

PCI vs. CABG for LM Disease: New Insights From SYNTAX and PRECOMBAT

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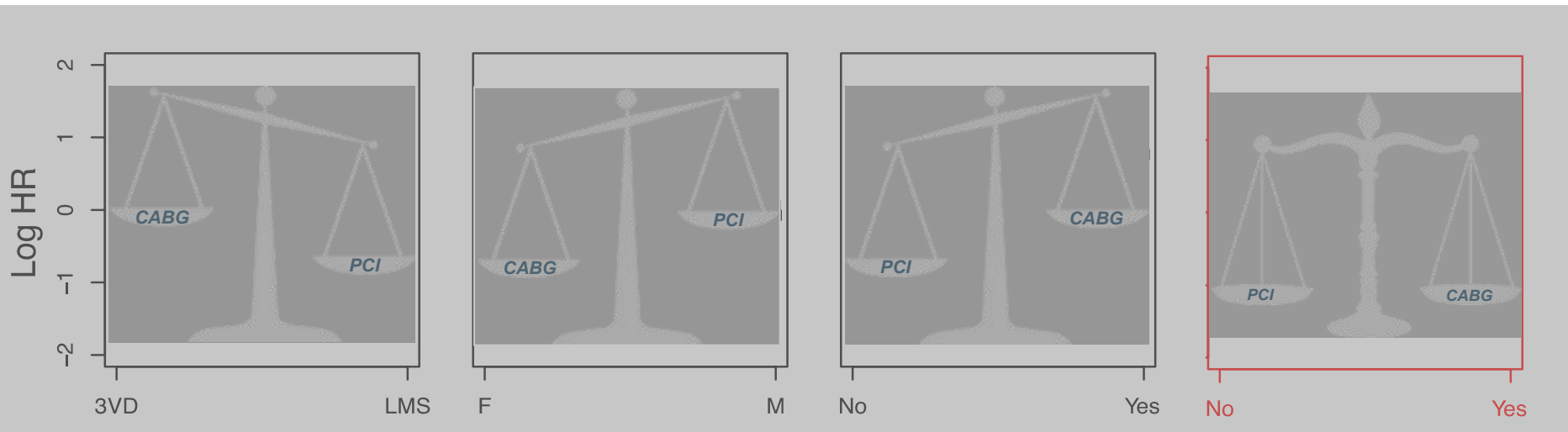
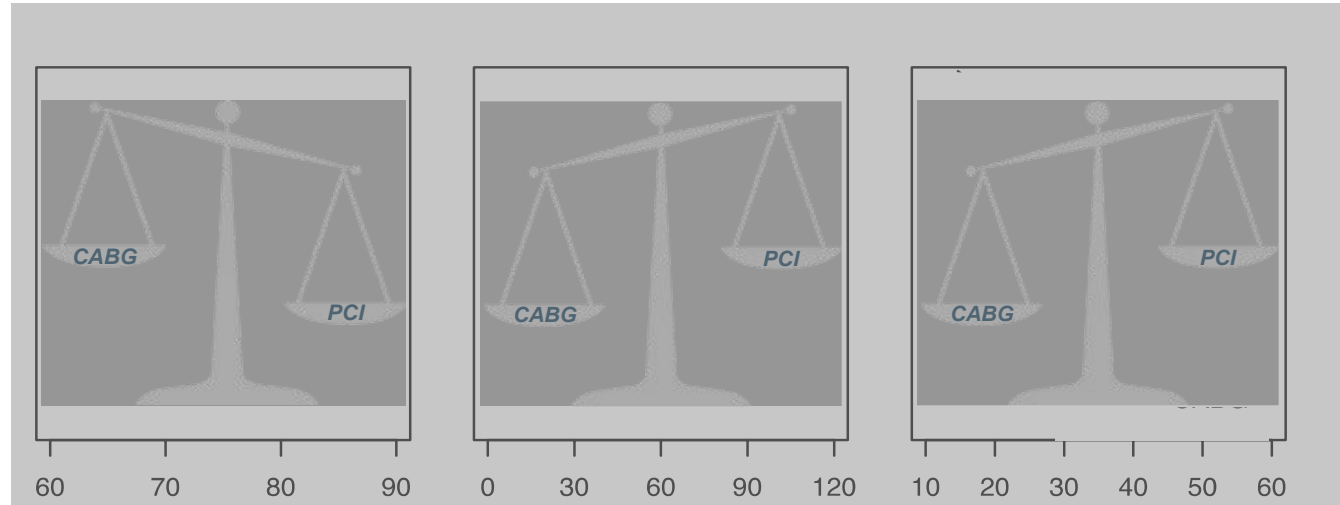
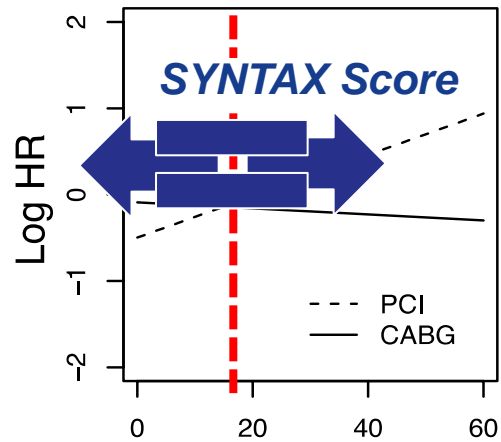


