

# Duration of DAPT in PCI: History and Perspectives

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# Disclosure

## ▶ Grant support

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- Ministry of Health & Welfare, Republic of Korea
- Sungkyunkwan University Foundation for Corporate Collaboration
- Abbott Vascular, Boston Scientific, Biotronik, Biometrics, and Medtronic

## ▶ Consulting Fees/Honoraria

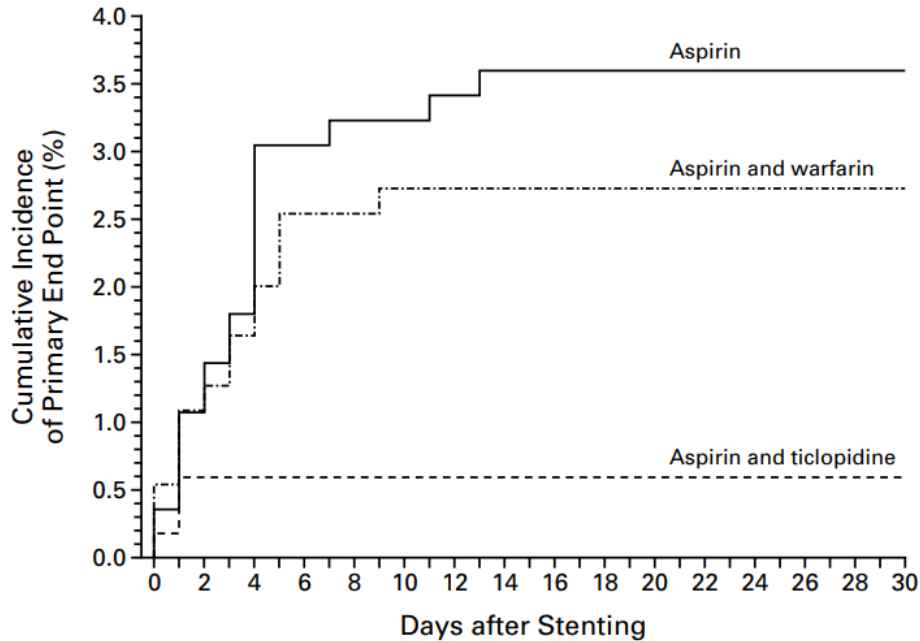
- Abbott Vascular, Astra Zeneca, Biotronik, Biometrics, Daiichi Sankyo, Pfizer, and Sanofi-Aventis



# Dual antiplatelet therapy (DAPT) after stent implantation

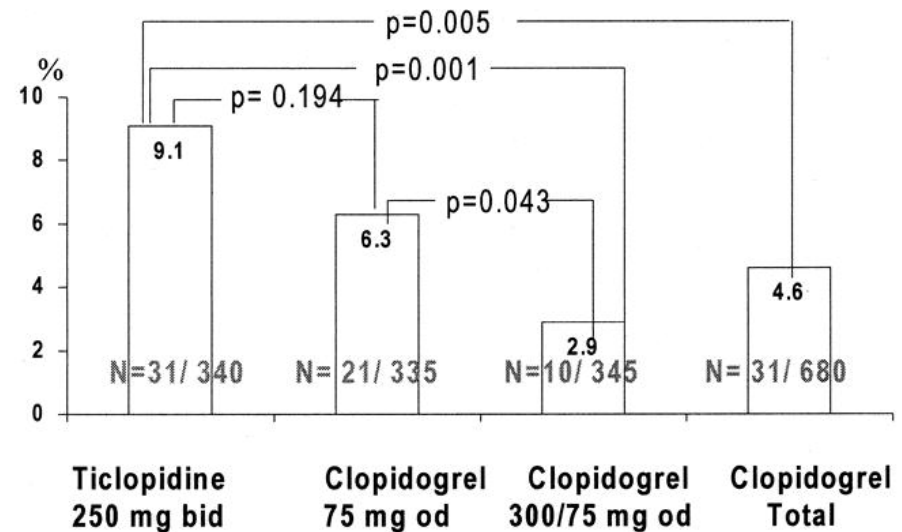
## STARS

Death, MI, ST, and TLR



## CALSSICS

Safety/tolerability

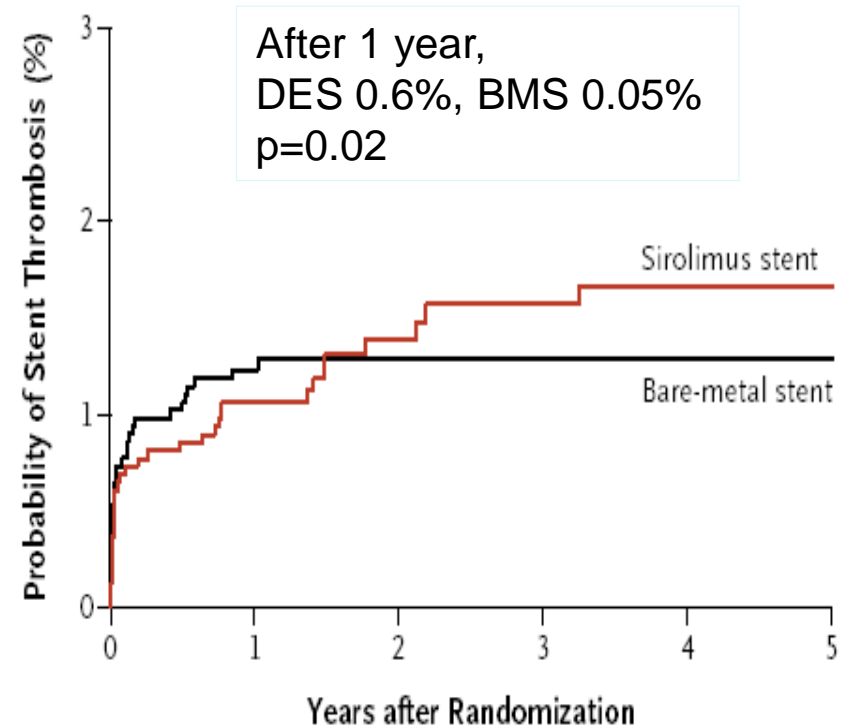
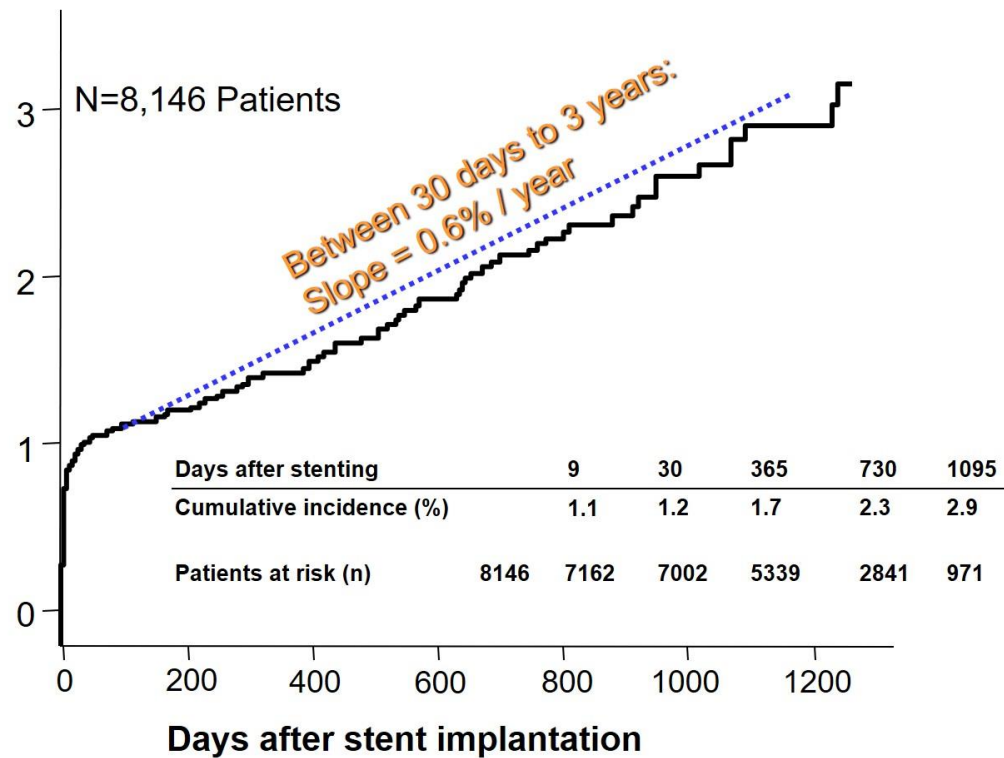




