

# TCTAP 2021 Virtual

## Individualized Decision-making Between CABG and PCI for Multivessel or LM Disease: Expert Surgeon's View

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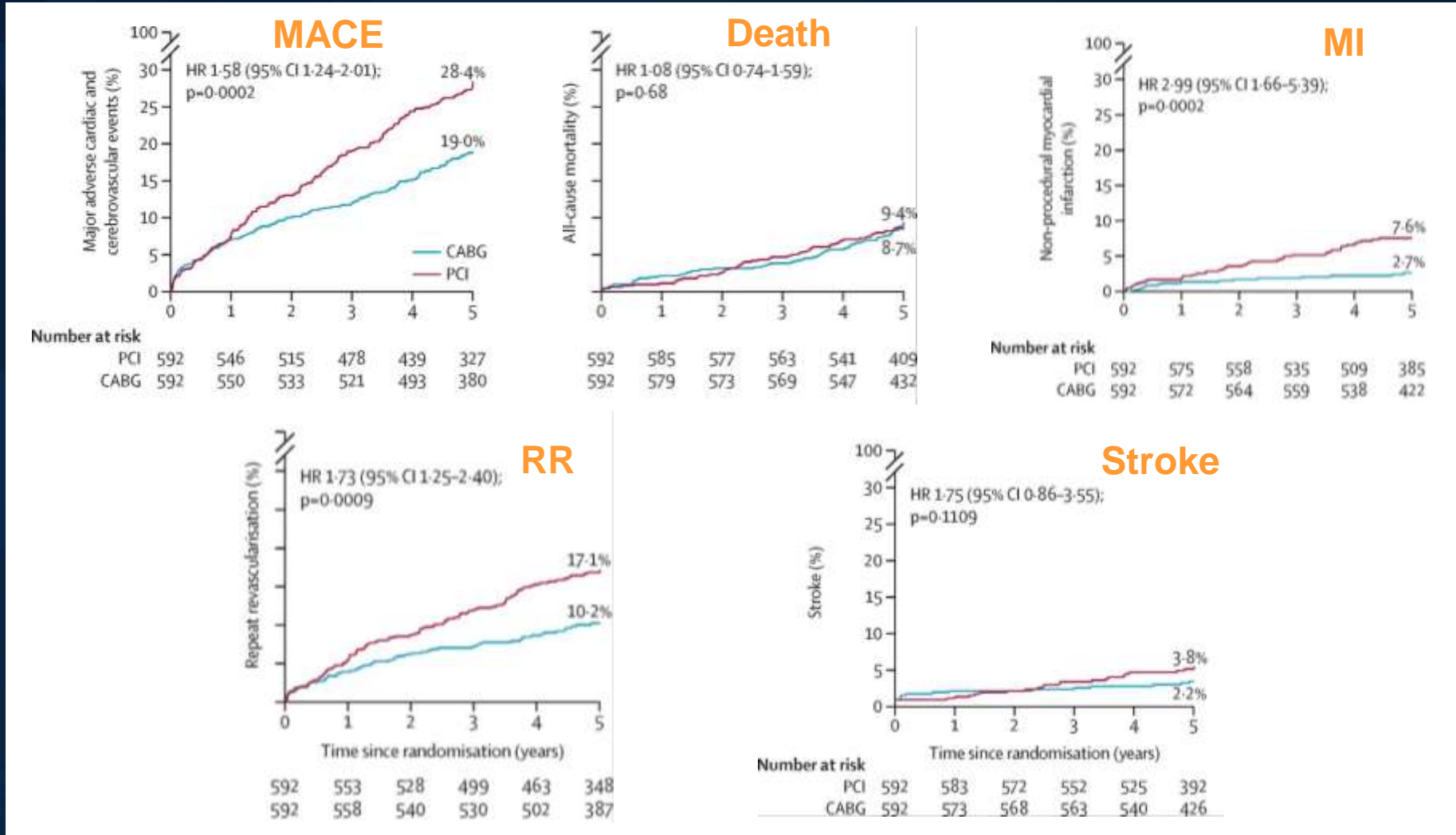
# Disclosures

- No conflicts of interest

# The “apparent” controversy

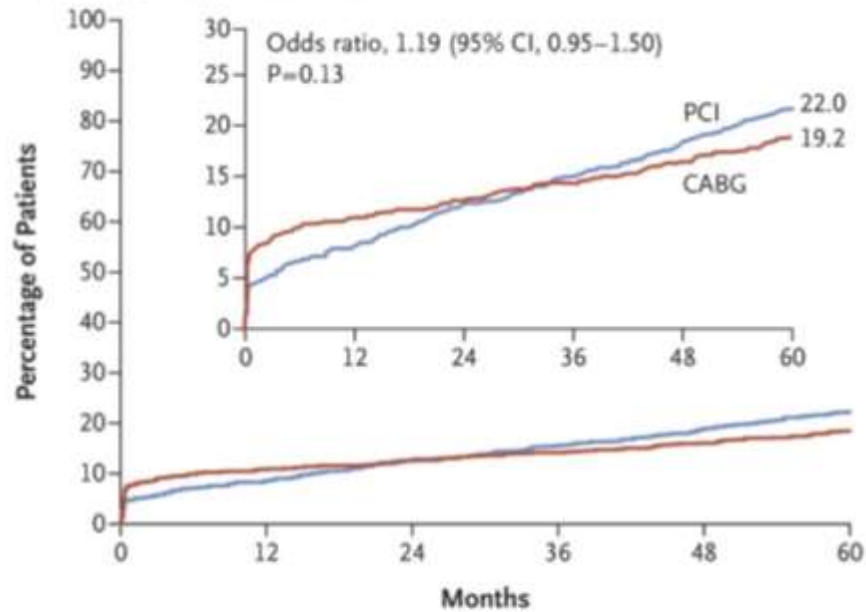
- Published evidence consistently shows **very different risk profiles and time-varying benefit** for PCI and CABG.
- In real world practice the majority of patients have clinical or anatomic characteristics that **clearly drive the decision** between the two treatment modalities
- The key is **individualization** of treatment to the patient and the local expertise
- Time to **get over** the controversy

