

Patients with coronary artery disease should be screened for peripheral vascular disease - CON

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Disclosures

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- Consulting fees from Sanofi-Aventis, Eli Lilly, and Bristol-Myers Squibb; and lecture fees from Bristol-Myers Squibb, Sanofi-Aventis, and Eli Lilly.

Background

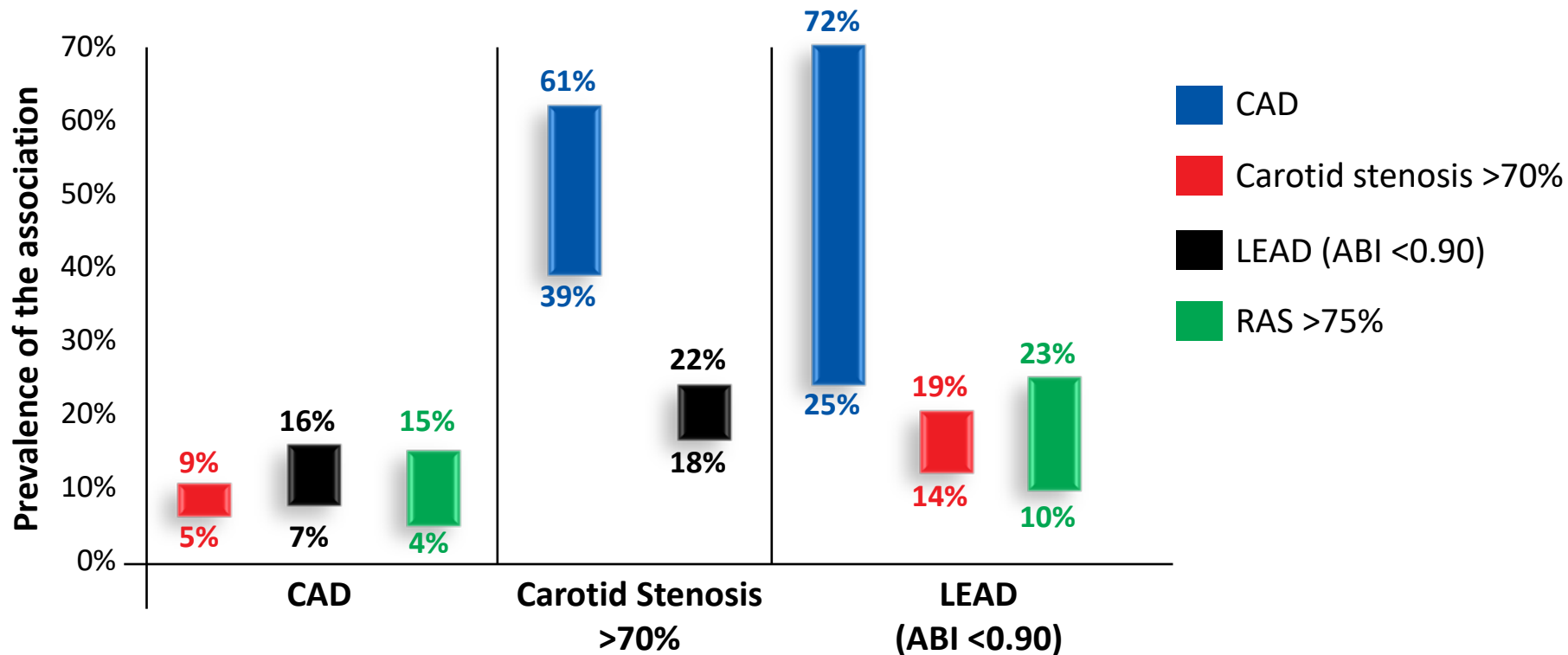
§Steg PG. JAMA 2007;297:1197-206; Alberts MJ. Eur Heart J 2009;30:2318-26; Subherwal S. Circ CVQO 2012;5:541-9; Wilson WM. AJC 2011;108:936-42.