# Increased stent thrombosis

Bern - Rotterdam Cohort Study

Meta-analysis



# 2011 ACCF/AHA/SCAI guidelines for dual antiplatelet therapy

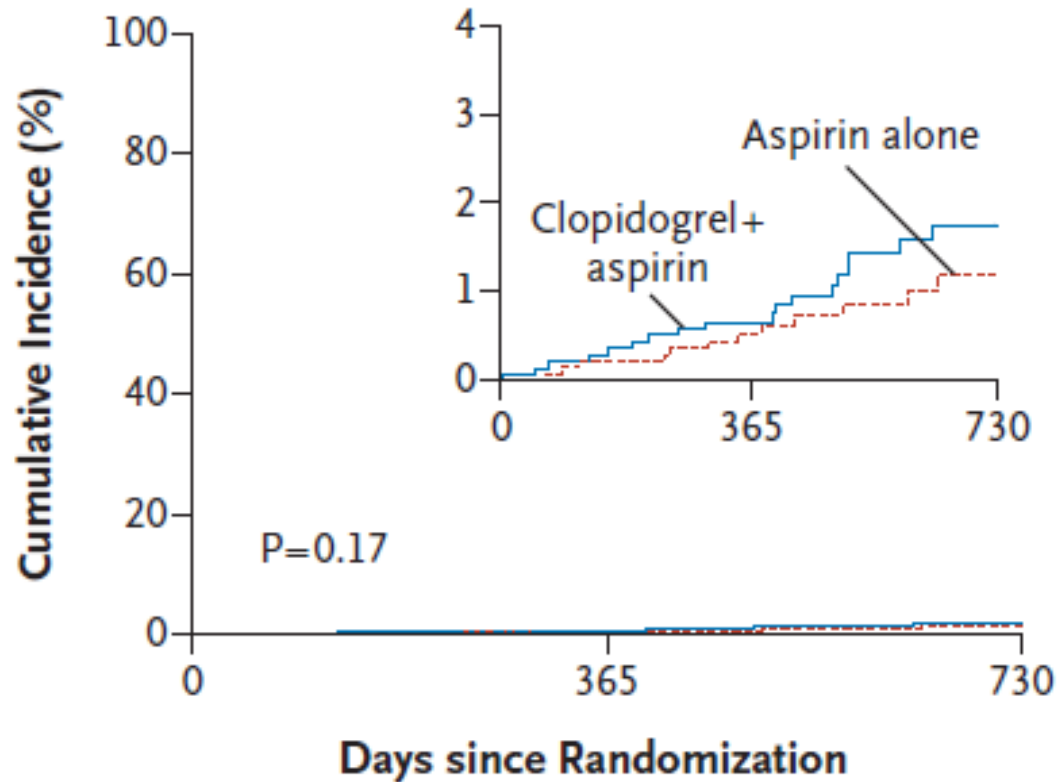


- ▶ Class I
  - After PCI, use of aspirin should be continued indefinitely.
  - Acute coronary syndrome: at least 12 months
  - Drug-eluting stent (DES): at least 12 months
  - Bare metal stent (BMS): minimum of 1 month and ideally up to 12 months
  
- ▶ Class IIa
  - If the risk of morbidity from bleeding outweighs the anticipated benefit afforded by a recommended duration of P2Y12 inhibitor therapy after stent implantation, earlier discontinuation (eg, <12 months) of P2Y12 inhibitor therapy is reasonable.
  
- ▶ Class IIb
  - Continuation beyond 12 months may be considered in DES group.