European Guidelines for Myocardial Revascularization

Recommendations according to extent of CAD	CABG		PCI	
	Class ^a	Level ^b	Class ^a	Level ^b
Left main disease with a SYNTAX score ≤ 22 .	I	B	I	B
Left main disease with a SYNTAX score 23–32.	I	B	IIa	B
Left main disease with a SYNTAX score >32 .	I	B	III	B

Classes of recommendations	Definition	Suggested wording to use	Level of evidence A	Data derived from multiple randomized clinical trials or meta-analyses.
Class I	Evidence and/or general agreement that a given treatment or procedure is beneficial, useful, effective.	Is recommended/is indicated	Level of evidence B	Data derived from a single randomized clinical trial or large non-randomized studies.
Class II	Conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of the given treatment or procedure.		Level of evidence C	Consensus of opinion of the experts and/or small studies, retrospective studies, registries.
Class IIa	Weight of evidence/opinion is in favour of usefulness/efficacy.	Should be considered		
Class IIb	Usefulness/efficacy is less well established by evidence/opinion.	May be considered		
Class III	Evidence or general agreement that the given treatment or procedure is not useful/effective, and in some cases may be harmful.	Is not recommended		

SYNTAX Score II



Findings that were validated in the multinational DELTA Registry...

SYNTAX Score II Variables

SYNTAX Score II was developed by applying a Cox proportional hazards model to the results of SYNTAX trial obtaining a **combination of clinical and anatomical independent predictors of 4 years all-cause mortality**:

**ANATOMICAL
SYNTAX SCORE**

LM

AGE

Cr Clearance

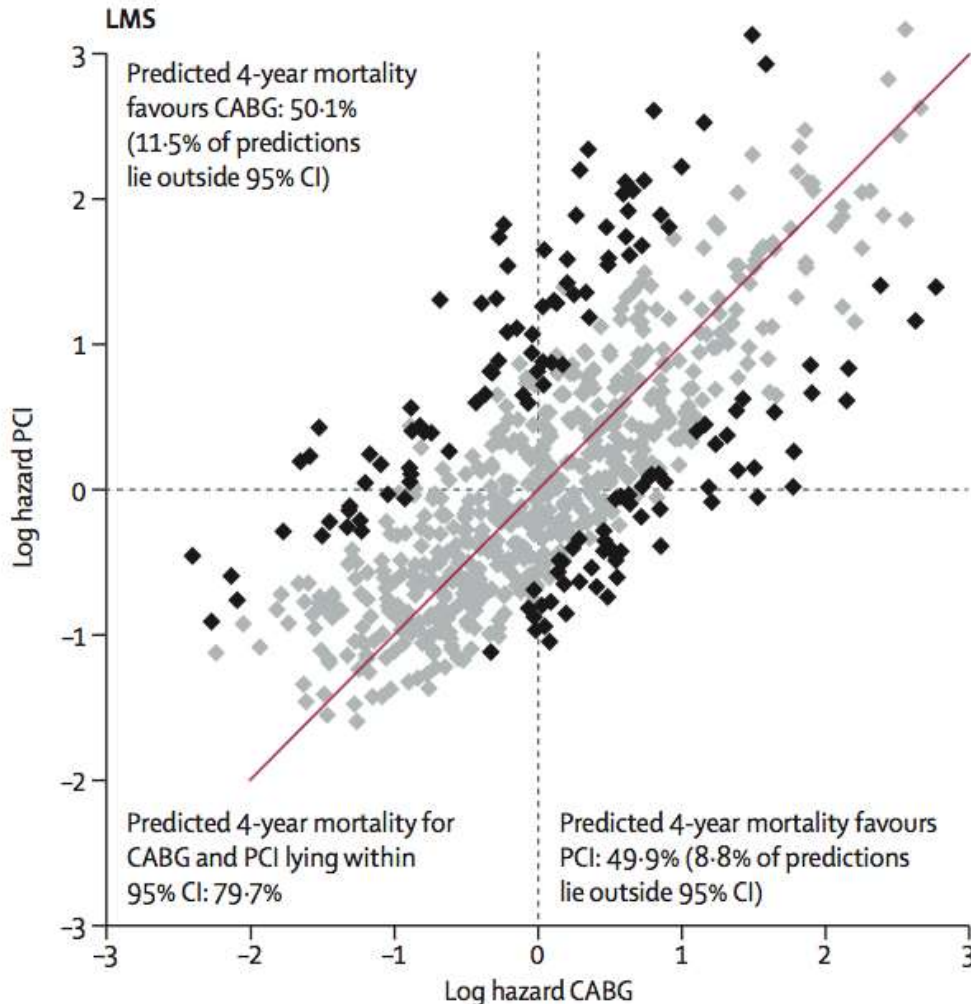
LVEF

Gender

PVD

COPD

SYNTAX trial LM cohort



Favored CABG

Overall 50.1%
>95%CI 11.5%

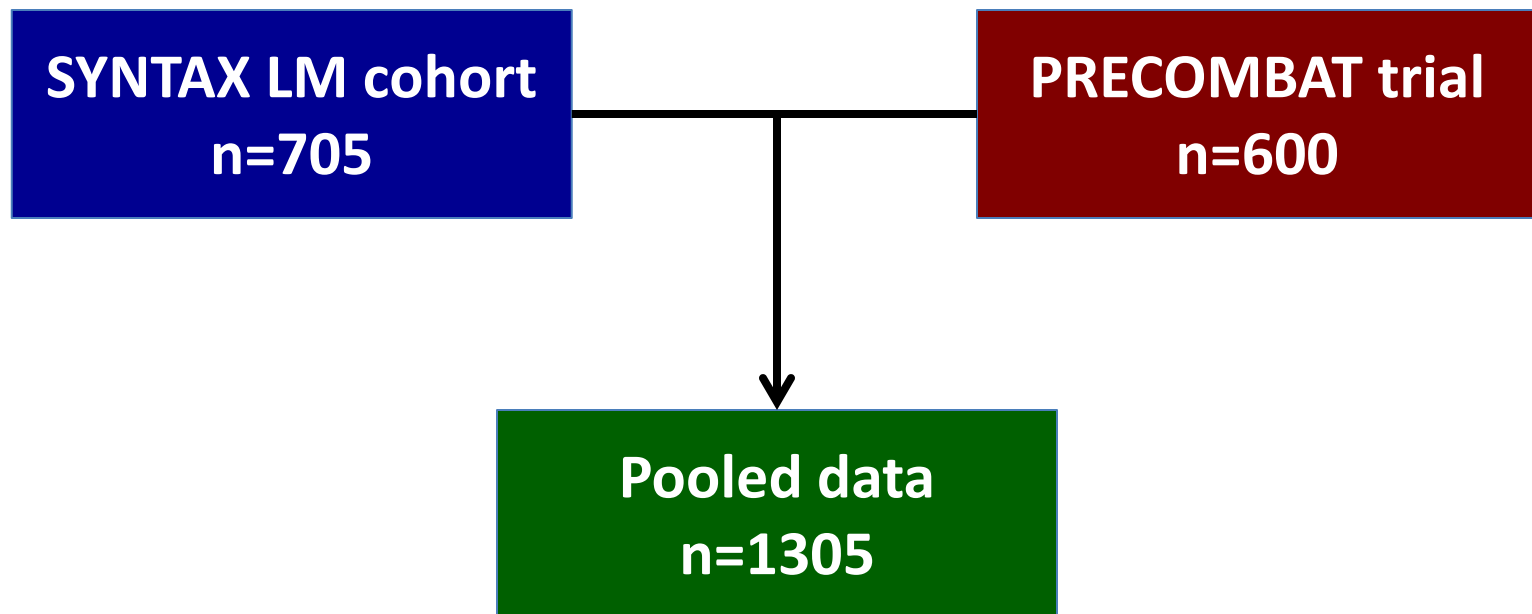
Favored PCI

Overall 49.9%
>95%CI 8.8%

79.7% within
95%CI
Equipoise

Long-Term Outcomes of Percutaneous Coronary Intervention and Coronary Artery Bypass Grafting in Patients with Left Main Coronary Artery Disease: A Pooled Analysis of Individual Patient Level Data From the SYNTAX and PRECOMBAT Randomized Trials

Rafael Cavalcante, Yohei Sotomi, Cheol W. Lee, Jung-Min Ahn, Vasim Farooq, Hiroki Tateishi, Erhan Tenekecioglu, Yaping Zeng, Pannipa Suwannasom, Carlos Collet, Felipe Albuquerque, Yoshinobu Onuma, Seung-Jung Park, Patrick W. Serruys



Baseline Characteristics

	PCI n=657	CABG n=648	p value
SYNTAX score	27.3±12.1	28.0±12.2	0.32
Age (years)	63.8±10.0	64.3±9.9	0.35
Creatinine Clearance (ml/min)	81.8±31.6	81.0±27.7	0.66
LVEF (%)	59.3±13.9	59.5±11.1	0.80
Male Gender	73.8%	76.2%	0.31
Peripheral Vascular Disease	7.9%	7.3%	0.65
COPD	5.3%	6.3%	0.44
Diabetes Mellitus	28.5%	27.6%	0.74
Body mass Index (Kg/m ²)	26.5±4.4	26.3±4.5	0.26
Dyslipidemia	63.3%	58.9%	0.10
Previous MI	17.4%	16.7%	0.72
Previous PCI	6.1%	6.3%	0.86
Previous stroke	3.9%	4.1%	0.93
Euroscore	3.3±2.5	3.4±2.5	0.47
Current Smoking	23.3%	25.7%	0.31