# Kaplan-Meier estimates of 5-year clinical outcomes in intention-to-treat population – NOBLE trial



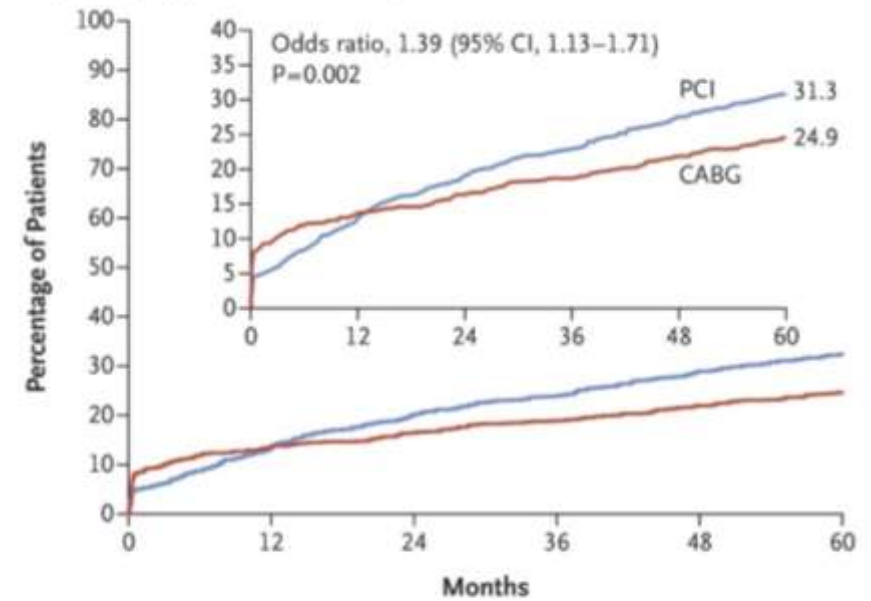
# Time-to-First-Event Curves for the Primary and Secondary Composite Outcomes through 5-Year Follow-up – EXCEL trial

**A** Death, Stroke, or Myocardial Infarction



No. at Risk		0	12	24	36	48	60
PCI	948	854	809	778	738	486	
CABG	957	818	789	763	734	532	

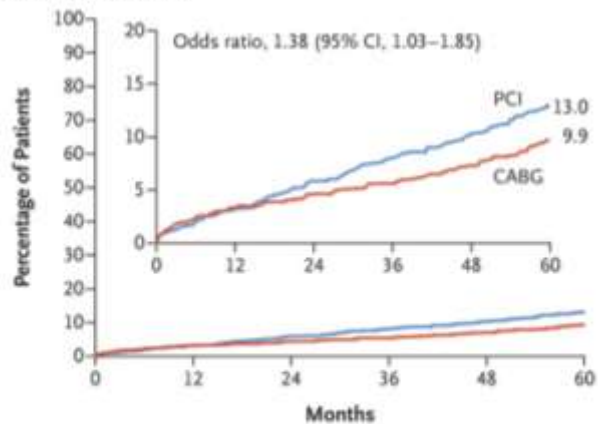
**B** Death, Stroke, Myocardial Infarction, or Ischemia-Driven Revascularization



No. at Risk		0	12	24	36	48	60
PCI	948	813	746	706	653	428	
CABG	957	795	757	725	686	494	

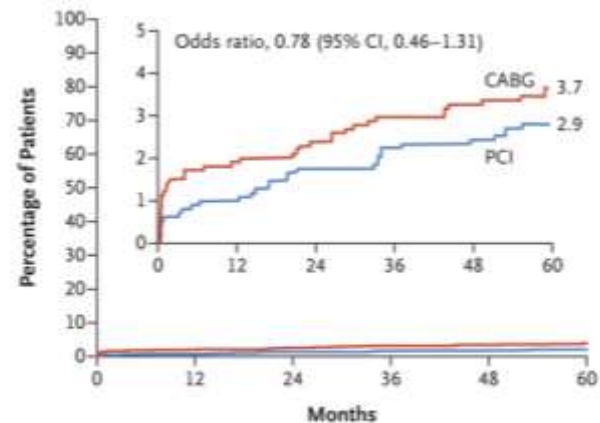
# Time-to-First-Event Curves for the Components of the Primary and Secondary Composite Outcomes through 5-Year Follow-up – EXCEL trial

**A Death from Any Cause**



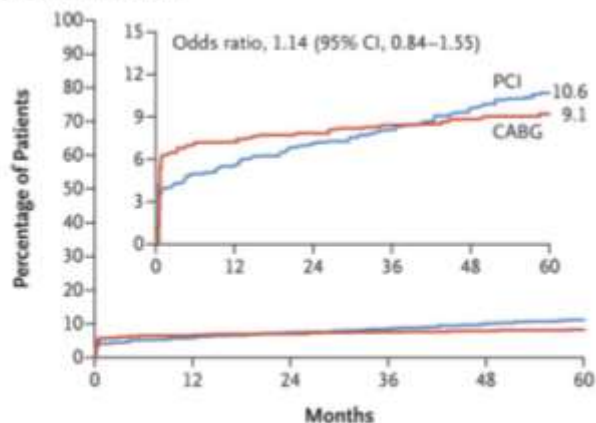
No. at Risk	0	12	24	36	48	60
PCI	948	902	868	841	810	545
CABG	957	889	865	844	815	596