# REAL-LATE and ZEST-LATE trials



## A Primary End Point: MI or Death from Cardiac Causes



### No. at Risk

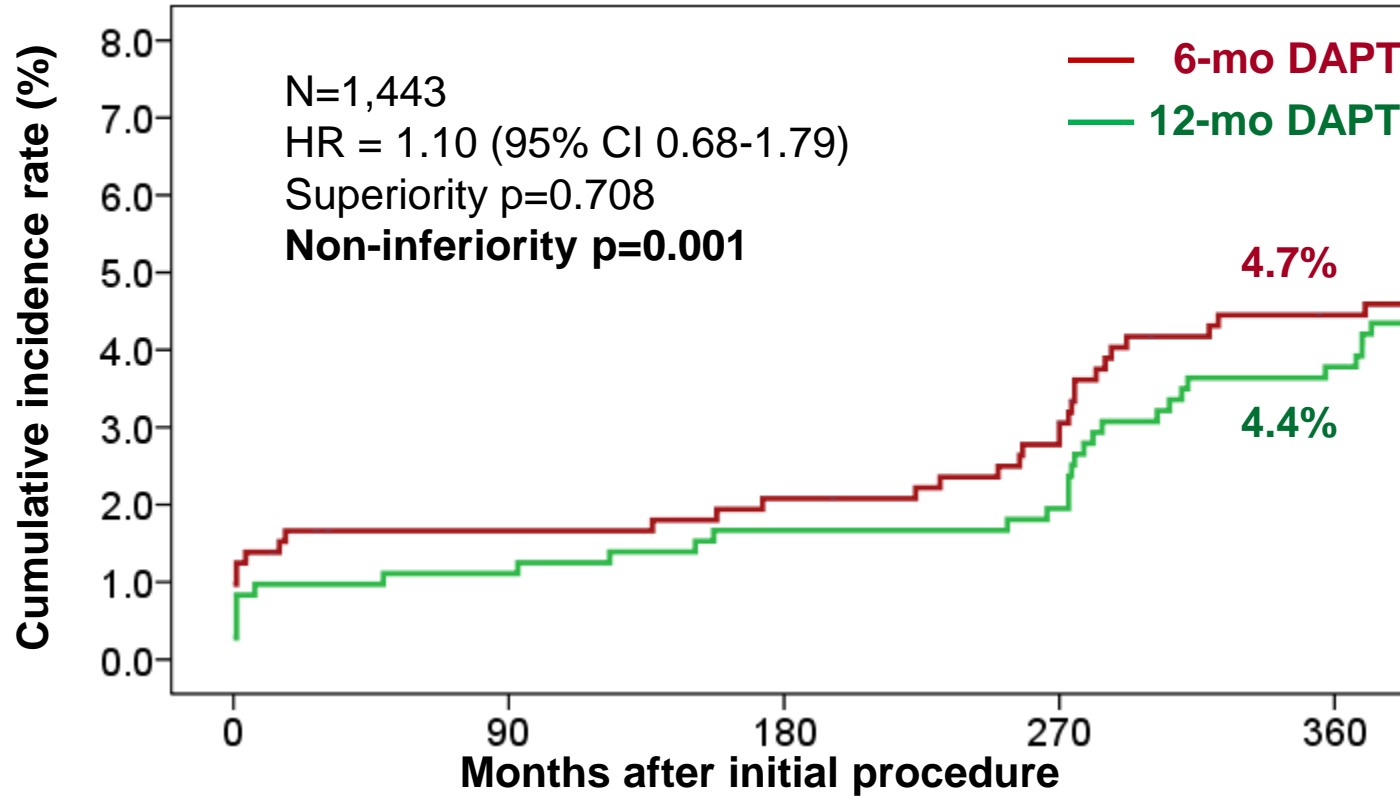
|                     |      |      |     |
|---------------------|------|------|-----|
| Clopidogrel+aspirin | 1357 | 1122 | 299 |
| Aspirin alone       | 1344 | 1100 | 301 |





# EXCELLENT Trial

## 1° EP: Target Vessel Failure (TVF)



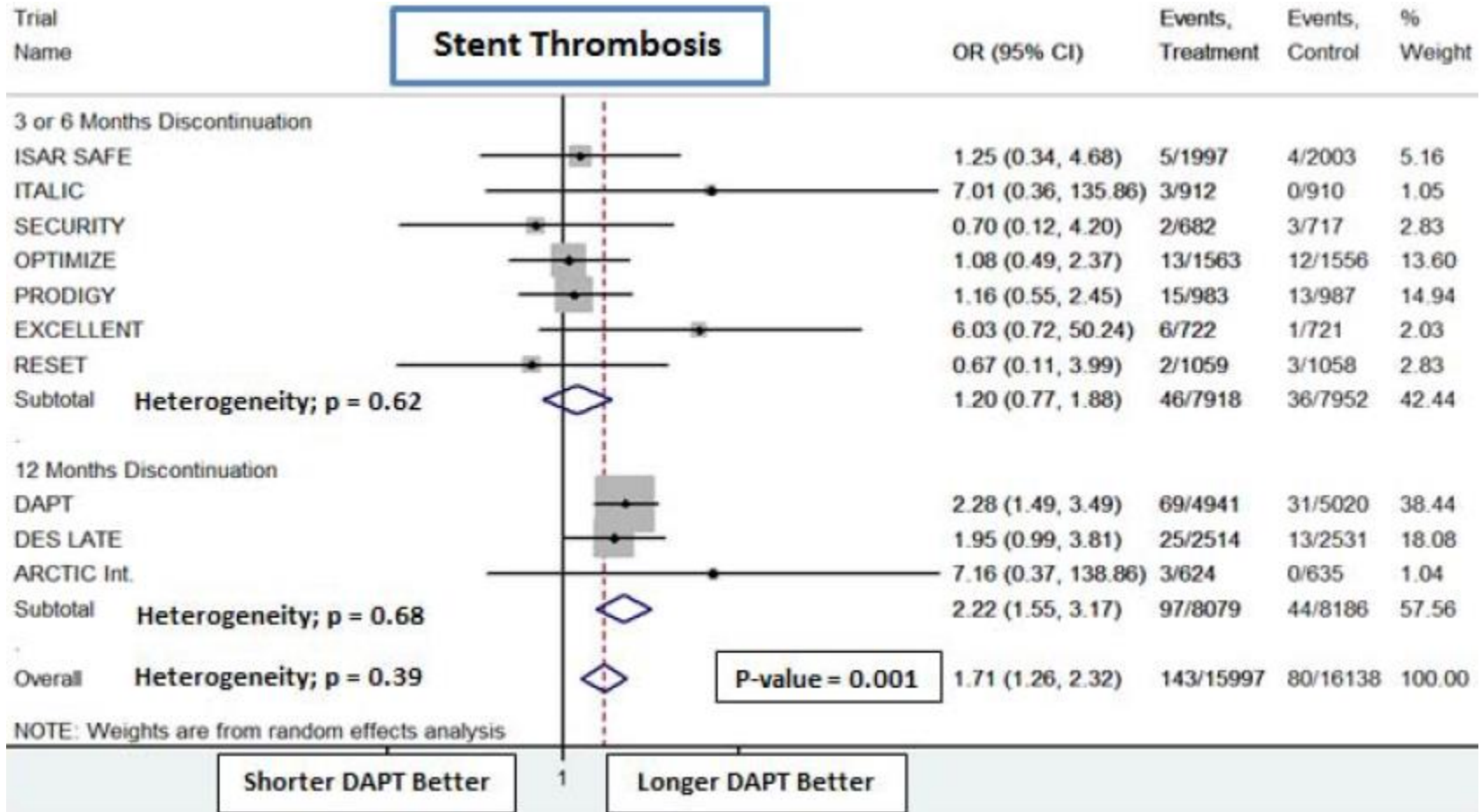
*Patient Number at Risks*

|          |     |     |     |     |     |
|----------|-----|-----|-----|-----|-----|
| 6-month  | 722 | 707 | 704 | 698 | 682 |
| 12-month | 721 | 710 | 703 | 698 | 682 |