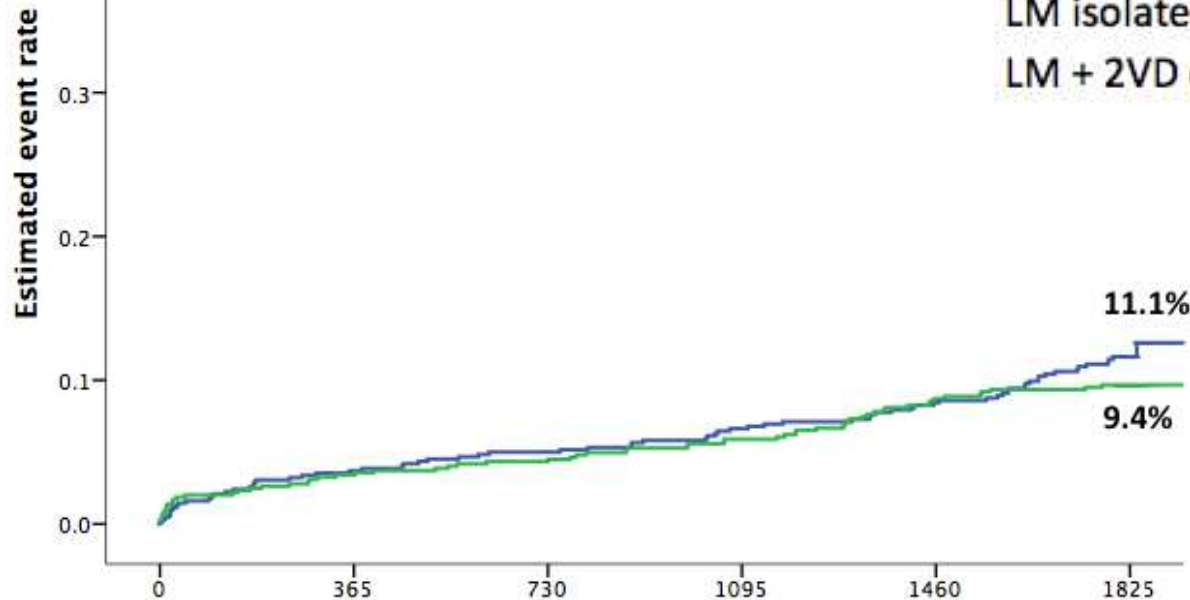
5 years All-cause Mortality in Left Main CAD

Pooled SYNTAX and PRECOMBAT Left Main population (n=1305)

All-cause death

HR 0.83 (0.59 to 1.16), p=0.27

— PCI
— CABG



Number at risk

Days since randomization

CABG	648	610	594	577	560	171
PCI	657	633	622	609	583	185

SYNTAX terciles

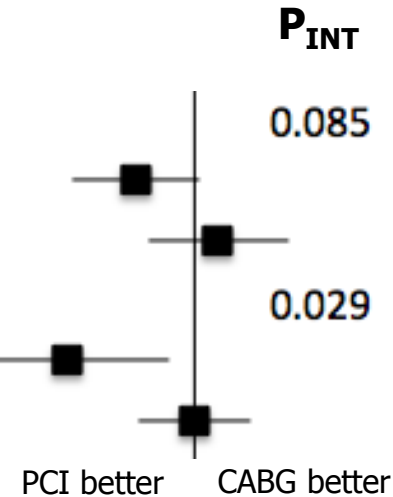
0-32

≥33

Disease Extent

LM isolated/LM +1VD

LM + 2VD or 3VD



*submitted for publication

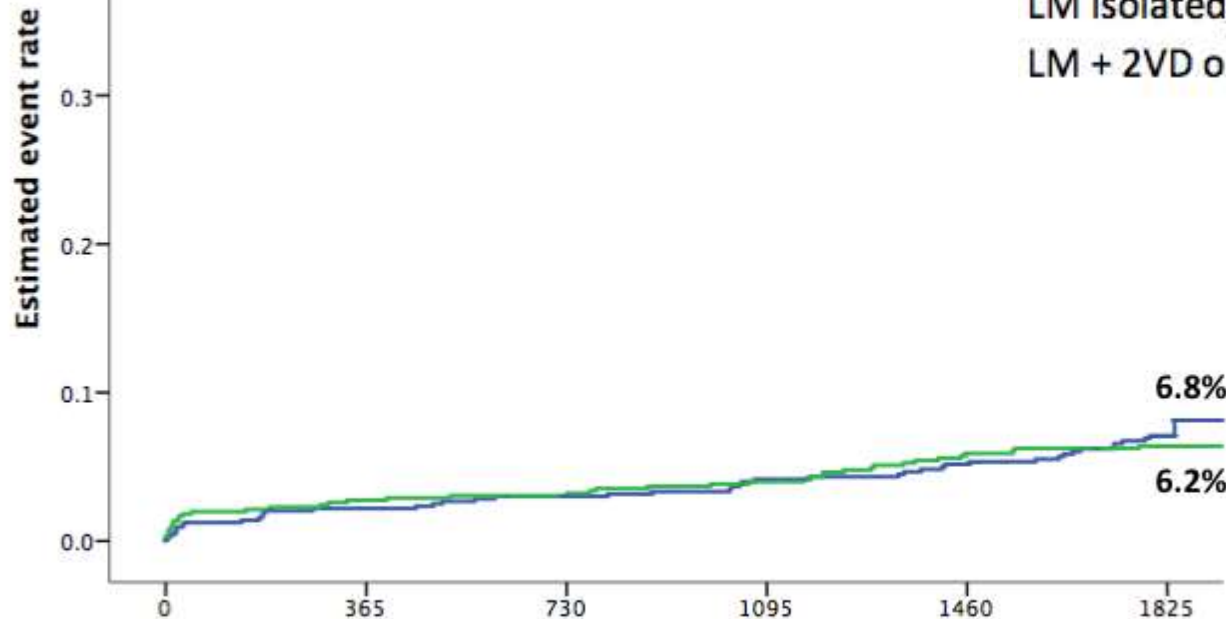
5 years Cardiac Mortality in Left Main CAD

Pooled SYNTAX and PRECOMBAT Left Main population (n=1305)