**B Stroke**



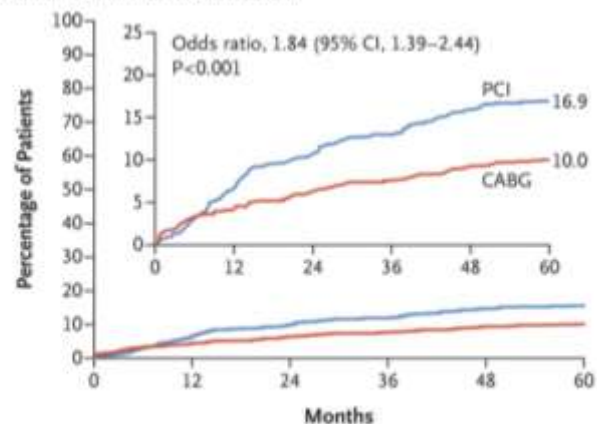
No. at Risk	0	12	24	36	48	60
PCI	948	896	858	831	799	534
CABG	957	879	851	828	799	583

**C Myocardial Infarction**



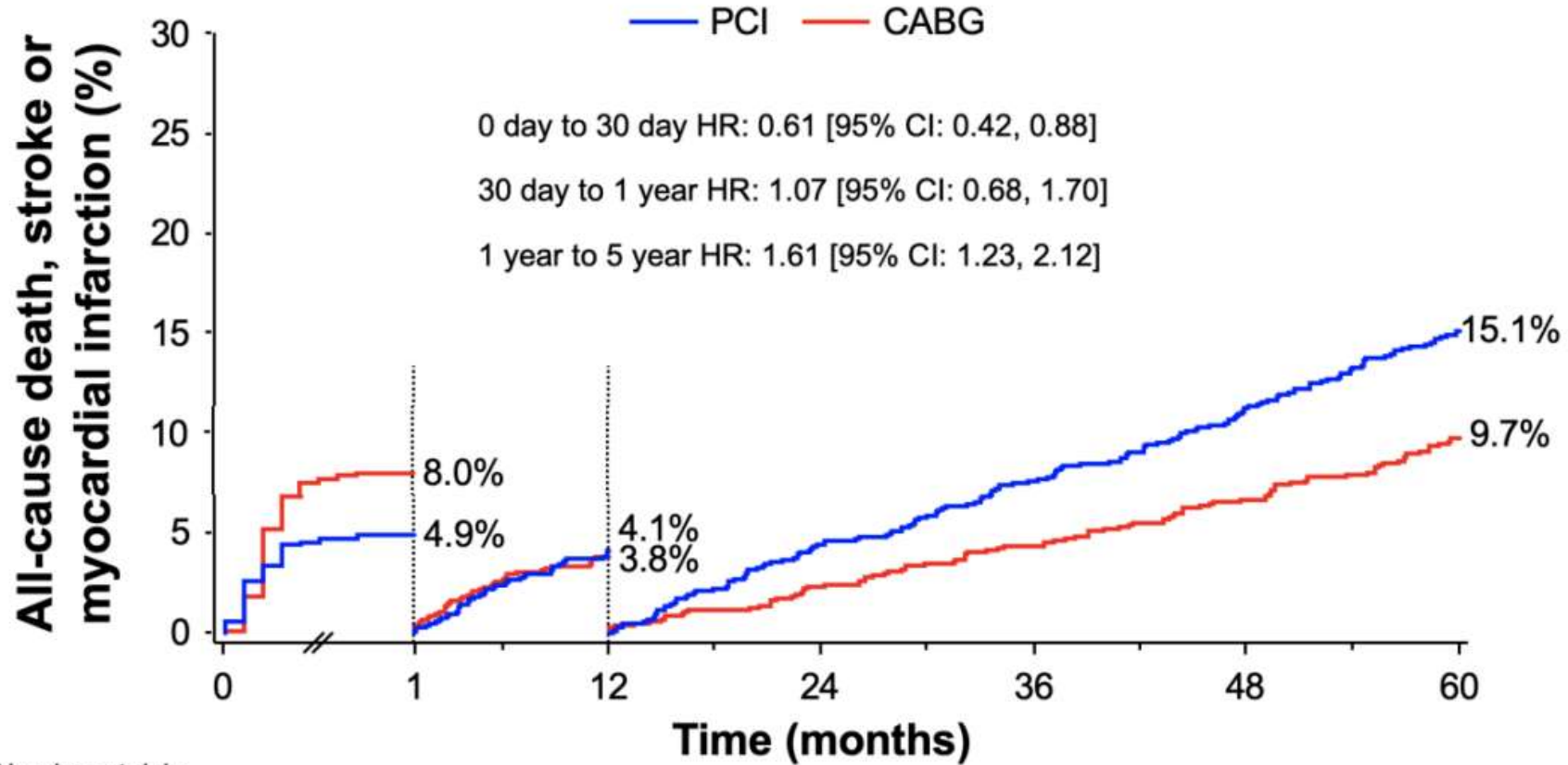
No. at Risk	0	12	24	36	48	60
PCI	948	860	819	788	750	496
CABG	957	827	801	778	749	543

**D Ischemia-Driven Revascularization**



No. at Risk	0	12	24	36	48	60
PCI	948	847	781	741	690	457
CABG	957	853	814	785	744	542