\* DAPT = dual antiplatelet therapy



# Meta-analysis

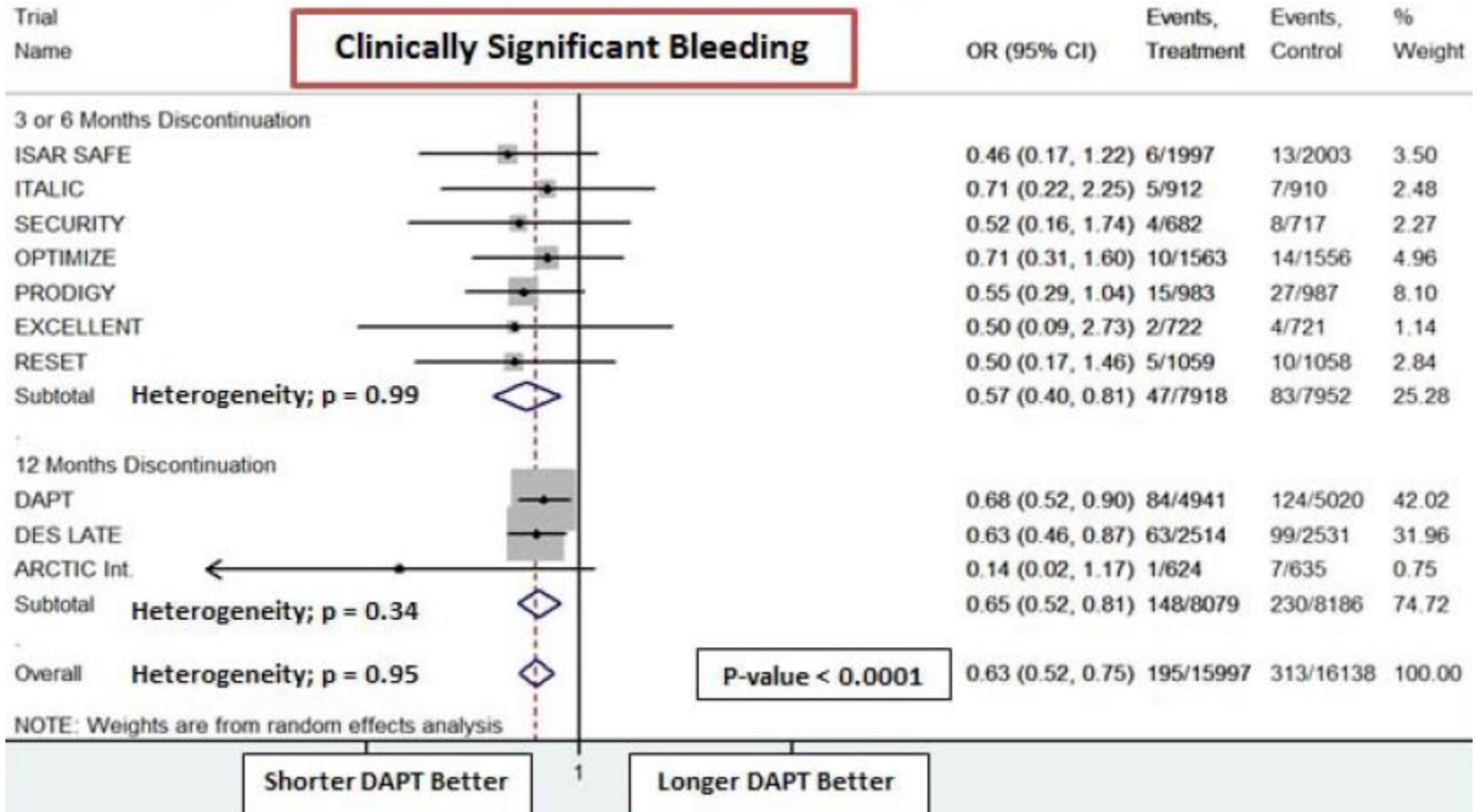






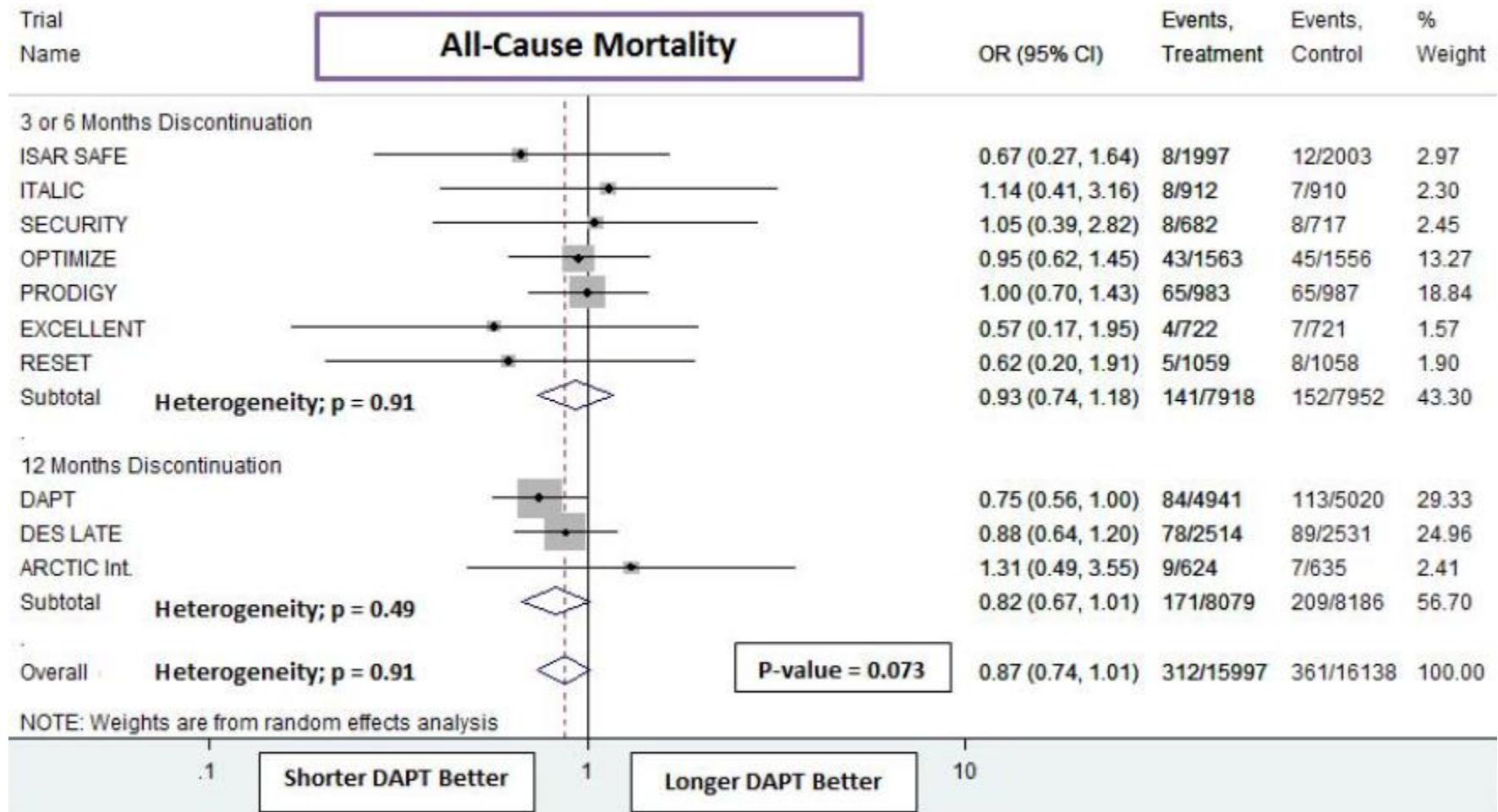
# Meta-analysis

## Clinically Significant Bleeding





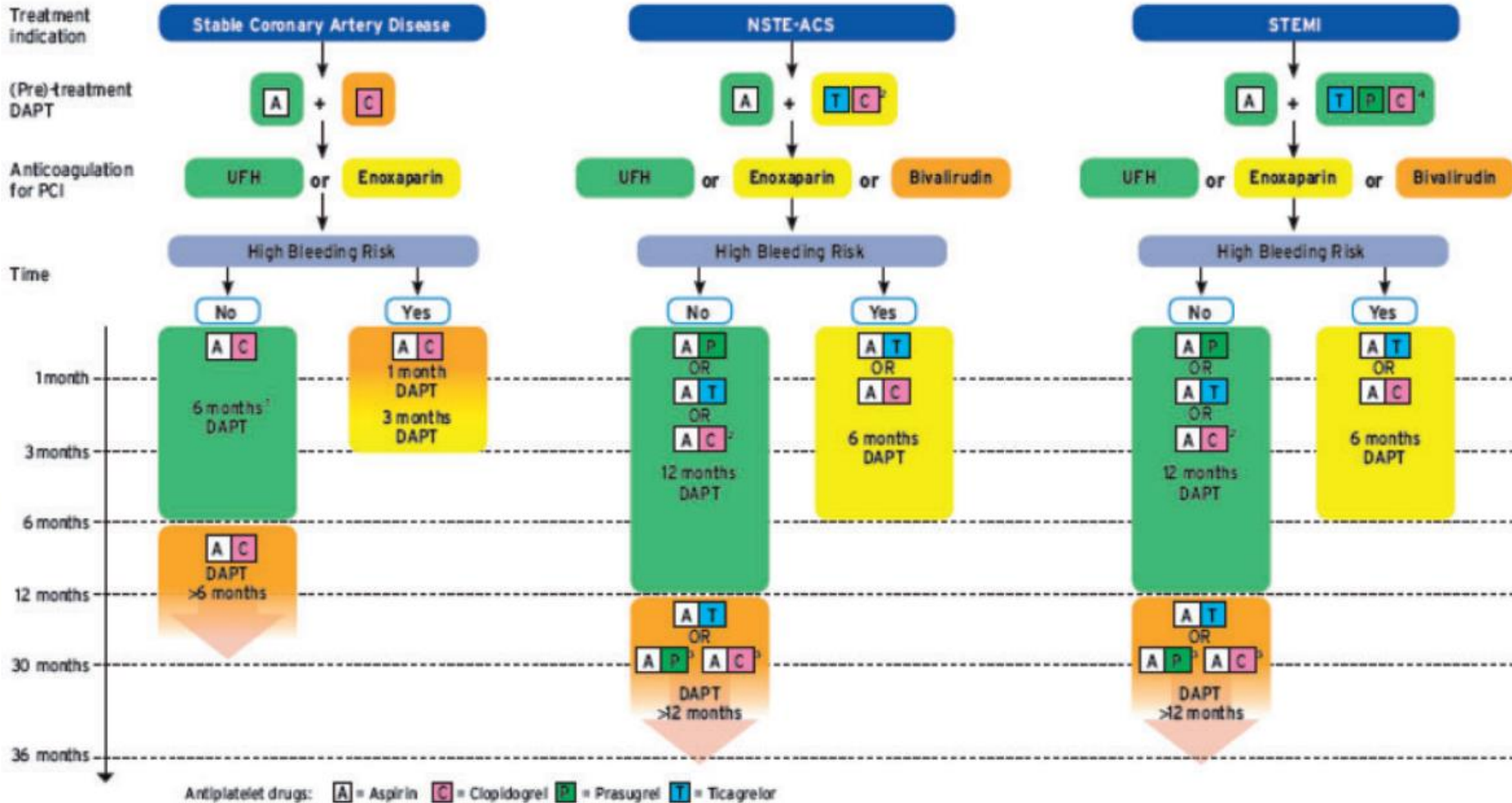
# Meta-analysis



# 2018 ESC/EACTS Guidelines on myocardial revascularization



## Antithrombotic Treatment in Patients Undergoing Percutaneous Coronary Intervention





# One size does not fit all.

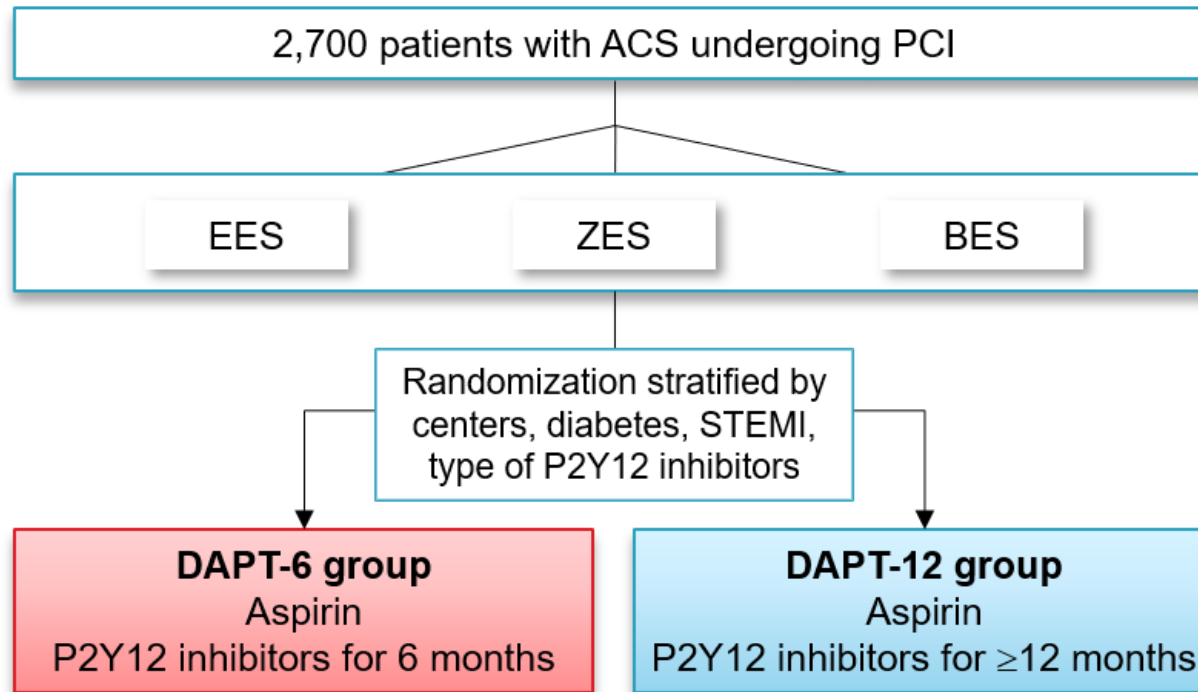
- ▶ Consideration for prolonged DAPT or potent P2Y12 inhibitors
