



1·2·3 FÉVRIER 2023

MARSEILLE·PALAIS DU PHARO



L'indication ?

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CHU Rennes

Jeudi 2 Février 2023



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MARSEILLE·PALAIS DU PHARO



Conflit d'interet
Aucun

Indication à revasculariser ?

2018 ESC/EACTS Guidelines on myocardial revascularization

Indications for revascularization in patients with stable angina or silent ischaemia

Extent of CAD (anatomical and/or functional)		Class ^a	Level ^b
For prognosis (4 segments sur 17)	Left main disease with stenosis >50%. ^{c 68–71}	I	A
	Proximal LAD stenosis >50%. ^{c 62,68,70,72}	I	A
	Two- or three-vessel disease with stenosis >50% with impaired LV function (LVEF ≤35%). ^{c 61,62,68,70,73–83}	I	A
	Large area of ischaemia detected by functional testing (>10% LV) or abnormal invasive FFR. ^{d 24,59,84–90}	I	B
	Single remaining patent coronary artery with stenosis >50%. ^c	I	C
For symptoms	Haemodynamically significant coronary stenosis ^c in the presence of limiting angina or angina equivalent, with insufficient response to optimized medical therapy. ^{e 24,63,91–97}	I	A

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^cWith documented ischaemia or a haemodynamically relevant lesion defined by FFR ≤0.80 or iwFR ≤0.89 (see section 3.2.1.1), or >90% stenosis in a major coronary vessel.

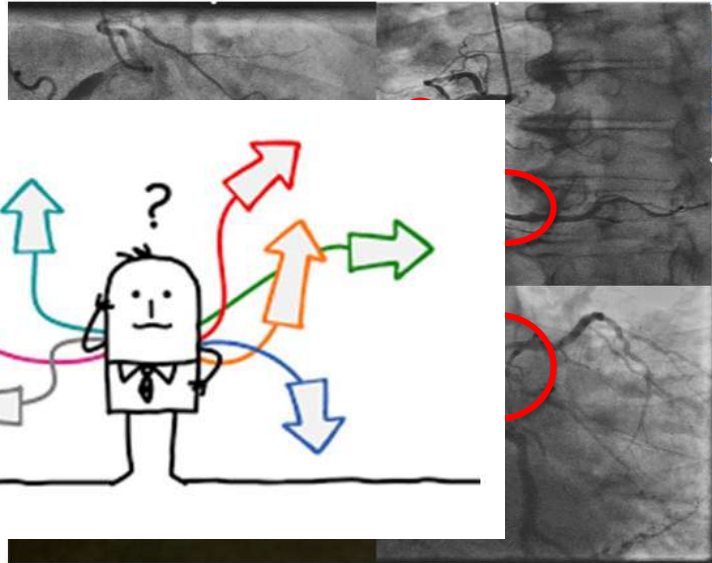
Angioplastie ou pontage ?

Homme, 72 ans,

Obésité (IMC 38)
HTA
Insuffisance rénale



SYNTAX SCORE 24



Percutaneous coronary intervention with drug-eluting stents versus coronary artery bypass grafting in left main coronary artery disease: an individual patient data

meta-analysis

Lancet 2021; 398: 2247-57

Marc S Sabatine*, Brian A Bergmark*, Sabina A Murphy, Patrick T O’Gara, Peter K Smith, Patrick W Serruys, A Pieter Kappetein, Seung-Jung Park, Duk-Woo Park, Evald H Christiansen, Niels R Holm, Per H Nielsen, Gregg W Stone, Joseph F Sabik, Eugene Braunwald

Etudes	Année publication	Période d’inclusion	N patients
SYNTAX	2010	2005-2007	705 / 1800
PRECOMBAT	2011	2004-2009	600
NOBLE	2016	2008-2015	1201
EXCEL	2016	2010-2014	1905
META-ANALYSE	2021	2004-2015	4394