Cardiac death

HR 0.90 (0.59 to 1.37), p=0.61

— PCI
— CABG



SYNTAX terciles

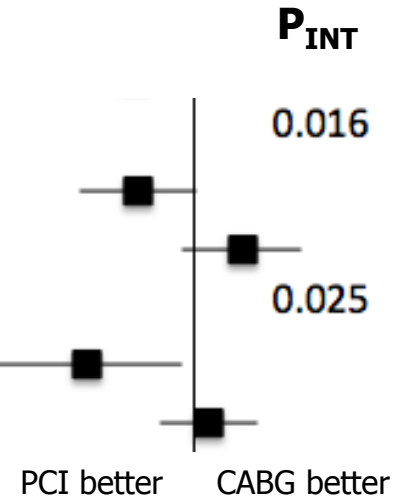
0-32

≥33

Disease Extent

LM isolated/LM +1VD

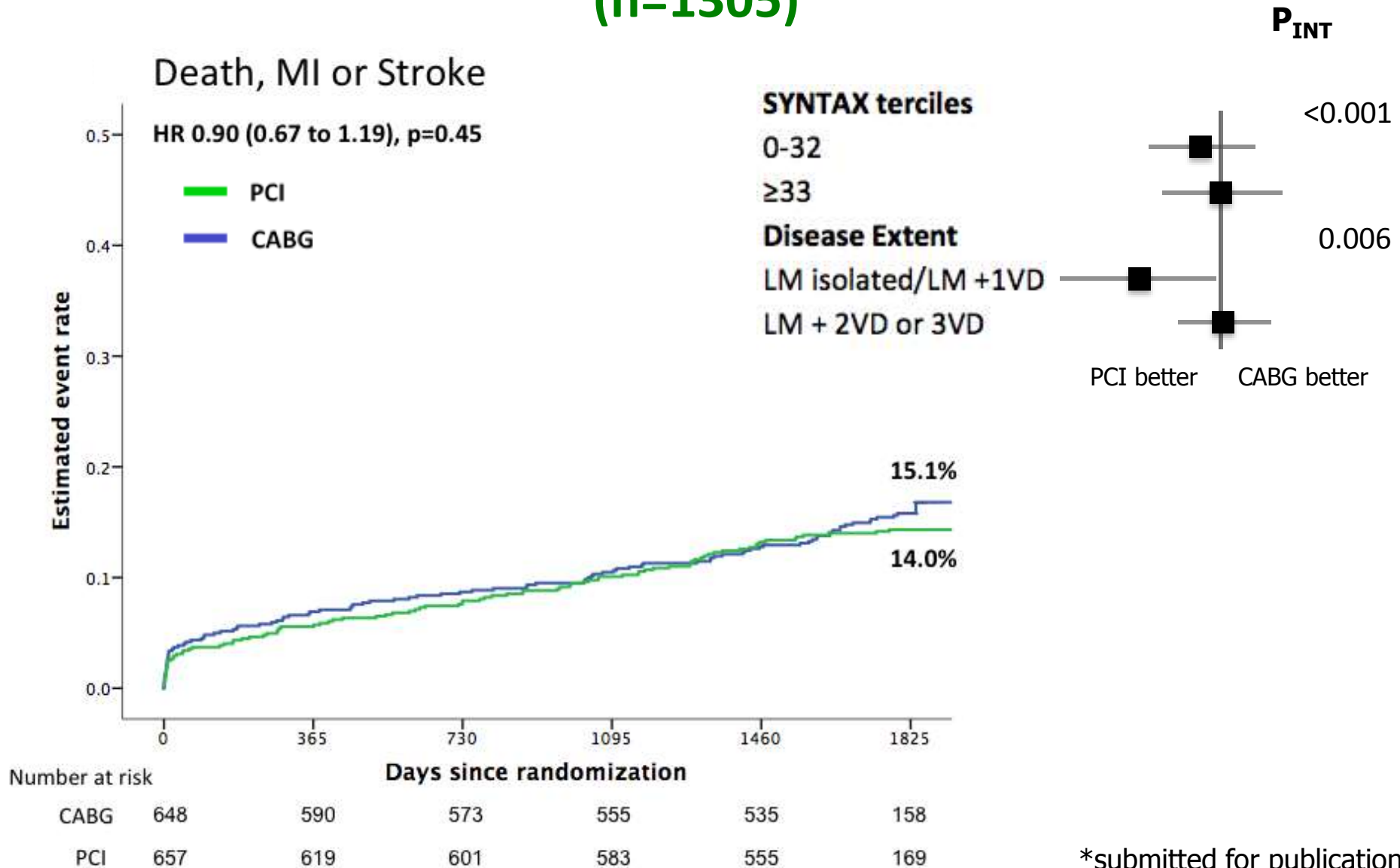
LM + 2VD or 3VD



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