  - Patients with ACS, DM, and so on
  - Complex PCI
  
- ▶ Patients with high bleeding risk (HBR)
  - How to define HBR





# SMART-DATE trial: study design

A prospective, multicenter, randomized, and open-label trial



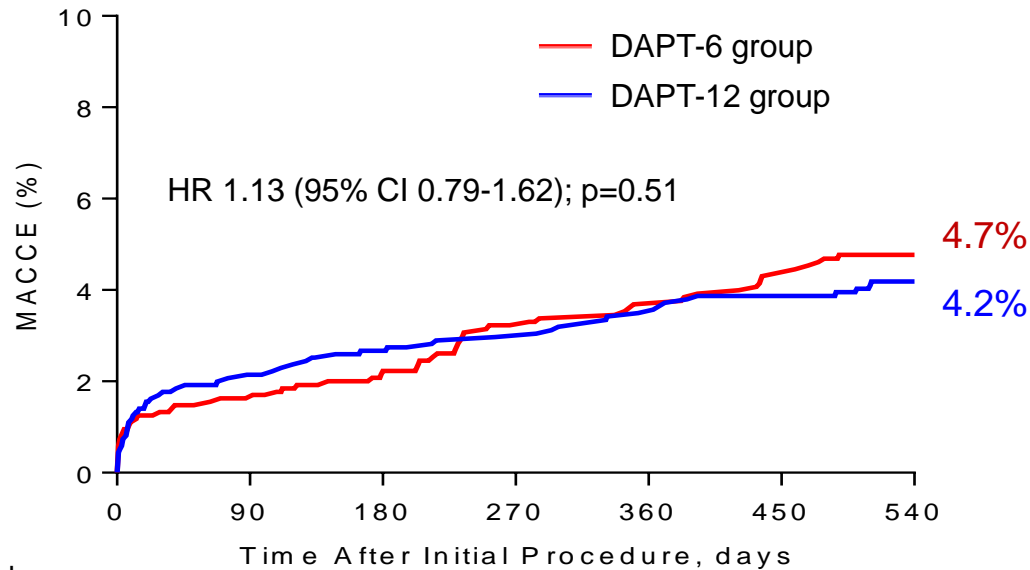
- PCI=percutaneous coronary intervention
- EES = everolimus eluting stent (Xience Prime)
- ZES = zotarolimus eluting stent (Resolute Integrity)
- BES = biolimus eluting stent (Biomatrix Flex)
- STEMI = ST elevation myocardial infarction