Primary endpoint : all-cause death during 5 years

	Pooled (n=4394)	PCI (n=2197)	CABG (n=2197)
Demographics			
Age, years	66 (59-73)	66 (59-73)	66 (59-72)
Age ≥65 years	2496 (56.8%)	1223 (55.7%)	1273 (57.9%)
Sex			
Female	1023 (23.3%)	514 (23.4%)	509 (23.2%)
Male	3371 (76.7%)	1683 (76.6%)	1688 (76.8%)
ACS at presentation	1466/4393 (33.4%)	725/2197 (33.0%)	741/2196 (33.7%)
Myocardial infarction ≤7 days before randomisation	328/2573 (12.7%)	168/1290 (13.0%)	160/1283 (12.5%)
LVEF <50%	499/4061 (12.3%)	241/1988 (12.1%)	258/2073 (12.4%)
EuroSCORE*	3.0 (1.0-4.0); n=2481	3.0 (1.0-4.0); n=1246	3.0 (2.0-4.0); n=1235
Coronary anatomy			
SYNTAX score†	25.0 (18.0-31.0); n=4358	25.0 (19.0-31.0); n=2187	24.0 (18.0-31.0); n=2171
SYNTAX score group			
≤22	1778/4358 (40.8%)	864/2187 (39.5%)	914/2171 (42.1%)
23-32	1627/4358 (37.3%)	858/2187 (39.2%)	769/2171 (35.4%)
≥33	953/4358 (21.9%)	465/2187 (21.3%)	488/2171 (22.5%)
Diseased vessels			
Left main only	705/4354 (16.2%)	359/2185 (16.4%)	346/2169 (16.0%)
Left main plus 1 vessel	1367/4354 (31.4%)	694/2185 (31.8%)	673/2169 (31.0%)
Left main plus 2 vessels	1375/4354 (31.6%)	684/2185 (31.3%)	691/2169 (31.9%)
Left main plus ≥3 vessels	905/4354 (20.8%)	446/2185 (20.4%)	459/2169 (21.2%)
Left main bifurcation lesion	3187/4309 (74.0%)	1638/2167 (75.6%)	1549/2142 (72.3%)

Lancet 2021; 398: 2247-57

Données procédurales

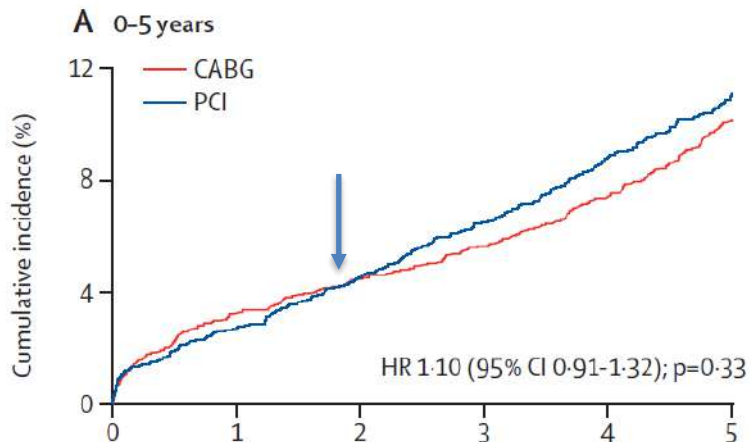
	Pooled (n=4394)	PCI (n=2197)	CABG (n=2197)
(Continued from previous page)			
Procedural characteristics			
Radial artery access	..	266/1211 (22.0%)	..
Intravascular ultrasound use	..	1053/1558 (67.6%)	..
Number of stents	..	2.0 (1.0-3.0)	..
Total stent length, mm	..	42.0 (24.0-69.0)	..
LIMA graft	1975/2065 (95.6%)
Bilateral IMA grafts	261/1148 (22.7%)
Number of conduits	2.0 (2.0-3.0)
All arterial grafts	461/2029 (22.7%)
Off-pump CABG	570/2066 (27.6%)

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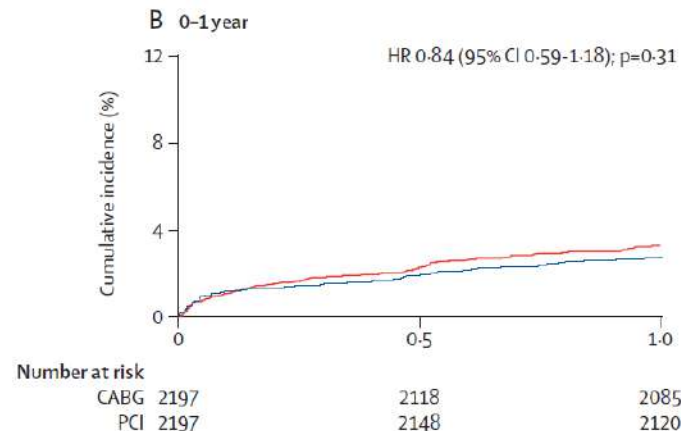
MORTALITE ?