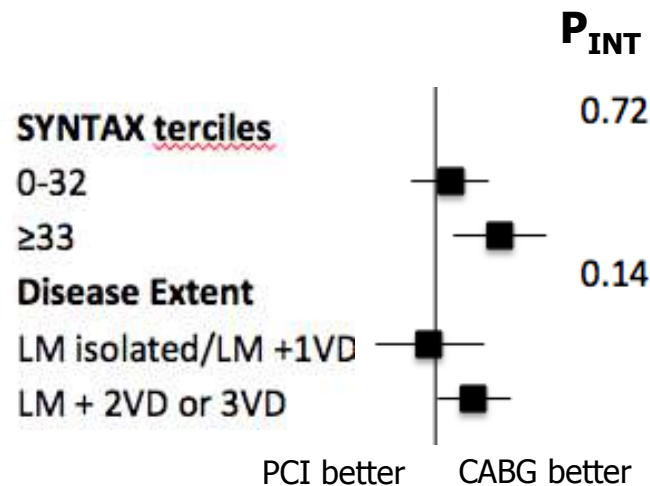
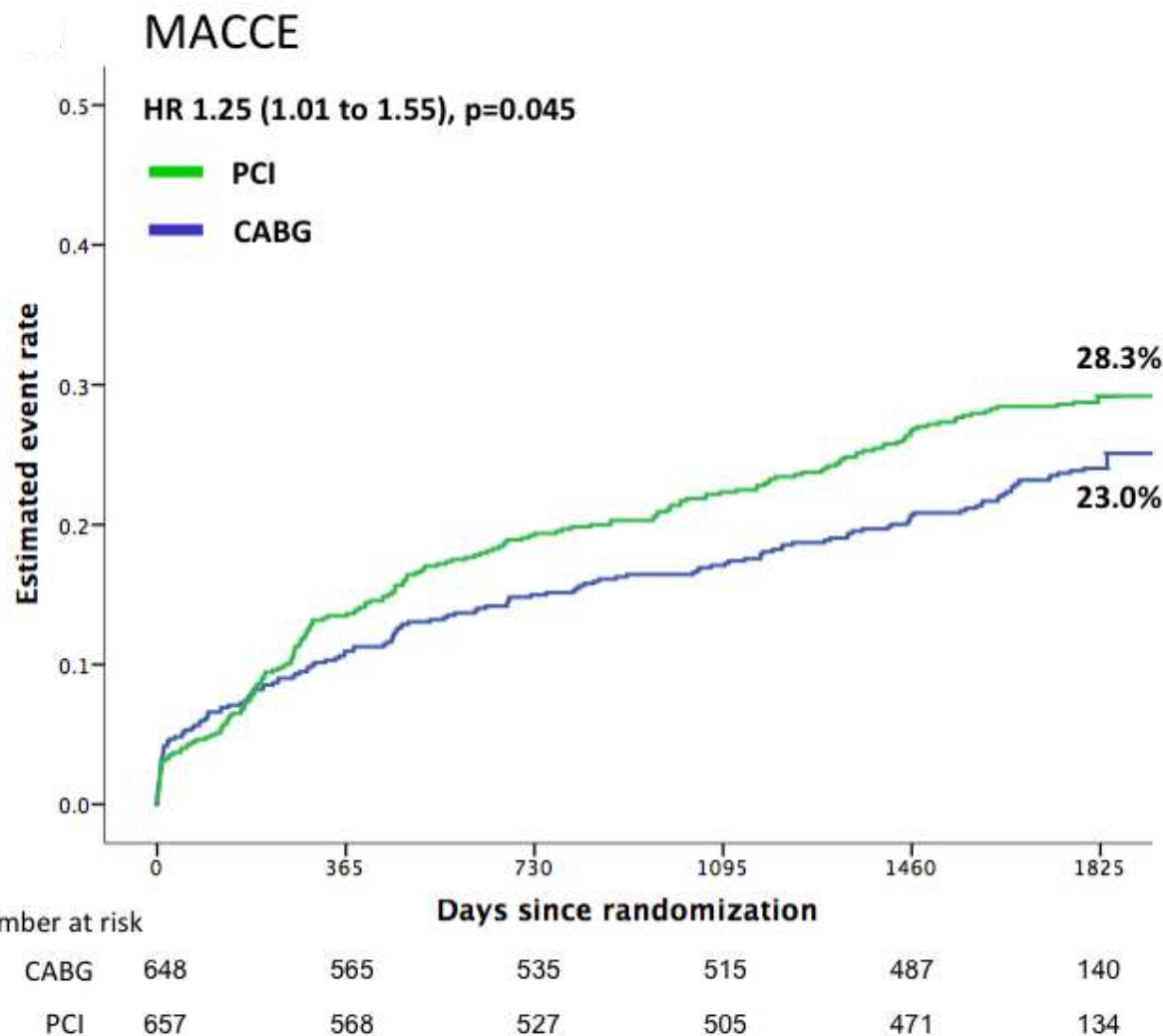
5 years Death/MI/Stroke in Left Main CAD

Pooled SYNTAX and PRECOMBAT Left Main population (n=1305)



5 years MACCE in Left Main CAD

Pooled SYNTAX and PRECOMBAT Left Main population (n=1305)