Background

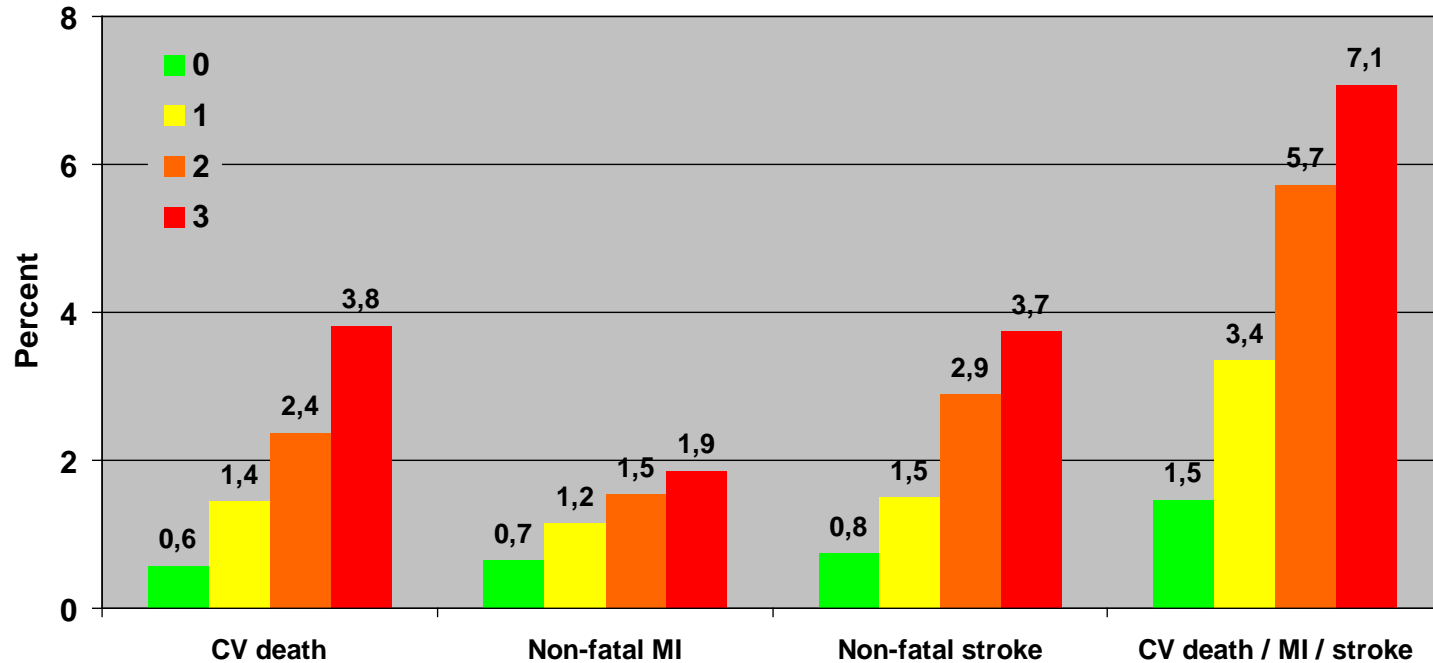
- **Coronary Artery Disease** → the most frequent and severe location of atherosclerosis
- **Symptomatic multisite artery disease (MSAD)** → frequent §
- **Symptomatic multisite artery disease (MSAD)** → integrator of the global CV risk (2-fold increase in MACCE versus Single site) §

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REPORTED RATE RANGES OF OTHER LOCALIZATIONS OF ATHEROSCLEROSIS IN PATIENTS WITH A SPECIFIC ARTERIAL DISEASE



1-year outcome according to symptomatic MSAD



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Background (2)

- The prevalence and associated-risk of **asymptomatic MSAD** in high risk coronary patients are unknown.
- Whether **systematic identification of MSAD and treatment** when appropriate combined with an aggressive secondary prevention is relevant has not been evaluated.

Carotid disease in patients scheduled for CABG

§Steg PG. JAMA 2007;297:1197-206; Alberts MJ. Eur Heart J 2009;30:2318-26; Subherwal S. Circ CVQO 2012;5:541-9; Wilson WM. AJC 2011;108:936-42.

Carotid disease in patients scheduled for CABG

Carotid disease	Prevalence	Risk of post-CABG stroke
unilateral stenosis 50-99%	11.1%	3.2%
bilateral stenosis 50-99%	5.6%	5.2%
unilateral occlusion	1.3%	9.0%

- 86-95% of post-CABG strokes are not related to carotid disease

Revascularization strategies

- CEA synchronous with off-pump CABG has lowest 30-day death/stroke rates (2.2%)
- Synchronous CEA (before) + CABG is the worst strategy: 30-day death/stroke = 8.2%
- Staged (or same-day) CAS + CABG is an alternative: 30-day death/stroke = 5.9%

ESC PAD Guidelines 2017: screening for CAD in CABG

Recommendations	Class	Level
In patients undergoing CABG, DUS is recommended in patients with a recent (<6 months) history of TIA/stroke. [§]	I	B
In patients with no recent (< 6 months) history of TIA/stroke, DUS may be considered in the following cases: age ≥70 years, multivessel coronary artery disease, concomitant LEAD, or carotid bruit.	IIb	B
Screening for carotid stenosis is not indicated in patients requiring urgent CABG with no recent stroke/TIA. [§]	III	C

[§]Kim JC. JVS 2016;63:710-4; Aboyans V. Presse Med 2009;38:977-86.