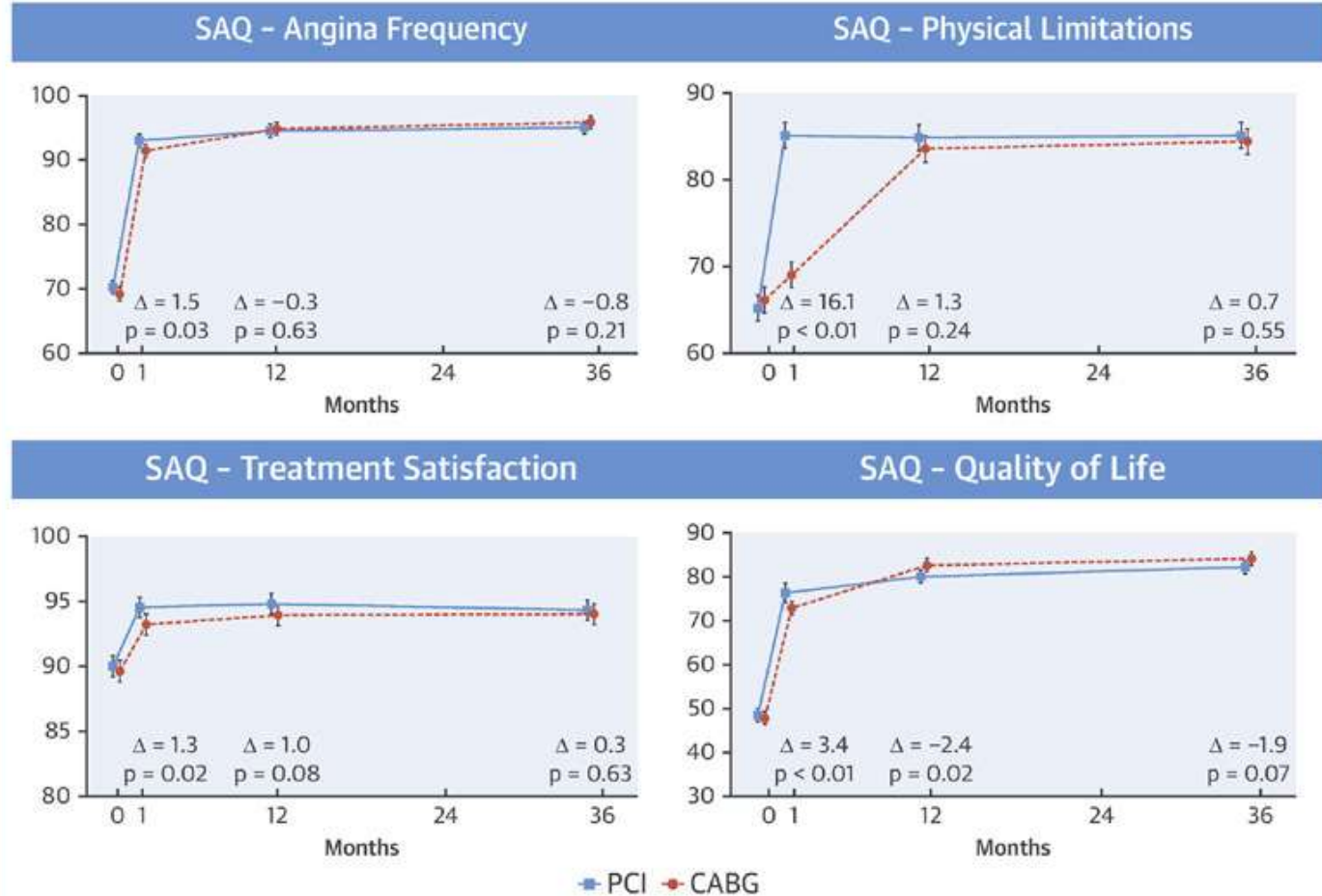
Piecewise analysis for the primary composite outcome of death, stroke or myocardial infarction from 0 to 30 days, 30 days to 1 year, and 1 year to 5 years – EXCEL trial



Number at risk:

PCI	948	933	902	854	819	776	511
CABG	957	929	889	856	827	794	579

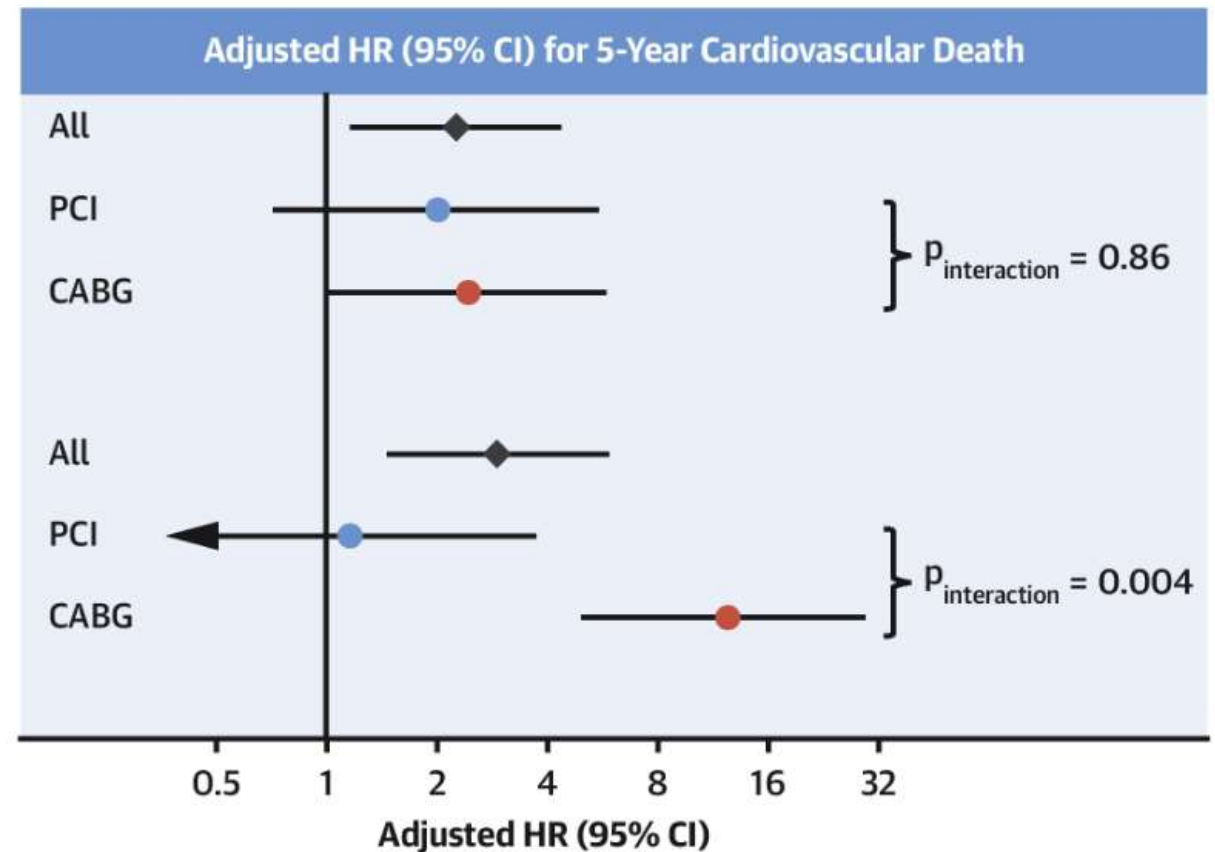
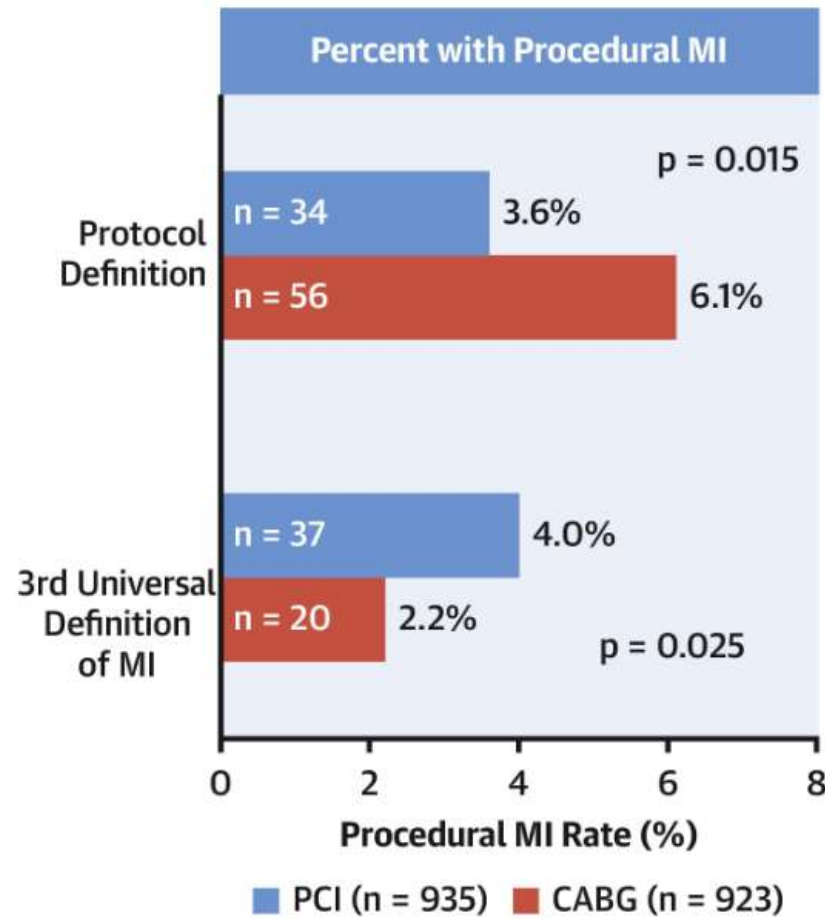
**CENTRAL ILLUSTRATION: Disease-Specific Health Status After PCI Versus CABG as Measured by the SAQ**



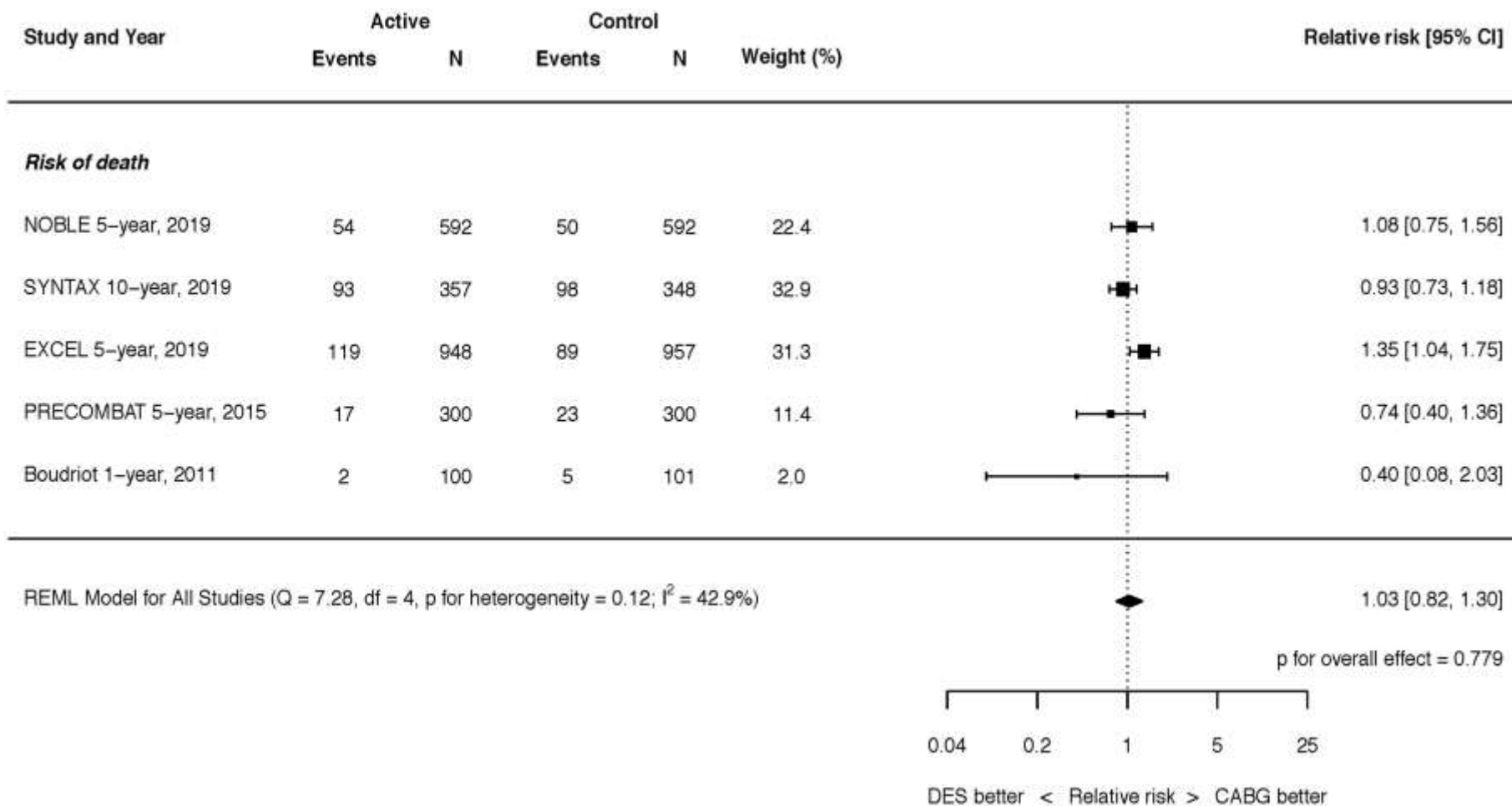
Baron, S.J. et al. J Am Coll Cardiol. 2017;70(25):3113-22.