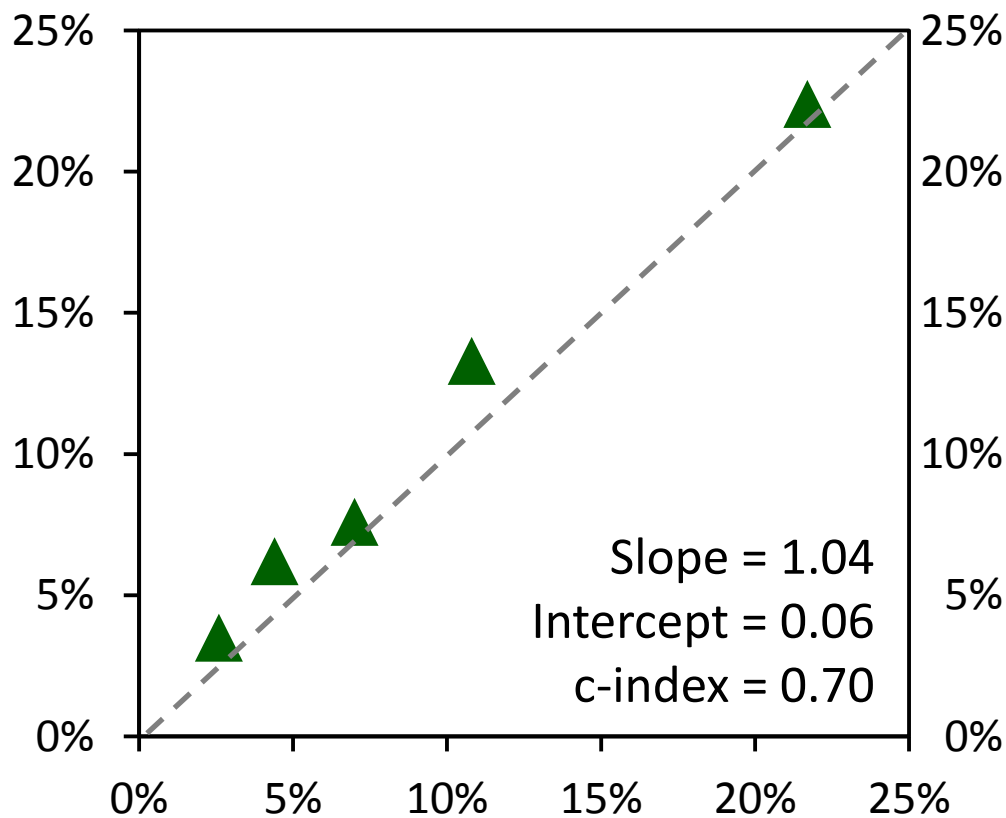


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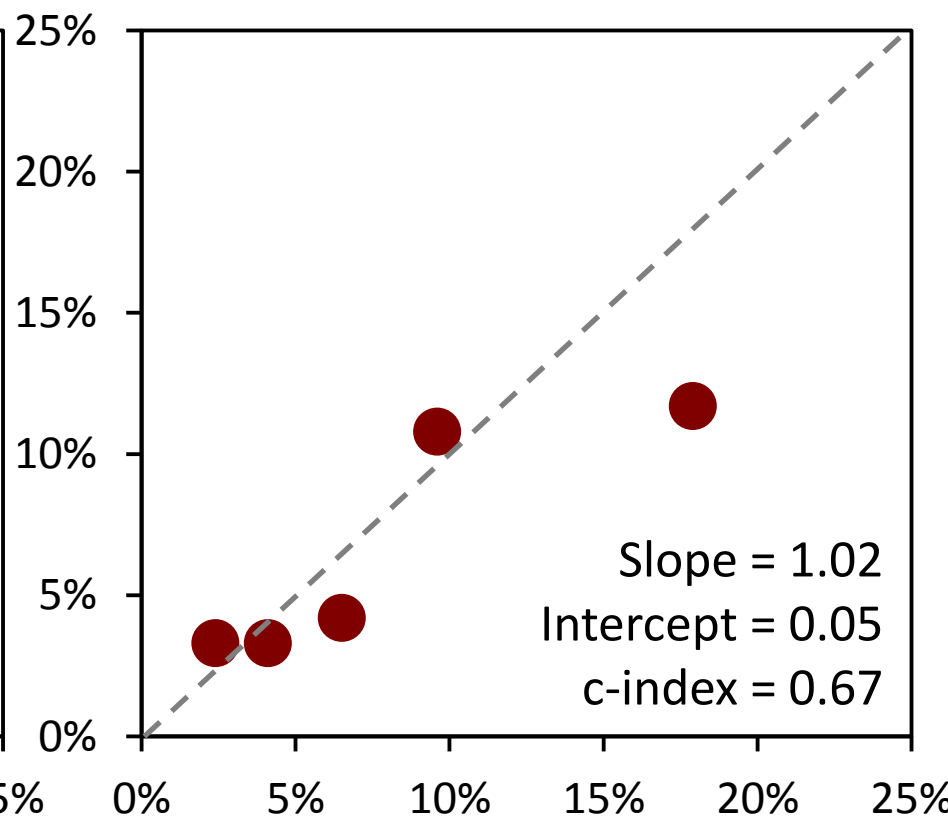
SYNTAX score II model Calibration plots

SYNTAX and PRECOMBAT Left Main population

Pooled data (n=1305)



PRECOMBAT (n=600)



SYNTAX score II Predicted mortality

Differences in SYNTAX and PRECOMBAT

- PRECOMBAT had less patients with COPD and PVD
 - COPD – 8.6% in SYNTAX vs. 2.7% in PRECOMBAT
 - PVD – 9.8% in SYNTAX vs. 3.7% in PRECOMBAT
- All-cause mortality in PRECOMBAT was half of that in SYNTAX
 - 12.2% in SYNTAX vs. 6.7% in PRECOMBAT
- PRECOMBAT included only Left-main disease and SYNTAX included 61% of 3-vessel disease
- Racial differences
- Procedural differences
 - Stent differences (CYPHER vs. TAXUS)
 - CABG differences (PRECOMBAT had more off-pump CABG)

Tools and Techniques - Clinical: SYNTAX score II calculator



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To be made public at EuroPCR 2016!

