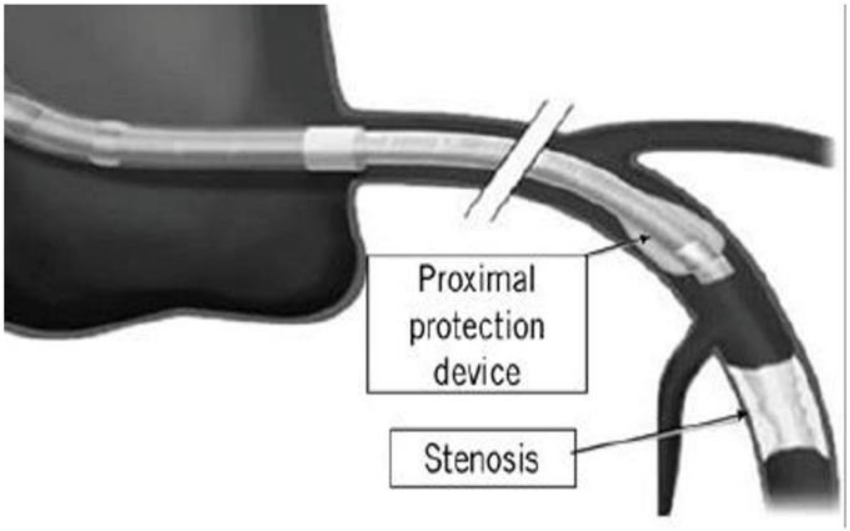


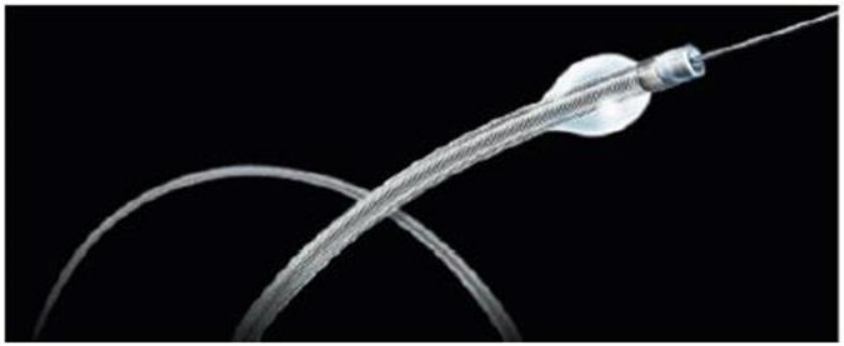
, *Distal filter (FilterWire EX®; Boston Scientific, Natick, MA, USA).*