Management of carotid stenosis in patients undergoing CABG

Recommendations	Class	Level
In neurologically asymptomatic patients scheduled for CABG:		
<ul style="list-style-type: none"> • <u>Routine</u> prophylactic carotid revascularization in patients with a 70-99% carotid stenosis is <u>not</u> recommended.[§] 	III	B
<ul style="list-style-type: none"> • Carotid revascularization may be considered in patients with bilateral 70-99% carotid stenoses or 70-99% carotid stenosis + contralateral occlusion.[§] 	IIb	B
<ul style="list-style-type: none"> • Carotid revascularization may be considered in patients with a 70–99% carotid stenosis, in the presence of one or more characteristics that may be associated with an increased risk of ipsilateral stroke,* in order to reduce stroke risk beyond the perioperative period. 	IIb	C

[§]Naylor AR. EJVEVS 2008;35:383-91.

*Contralateral TIA/stroke; Ipsilateral silent infarction; Stenosis progression >20%; Spontaneous embolization on TCD; Impaired cerebral vascular reserve; Large or echolucent plaques; Increased juxta-luminal hypoechogenic area; Intraplaque haemorrhage or Lipid-rich necrotic core at MRI

LEAD in patients with SCAD

§Steg PG. JAMA 2007;297:1197-206; Alberts MJ. Eur Heart J 2009;30:2318-26; Subherwal S. Circ CVQO 2012;5:541-9; Wilson WM. AJC 2011;108:936-42.

ESC PAD Guidelines 2011

- Patients with Lower Extremity Artery Disease associated with CAD are at twice the level of risk as those presenting with CAD alone.
- Whether the management of CAD patients should differ in the case of concurrent LEAD is not obvious. There are no specific trials.

In patients with CAD, screening for LEAD by ABI measurement should be considered.	Ila	C	-
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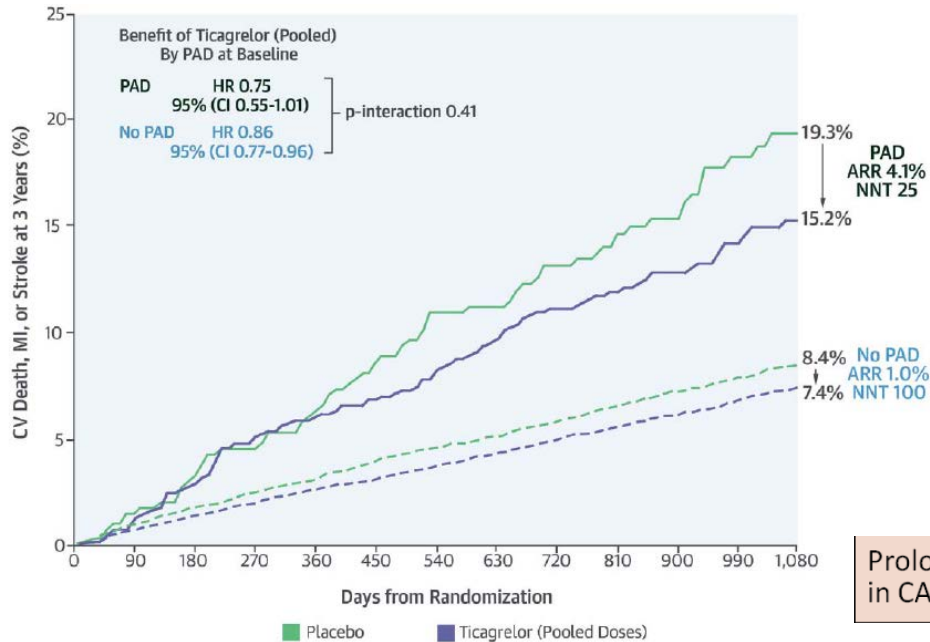
Eur Heart J. 2011 Nov;32(22):2851-906

Screening of concomitant LEAD and CAD PAD Guidelines 2017

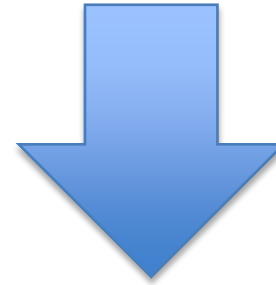
Recommendations	Class	Level
In patients with CAD, screening for LEAD by ABI measurement may be considered for risk stratification. [§]	IIb	B