- MI = myocardial infarction

Primary endpoint: 18-month MACCE  
a composite of all-cause mortality, MI, or cerebrovascular events

ClinicalTrials.gov NCT01701453



# Primary endpoint (MACCE)



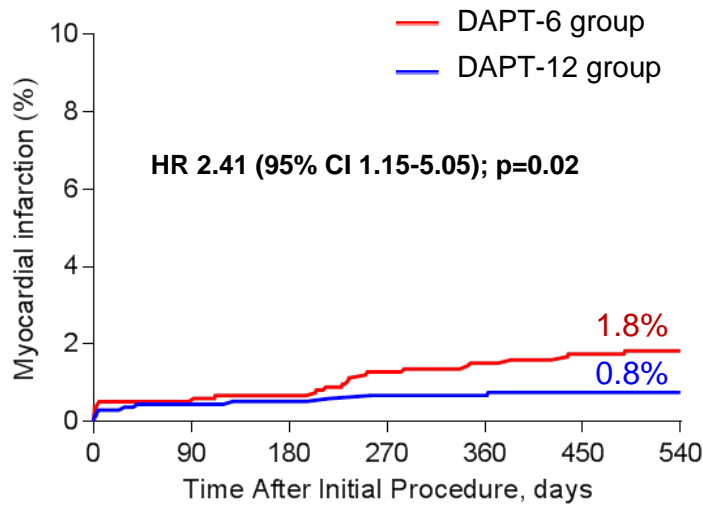
No. at risk

|            |      |      |      |      |      |      |      |
|------------|------|------|------|------|------|------|------|
| Long-term  | 1355 | 1312 | 1299 | 1290 | 1283 | 1278 | 1043 |
| Short-term | 1357 | 1318 | 1296 | 1271 | 1264 | 1255 | 1032 |