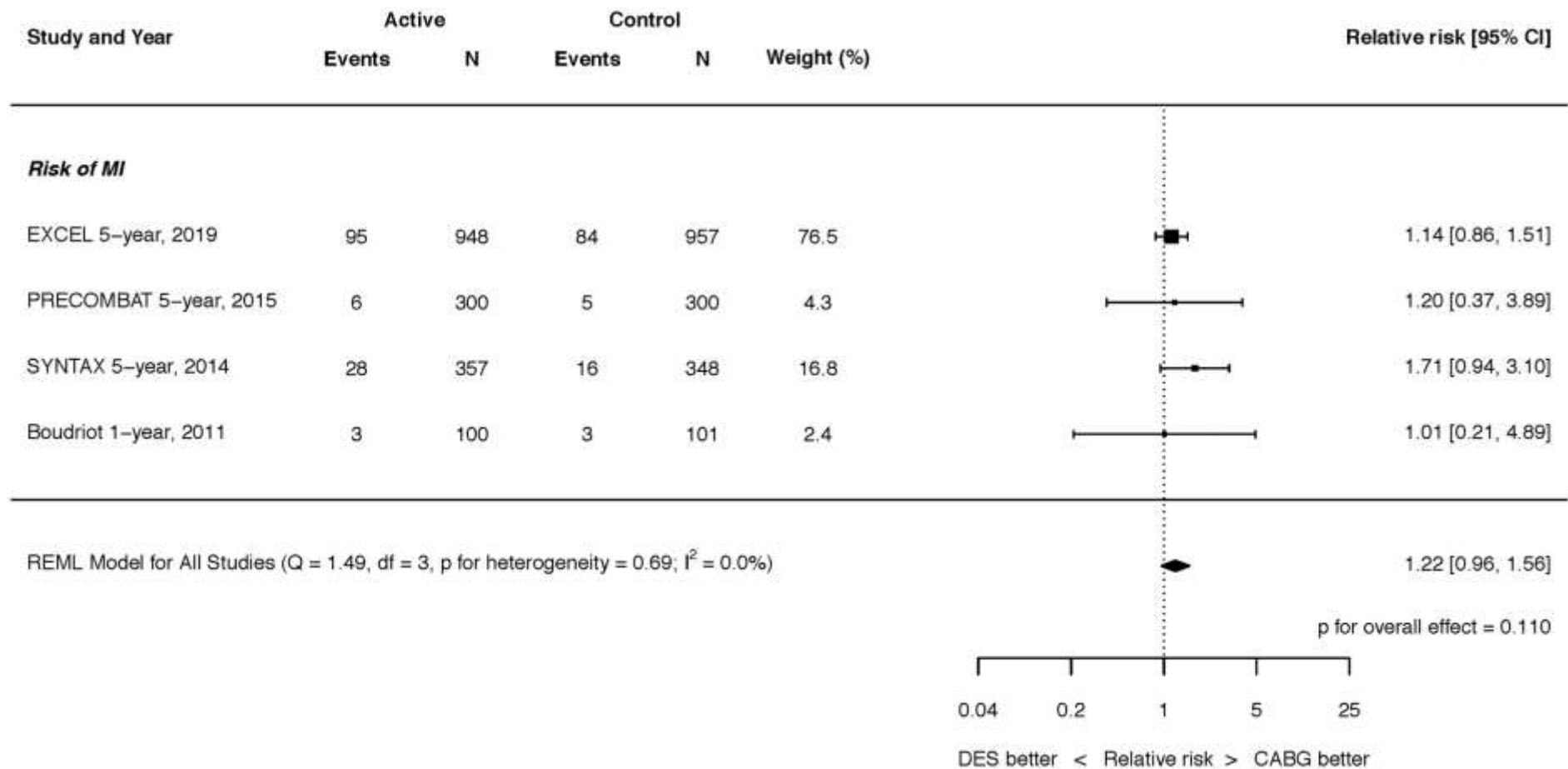
# Incidence of different definitions of procedural myocardial infarction and their impact on cardiovascular mortality by treatment in the EXCEL Trial