[§]Mukherjee D. AJC 2007;100:1–6; Subherwal S. Circ CVQO 2012;5:541-9; Collet JP, submitted; Saw J. JACC 2006;48:1567-72; Aboyans V. JACC 2005;46:815-20; Rihal CS. Circulation 1999;100:171.7; Valgimigli M. Lancet 2015;385:2465-76; Jonew WS. AMJ 2011;108:380-4; Inglis SC. IJC 2013;168:1094-101; Nakamura Y. Circ J 2015;79:785-93; van Straten AH. ATS 2010;89:414-20

LEAD to guide DAPT duration



Bonaca MP JACC 2016; 67: 2719-28



Prolonged (i.e. >12 months) DAPT duration may be considered in CAD patients with LEAD.

IIb **B**

DAPT Update 2017

Screening of associated atherosclerotic disease in additional vascular territories

Leading disease \ Screened disease	CAD	LEAD	Carotid	Renal
CAD				
Scheduled for CABG		IIa ^a	I ^b / IIb ^c	U
Not scheduled for CABG		IIb	NR	U

^a Especially if venous harvesting is planned. ^b In patients with stroke/TIA. ^c In asymptomatic patients with: age ≥70 yrs, multivessel CAD, associated LEAD or carotid bruit. ^d Screening with ECG in all patients; with imaging stress testing in case of poor functional capacity and >2 of the following: history of CAD, heart failure, stroke/TIA, CKD, diabetes requiring insulin therapy. NR = no recommendation; U = uncertain.

Prognosis Implications

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AMERICA Study: Rationale

- To demonstrate the **superiority** of a **pro-active strategy** of detection and management of the extension of atherothrombosis to other territories than coronary combined with an aggressive pharmacological secondary prevention strategy in a population with very high risk features of coronary disease (**pro-active strategy**)
- As compared with a **conservative strategy** based on a clinically-guided identification of MSAD and standard pharmacological treatment (**conventional strategy**).

Study Design

Three vessels disease ≥ 18 years old (≤ 6 months)
and/or
Acute coronary syndrome ≥ 75 years old (< 1 month)

Pro-Active Strategy

- Active detection/management of asymptomatic atherothrombosis
 - Total body vascular doppler ultrasound investigation combined with CTA or MRI if needed
 - Ankle brachial index measure
 - Creatinine clearance, fasting glycemia, LDL-cholesterol every 6 months
- Intensive medical therapy
 - Dual antiplatelet therapy during whole follow-up
 - High dose statin
 - Systematic beta-blockade and ACE inhibition irrespective of LEVf
 - Anti-aldosterone blockade after MI if LEVf $\leq 40\%$
 - Smoking cessation and rehabilitation programs

Conventional Strategy

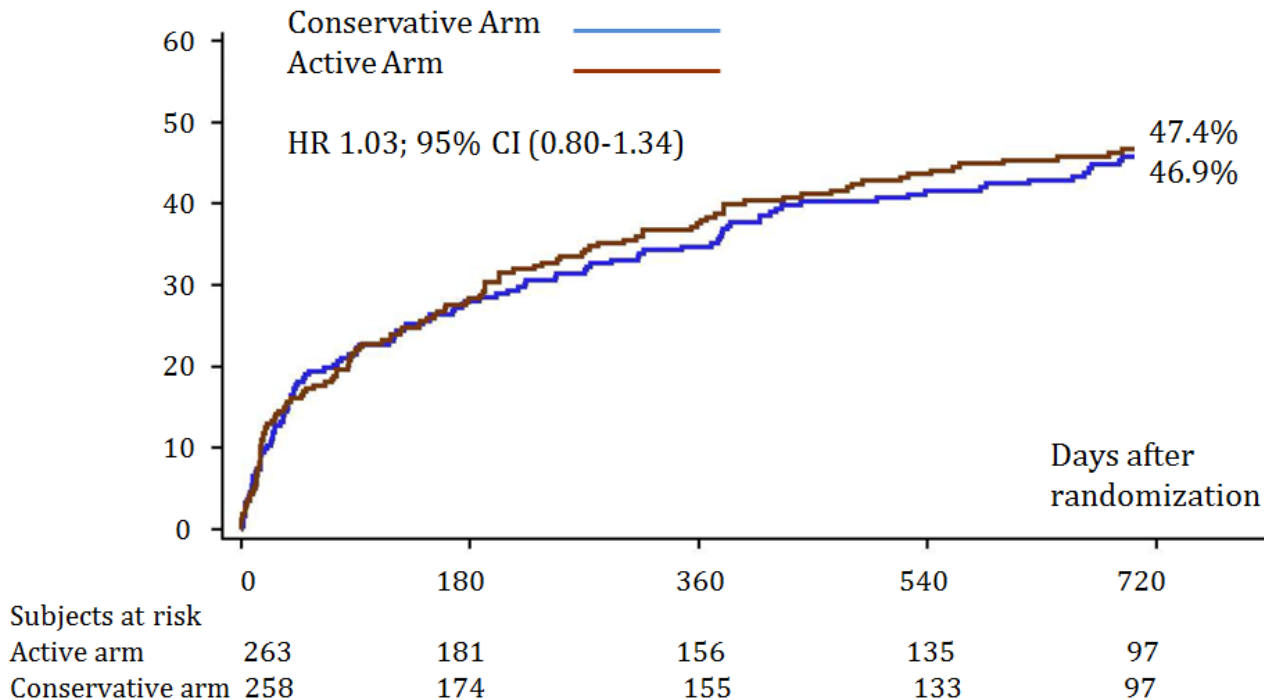
- No detection of asymptomatic atherothrombosis
- Standard medical therapy