Filtre distal



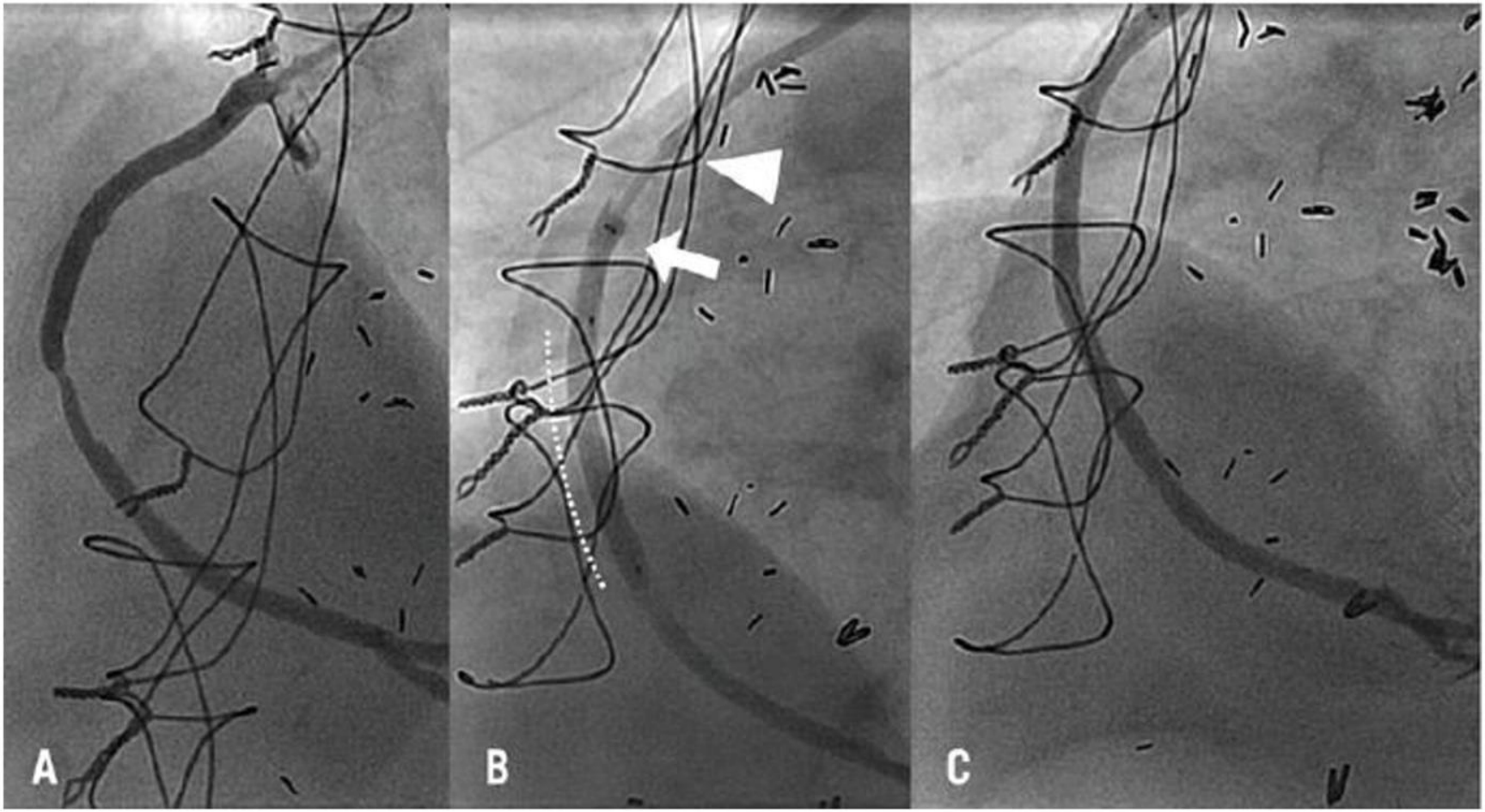
Proximal occlusion device



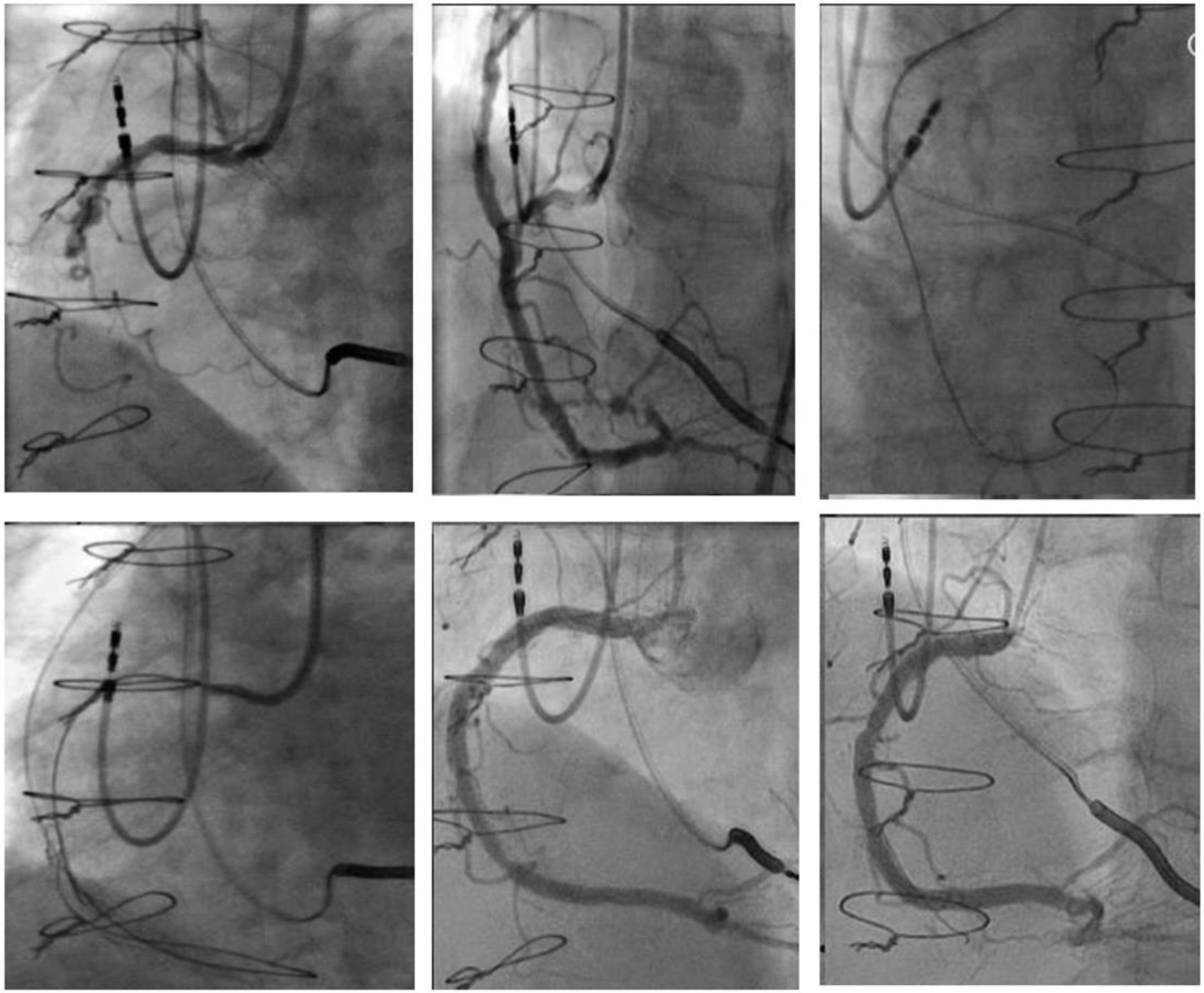


, *Proximal occlusion device, graphic representation.*

Proximal occlusion device (Proxis; St. Jude Medical, St. Paul, MN, USA).


A
B
C

CTO native / embol SVG



Conclusions

- SVG PCI **haut risque** + (DES +). Perméabilité lg terme **-**
- **Bénéfice EPD +** , limite complications ischémiques , **niveau IB** ACC /AHA SCAI ,basée sur 1 seule RCT
- **Sous utilisés** .
- A utiliser **chaque fois que techniquement possible**
- Cibler indications (MI périprocédure +)
- site lésion , charge athérothrombotique ?
- Privilégier **vaisseau natif** (+/- CTO par SVG +/- occluder)
- Nécessité amélioration (profil , nouveau delivery system)
- Revoir niveau de Recommandations , RCT futures ?

- Saphenous vein grafts have modest long term patency
- The use of DES in SVG PCI improves outcomes over BMS- need 5mm DES too!
- Distal protection should be used in ALL feasible cases of SVG PCI (ACC/AHA/SCAI class I indication) Reduces risk of no reflow, distal embolization and peri-procedural MI
- However, a CHIP operator always prefers the native vessel in advanced SVG disease – learn to handle the CTO!