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SYNTAX score II questions

SYNTAX score I ⓘ

22

Age (years) ⓘ

60

CrCl ⓘ

120

ml/min

LVEF (%) ⓘ

30

Left main ⓘ

☒ no ☐ yes

Gender

☐ male ☒ female

COPD ⓘ

☒ no ☐ yes

PVD ⓘ

☒ no ☐ yes

SYNTAX score II

Calculate

SYNTAX score II nomogram

Total points	4-year mortality (%)
0	0.6%
10	1.3%
20	3%
30	6.8%
40	15.1%
50	31.5%
60	58.4%

SYNTAX score II

Decision making - between CABG and PCI - guided by the SYNTAX score II to be endorsed by the Heart Team.

PCI

SYNTAX score II: 43

PCI 4-year mortality: 18.6%

CABG

SYNTAX score II: 18

CABG 4-year mortality: 2.6%

Treatment recommendation ⓘ:

CABG

Conclusions

- **In patients with LMD, PCI is associated with a higher MACCE rate than CABG at 5 years**
- **This is driven by a higher rate of repeat revascularization in patients with SYNTAX scores ≥ 33 associated with PCI**
- **The rates of the safety endpoint of all-cause death/MI/Stroke are similar between the two strategies**
- **In the subset of less anatomic complexity/burden PCI might lead to a lower overall and cardiac mortality**

Conclusions

- **Very long term (10 years) preliminary data is reassuring for the safety of PCI**
- **The decision making process should take into account important clinical comorbidities and demographic factors**
- **The SYNTAX score II is a useful tool to help this decision process**

Thank You!



Volume 11 - Number 13 - April 2016 - ISSN: 1774-024X

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- 1511** A disaster never comes alone: total ostial occlusion of the left main coronary artery with an anomalous origin
P. Rodrigues, S. Torres, et al

INTERVENTIONS FOR VALVULAR DISEASE AND HEART FAILURE

- 1512** Left atrial appendage occlusion with the AMPLATZER Amulet device: an expert consensus step-by-step approach
A. Tzikas, H. Omran, et al
- 1522** The prognostic value of acute and chronic troponin elevation after transcatheter aortic valve implantation
J.M. Sinning, N. Werner, et al
- 1530** Emergency transcatheter aortic valve replacement in patients with cardiogenic shock due to acutely decompensated aortic stenosis
C. Frerker, K.H. Kuck, et al
- 1537** First-in-man report of residual "intra-clip" regurgitation between two MitraClips treated by AMPLATZER Vascular Plug II
M. Taramasso, F. Maisano, et al
- 1541** First transfemoral percutaneous edge-to-edge repair of the tricuspid valve using the MitraClip system
T. Wengenmayer, S. Grundmann, et al
- 1545** First Lotus aortic valve-in-valve implantation to treat degenerated Mitroflow bioprostheses
F. Castricola, A. Cremonesi, et al
- 1549** Direct Flow valve-in-valve implantation in a degenerated mitral bioprosthesis
G. Bruschi, F. De Marco, et al

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Volume 2 - Number 1 - January 2016 - ISSN: 2426-3958

CORONARY INTERVENTIONS

- 19** Late angiographic and clinical outcomes of the novel BioMime™ sirolimus-eluting coronary stent with ultra-thin cobalt-chromium platform and biodegradable polymer for the treatment of diseased coronary vessels: results from the prospective, multicentre meriT-2 clinical trial
- 28** Impact of chronic lung disease after percutaneous coronary intervention in Japanese patients with acute coronary syndrome
- 36** Distribution characteristics of coronary calcification and its substantial impact on stent expansion: an optical coherence tomography study
- 44** Smooth arterial healing after paclitaxel-coated balloon angioplasty for in-stent stenosis assessed by optical frequency domain imaging
- 48** Mediastinal haematoma complicating percutaneous coronary intervention via the radial artery

INTERVENTIONS FOR STRUCTURAL HEART DISEASE AND HEART FAILURE

- 49** Comparison of aortic annulus dimensions between Japanese and European patients undergoing transcatheter aortic valve implantation as determined by multi-detector computed tomography: results from the OCEAN-TAVI and a European single-centre cohort
- 57** Combined percutaneous transvenous mitral commissurotomy and left atrial appendage closure as an alternative to anticoagulation for rheumatic atrial fibrillation

EDITORIAL

- 7** Evolution and current status of interventional cardiology in India
- 10** Tailoring TAVI in Asia: insights from MSC
- 13** Opening the shell for better stent results

ASIA-PACIFIC HOTLINES AT TCT 2015

- 16** Asia-Pacific Hotlines at TCT 2015: a prospective randomised trial of paclitaxel-eluting vs. everolimus-eluting stents in diabetic patients with coronary artery disease (TUXEDO)
- 17** Asia-Pacific Hotlines at TCT 2015: bioresorbable vascular scaffolds versus metallic stents in patients with coronary artery disease (ABSORB China Trial)
- 18** Asia-Pacific Hotlines at TCT 2015: evaluation of initial surgical versus conservative strategies in patients with asymptomatic severe aortic stenosis (The CURRENT AS registry)

HOW SHOULD I TREAT?

- 58** How should I treat a patient with critical stenosis of a bifurcation of the left main coronary artery with an acute angulation between the left main artery and the left circumflex artery?
- 65** How should I treat a percutaneous posteromedial mitral periprosthetic paravalvular leak closure in a bioprosthesis with no radiopaque ring?