Occurrence of Primary endpoint during the two year follow up

- Death (any cause)
- Any ischemic event leading to hospitalization
- Evidence of organ failure

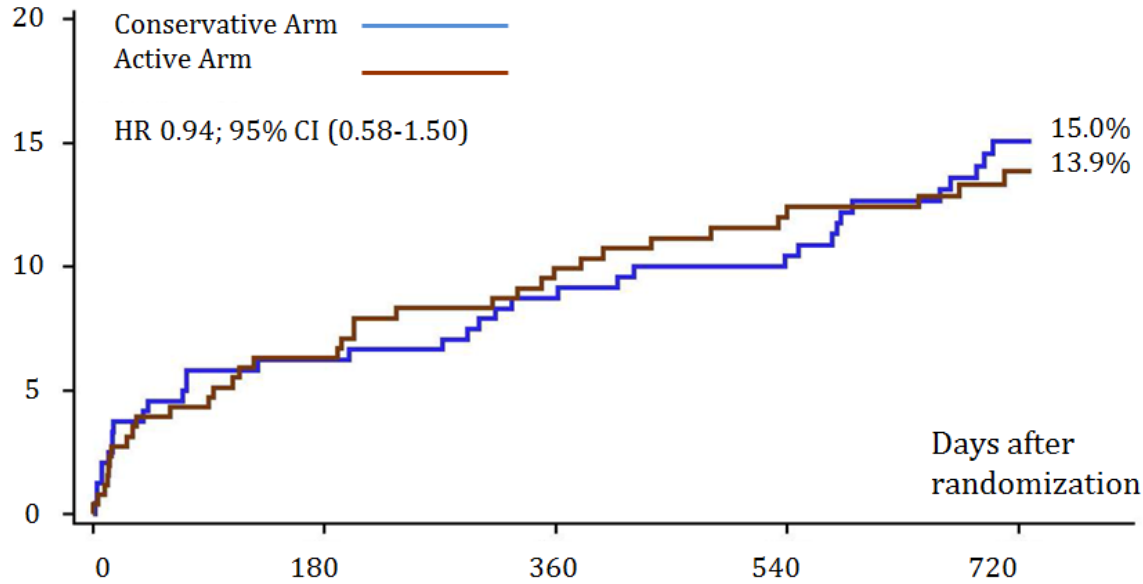
Primary Endpoint at 2 years-FU*

* death, any ischemic event leading to rehospitalization or any evidence of organ failure



Main secondary endpoint at 2 years-FU*

* All-cause death, MI, stroke or any revascularization



Subjects at risk:

Active arm	263	236	223	208	147
Conservative arm	258	226	217	205	147

Localisation of MSAD (n=56)

	Pro-active group (n=263)
Aortic arch	1 (2%)
Carotid (extra and intracranial)	9 (4.5%)
Aortic Abdominal Aneurism \geq 50mm	1 (0.5%)
Aortic Abdominal Aneurism <50mm	11 (5.9%)
Renal artery disease	6 (3.5%)
Visceral arteries	4 (2.5%)
Femoro-iliac stenosis	27 (13.8%)

Key Messages

- MSAD is identified in one out of five patients
- MSAD is associated with worse clinical outcomes;
- Systematic screening for asymptomatic MSAD is not indicated
- Clinical assessment of symptoms of MSAD is necessary;
- Patients scheduled for CABG or CEA represent specific subsets where identification of asymptomatic lesions may affect outcome

Slides available at www.action-coeur.org