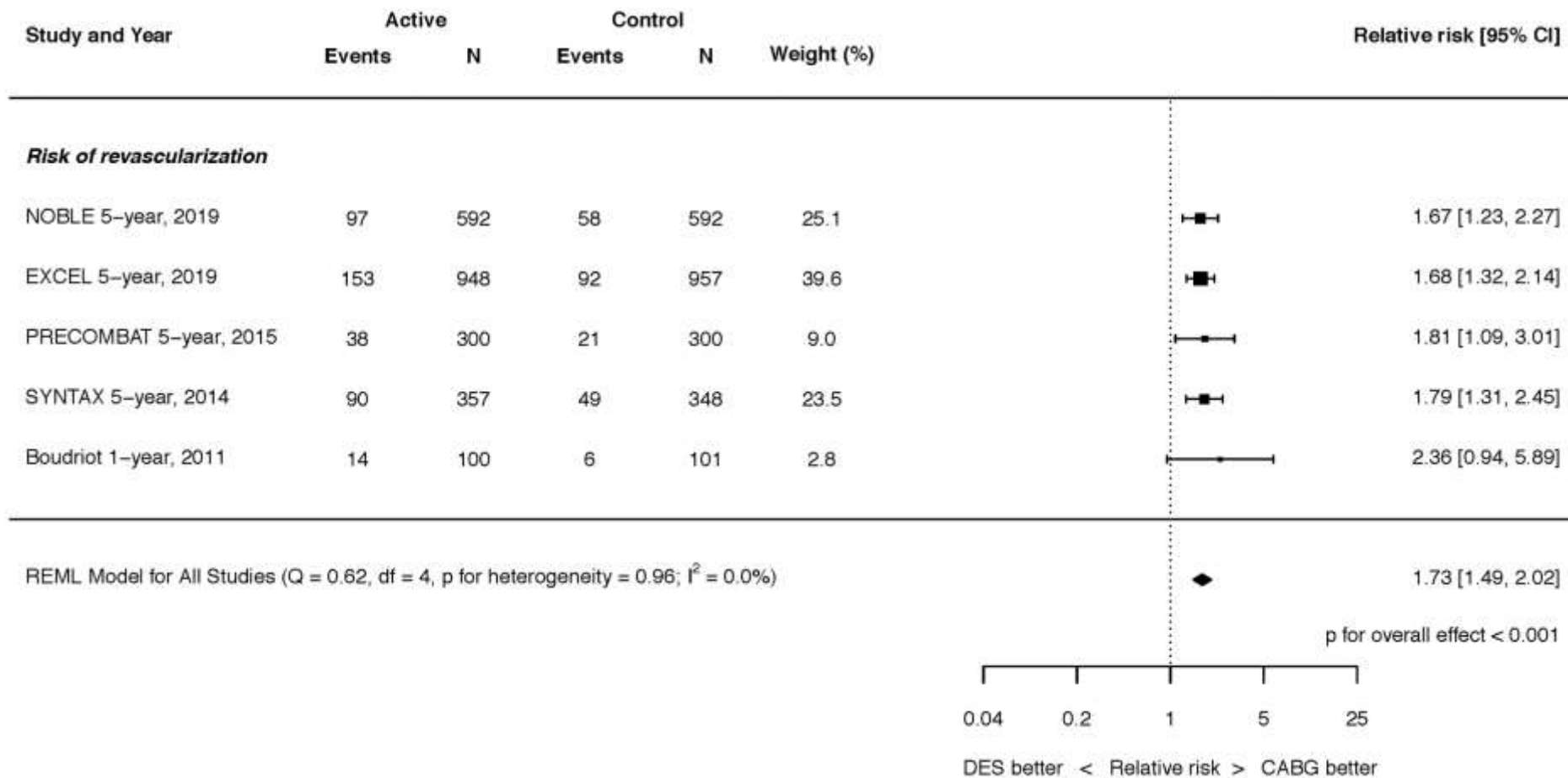
# Meta-analyses: Risk of death at latest follow-up



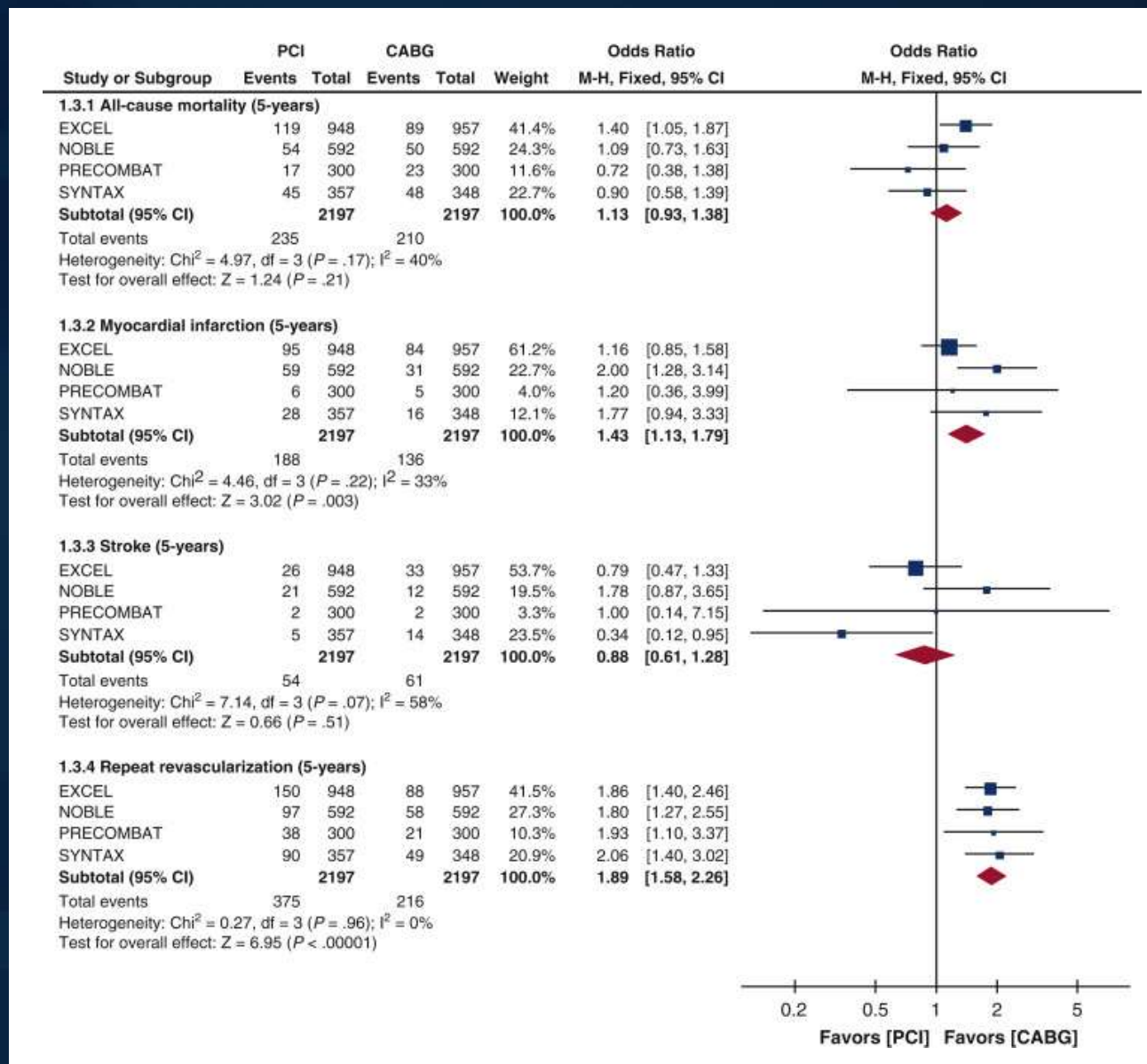
# Meta-analyses: Risk of myocardial infarction at latest follow-up