Cumulative incidence curves for all-cause deaths



Number at risk		0	1	2	3	4	5
CABG	2197	2085	2042	2002	1939	1585	
PCI	2197	2120	2068	2015	1942	1539	

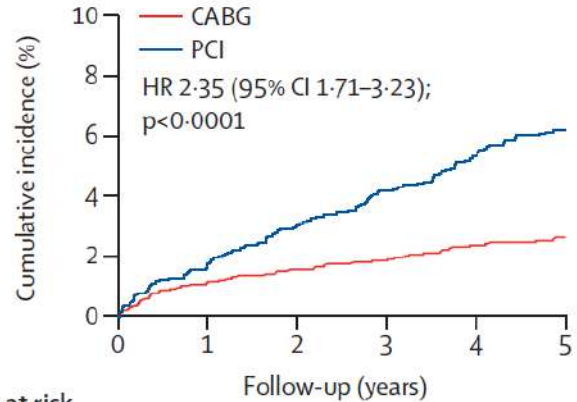


Number at risk		1	2	3	4	5
CABG	2085	2042	2002	1939	1585	
PCI	2119	2068	2015	1942	1539	

Non-statistically significant absolute risk difference of 0.9%

INFARCTUS DU MYOCARDE ?

A Spontaneous myocardial infarction

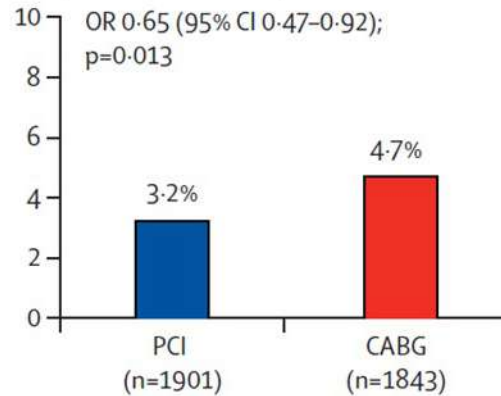


Number at risk

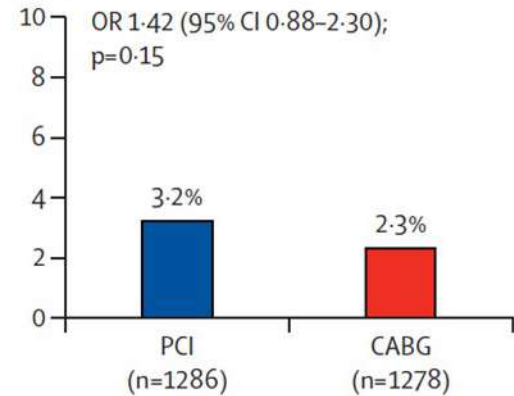
CABG	2197	2054	2000	1954	1884	1450
PCI	2197	2090	2012	1939	1848	1364

Absolute risk difference of 3.5 %

B Procedural myocardial infarction (protocol definition)