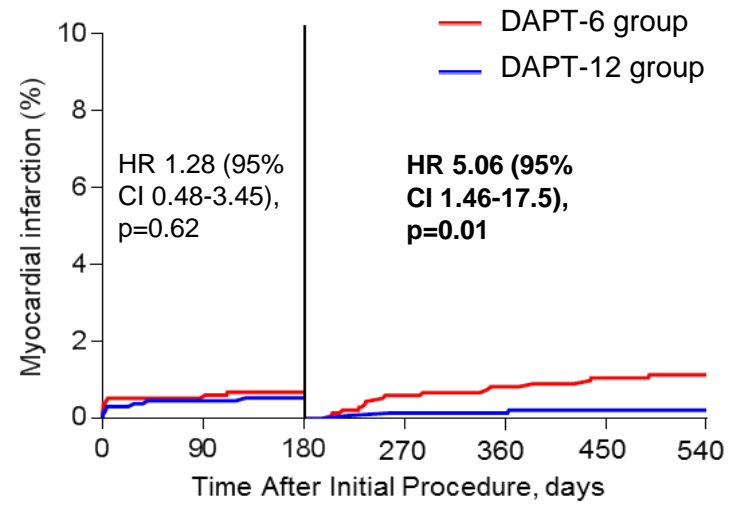


# Myocardial infarction



No. at risk

|            |      |      |      |      |      |      |      |
|------------|------|------|------|------|------|------|------|
| Long-term  | 1355 | 1315 | 1303 | 1295 | 1289 | 1284 | 1049 |
| Short-term | 1357 | 1321 | 1300 | 1277 | 1270 | 1263 | 1039 |

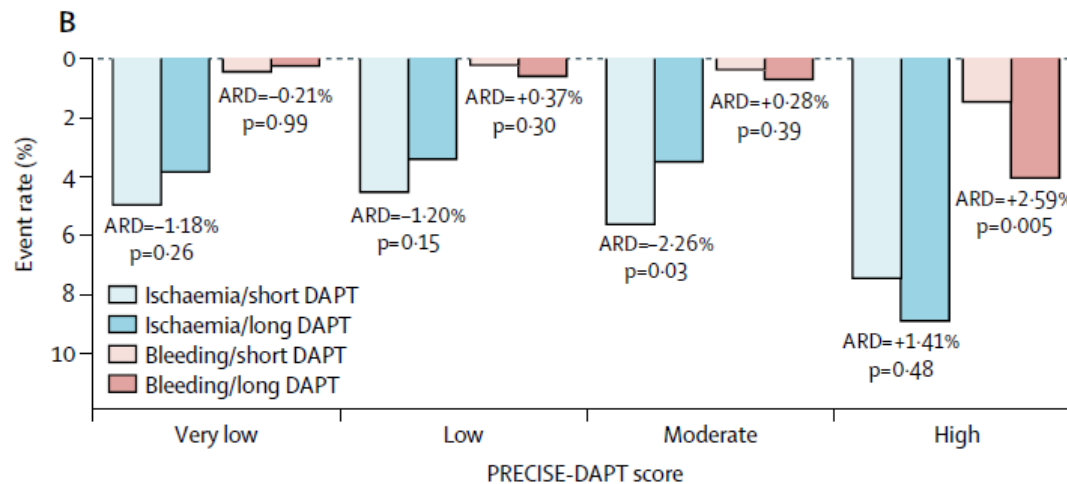
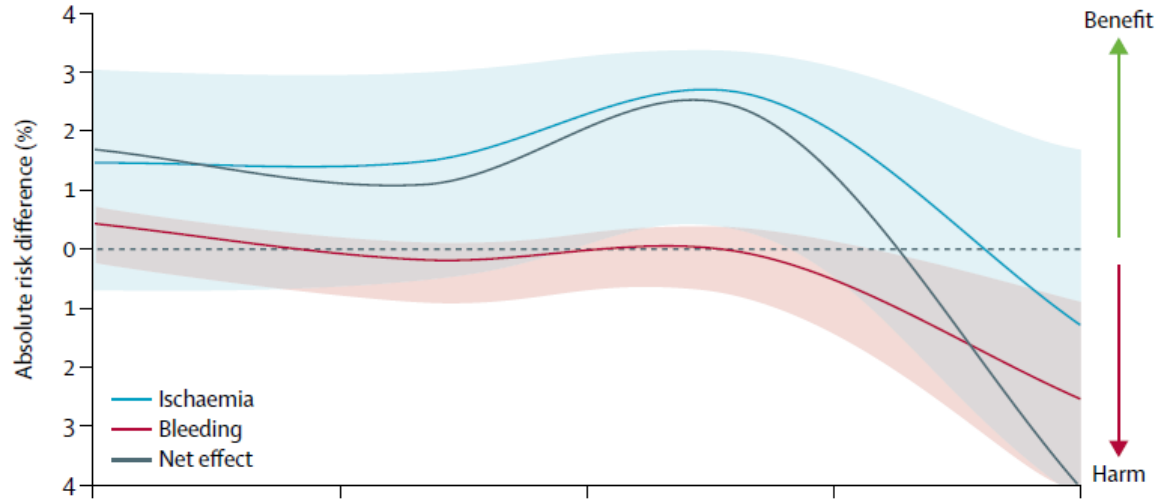


No. at risk

|            |      |      |      |      |      |      |      |
|------------|------|------|------|------|------|------|------|
| Long-term  | 1355 | 1315 | 1303 | 1295 | 1289 | 1284 | 1049 |
| Short-term | 1357 | 1321 | 1300 | 1277 | 1270 | 1263 | 1039 |