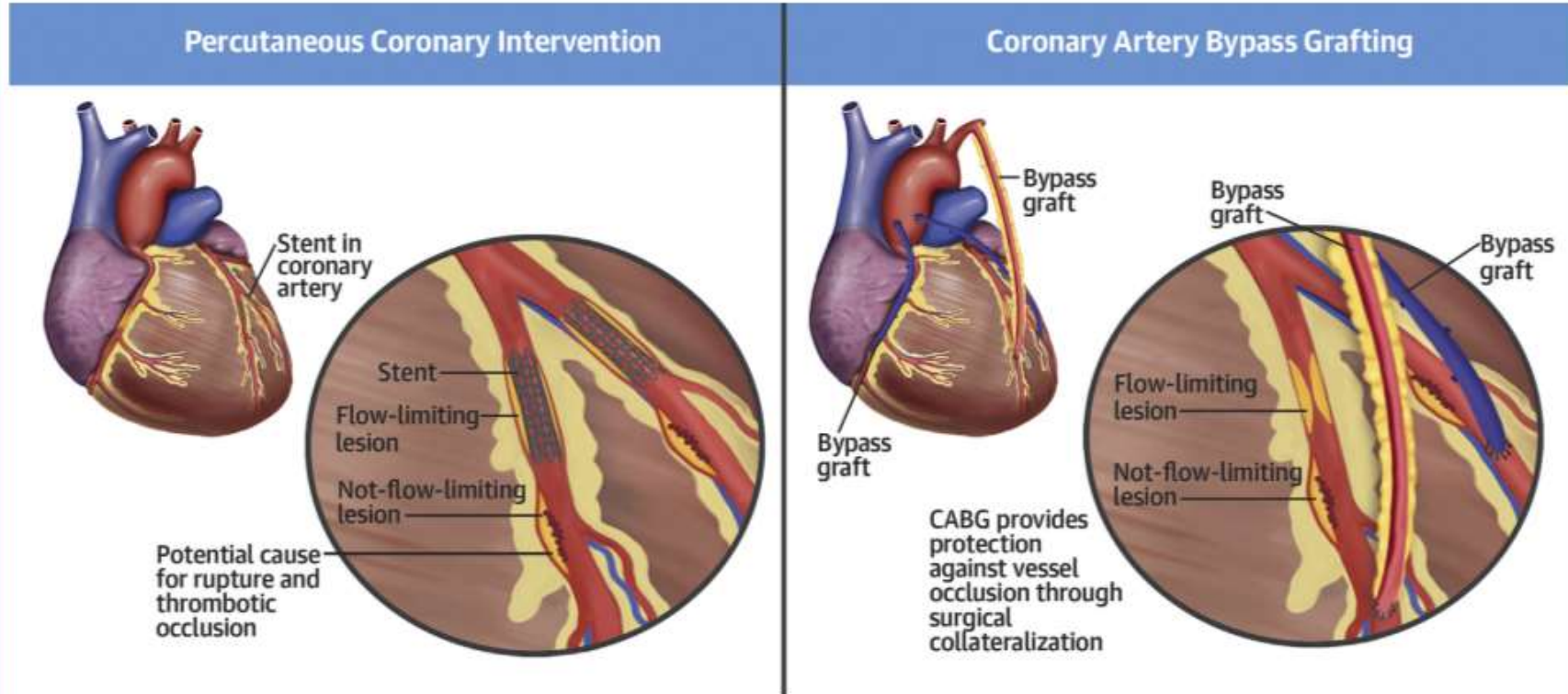
# Meta-analyses: Risk of revascularization at latest follow-up



# Meta-analysis of randomized trials comparing the effect of coronary artery bypass grafting (CABG) versus percutaneous coronary intervention (PCI) comes at 5 years follow-up



## CENTRAL ILLUSTRATION Infarct Prevention Through Bypass Grafting



Doenst, T. et al. *J Am Coll Cardiol.* 2019;73(8):964-76.

Schematic illustration of mechanistic differences between percutaneous coronary intervention and coronary artery bypass grafting (CABG). Although both stents and bypass grafts provide revascularization to vascular territories affected by flow-limiting stenoses, only CABG also provides protection against vessel occlusions (i.e., myocardial infarctions) from non-flow-limiting stenoses, because the majority of bypass graft insertions are performed distal to the plaque location.

# Conclusions/Take-home message

- PCI and CABG are **different interventions** that are performed in different patients with different aims.
- **Surgery** is associated with **higher peri-procedural risk** and discomfort and **better clinical outcomes in the long term**
- **PCI** assures outcomes **comparable to surgery in the first 1-2 years** after the procedure with much **lower invasiveness**.
- The two interventions are **complementary, not antagonists**

**Thank you for your attention!!**