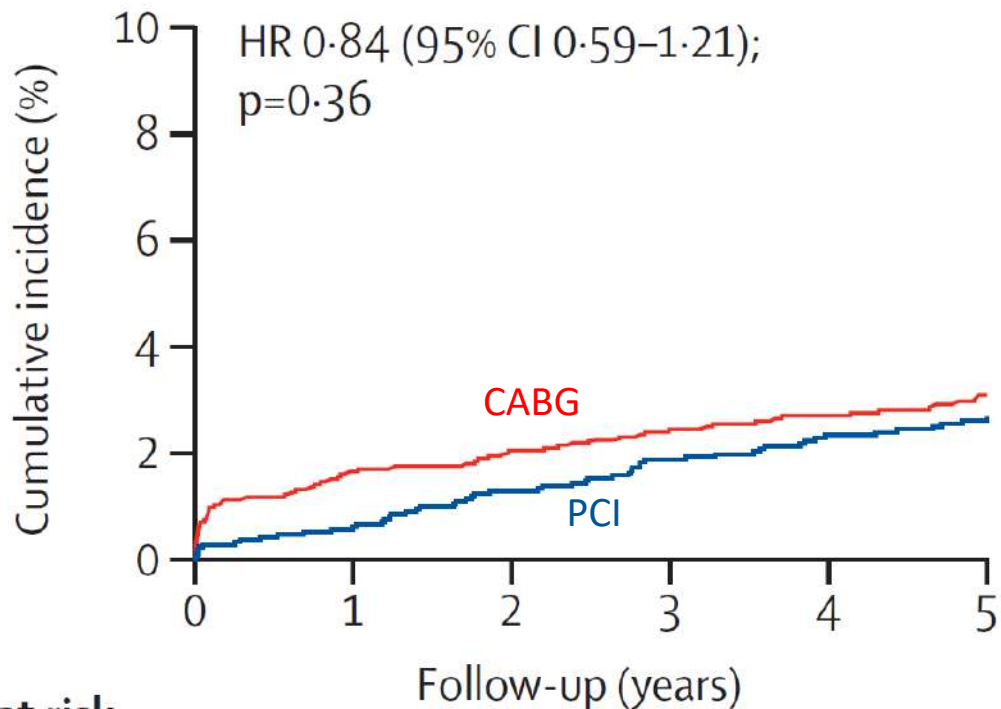


C Procedural myocardial infarction (universal definition)



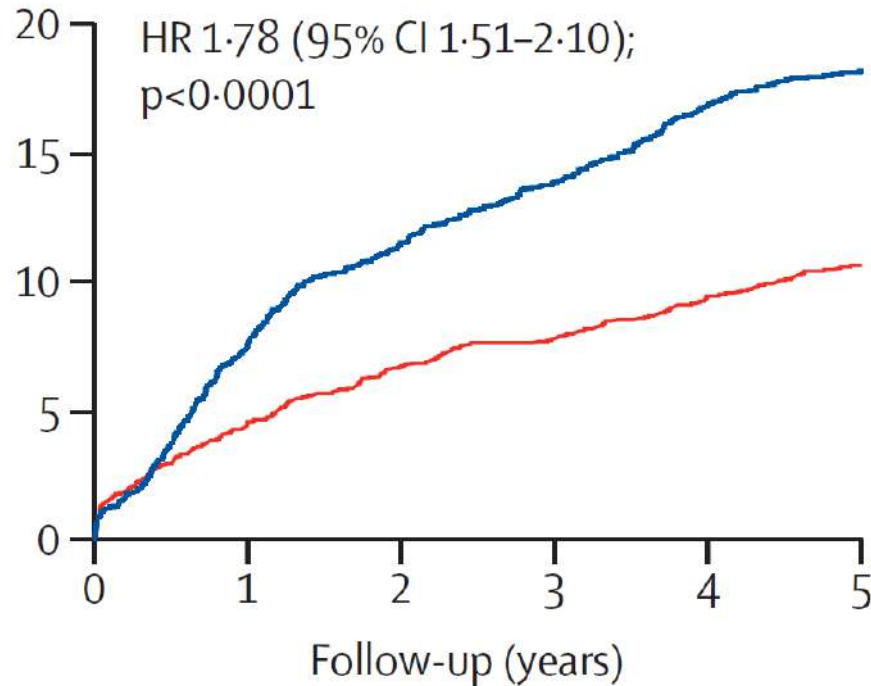
(data available
in the SYNTAX and EXCEL trials)

AVC ?



- Lower risk of stroke in the first year after randomisation for PCI treated patients
- No difference for years 1-5 and at 5 years

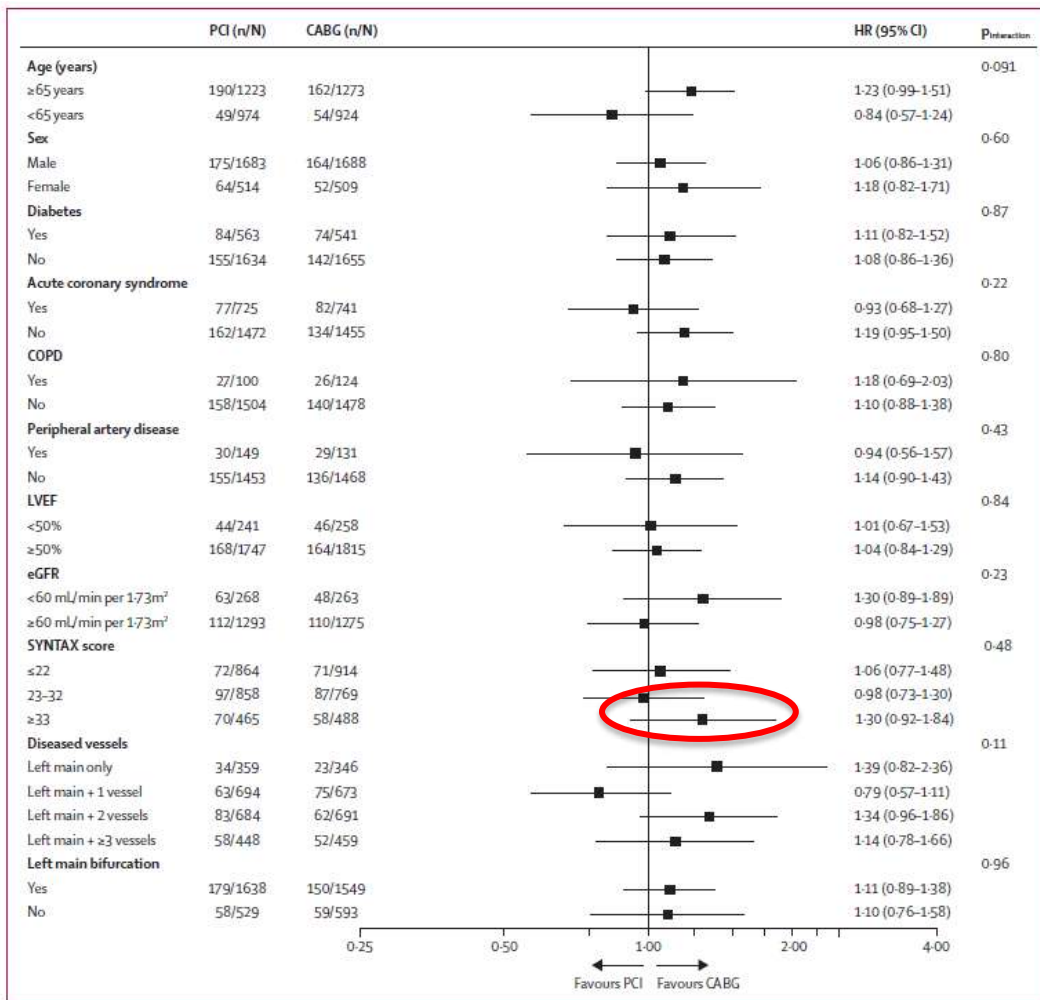
NOUVEAU GESTE DE REVASCULARISATION ?



Repeat revascularisation more common after PCI than after CABG resulting in an absolute risk difference of 7.6 % over 5 years

Lancet 2021; 398: 2247-57

5-year all-cause deaths in key subgroups



Lancet 2021; 398: 2247-57

Left Main PCI versus CABG



Two very different procedures



PCI

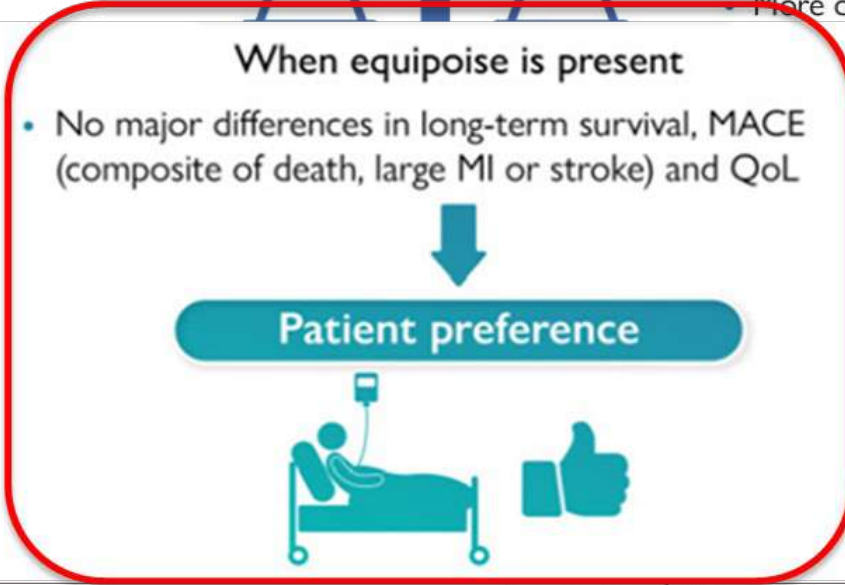
Early advantages

- Less invasive
- Fewer peri-proced complications (stroke, atrial fibrillation, bleeding)
- More rapid recovery, better early QoL

CABG

Late advantages

- More durable
- Lower risk of adverse events beyond particularly MI and revascularization



Recommendation
 secondary anatomy for
 Left main CAD
 Left main disease

artery disease with suitable coro-
 I A IIa A

Mario Gaudino¹, Michael E. Farkouh², and Gregg W. Stone^{3*}

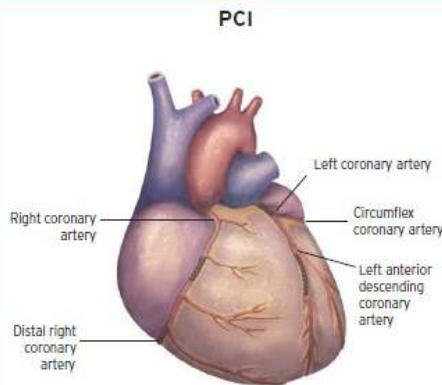
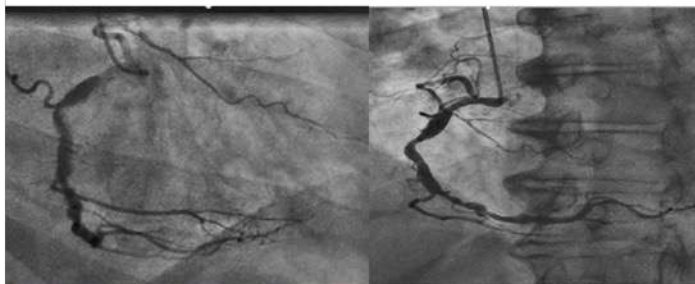
Merci

Homme, 72 ans,
Bon VG
SCC

Obésité (IMC 38)
HTA
Insuffisance rénale
modérée (Cl 53 ml/mn)
Bas risque chirurgical
(STS score 2.1%)

Lymphome de Hodgkin
(2008)

SYNTAX SCORE 24



FAVOURS PCI

Clinical characteristics

Presence of severe co-morbidity (not adequately reflected by scores)

Advanced age/frailty/reduced life expectancy

Restricted mobility and conditions that affect the rehabilitation process

Anatomical and technical aspects

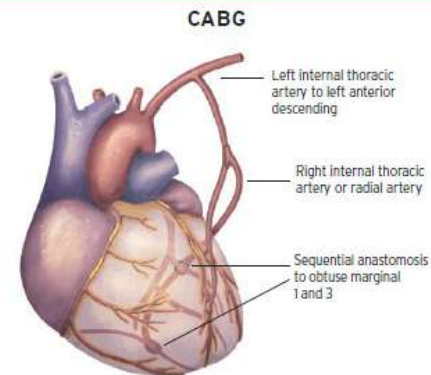
MVD with SYNTAX score 0-22

Anatomy likely resulting in incomplete revascularization with CABG due to poor quality or missing conduits

Severe chest deformation or scoliosis

Sequelae of chest radiation

Porcelain aorta^a



FAVOURS CABG

Clinical characteristics

Diabetes

Reduced LV function (EF \leq 35%)

Contraindication to DAPT

Recurrent diffuse in-stent restenosis

Anatomical and technical aspects

MVD with SYNTAX score \geq 23

Anatomy likely resulting in incomplete revascularization with PCI

Severely calcified coronary artery lesions limiting lesion expansion

Need for concomitant interventions

Ascending aortic pathology with indication for surgery

Concomitant cardiac surgery

Recommendation for the type of revascularization in patients with stable coronary artery disease with suitable coronary anatomy for both procedures and low predicted surgical mortality

Left main CAD

Left main disease with intermediate SYNTAX score (23 - 32).^{69,121,122,124,145-148}

I

A

IIa

A

Limites des études...



- Etudes anciennes
- Définitions des événements différentes d'un essai à l'autre
- Faible proportion de patients avec Syntax score élevé
- Suivi à 10 ans que pour les deux études les plus anciennes
- Sélection des patients : patients jugés accessibles aux deux modes de revascularisation par les centres (heart team decision)
- Variété des stents utilisés : paclitaxel, sirolimus, biolimus....