# PRECISE-DAPT score



high risk: score  $\geq 25$

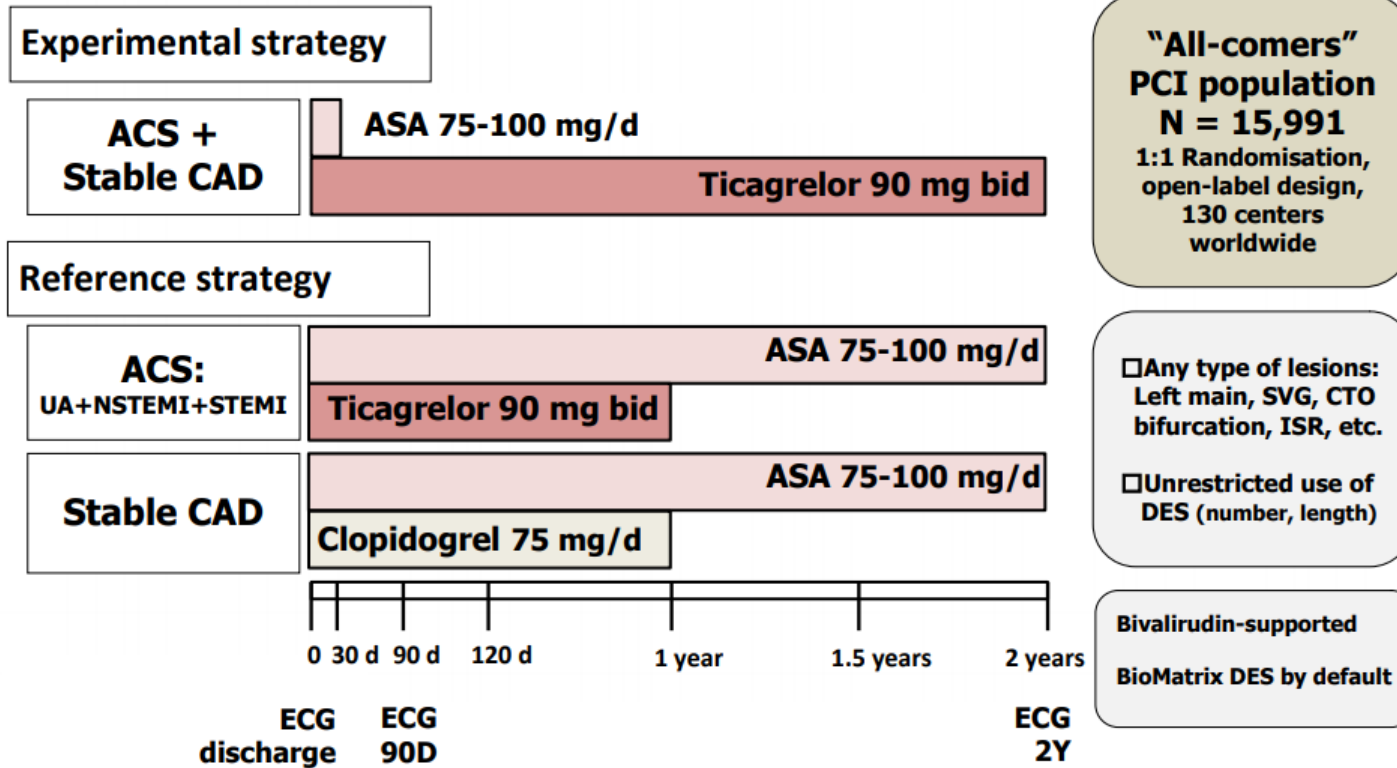


# New strategies

- ▶ P2Y12 inhibitor monotherapy
- ▶ Vascular dose of NOAC



# GLOBAL LEADERS trial

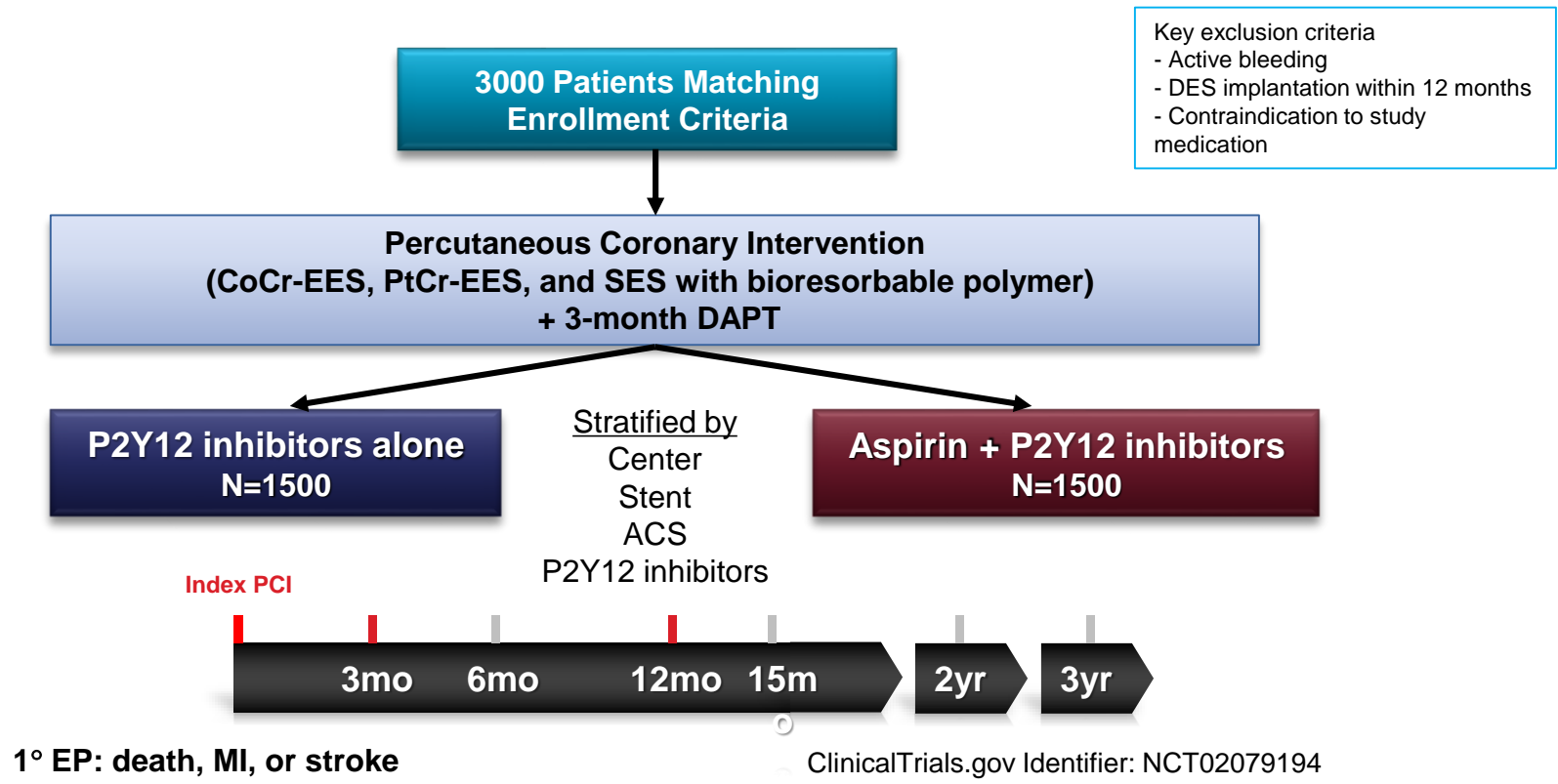




# SMART-CHOICE trial

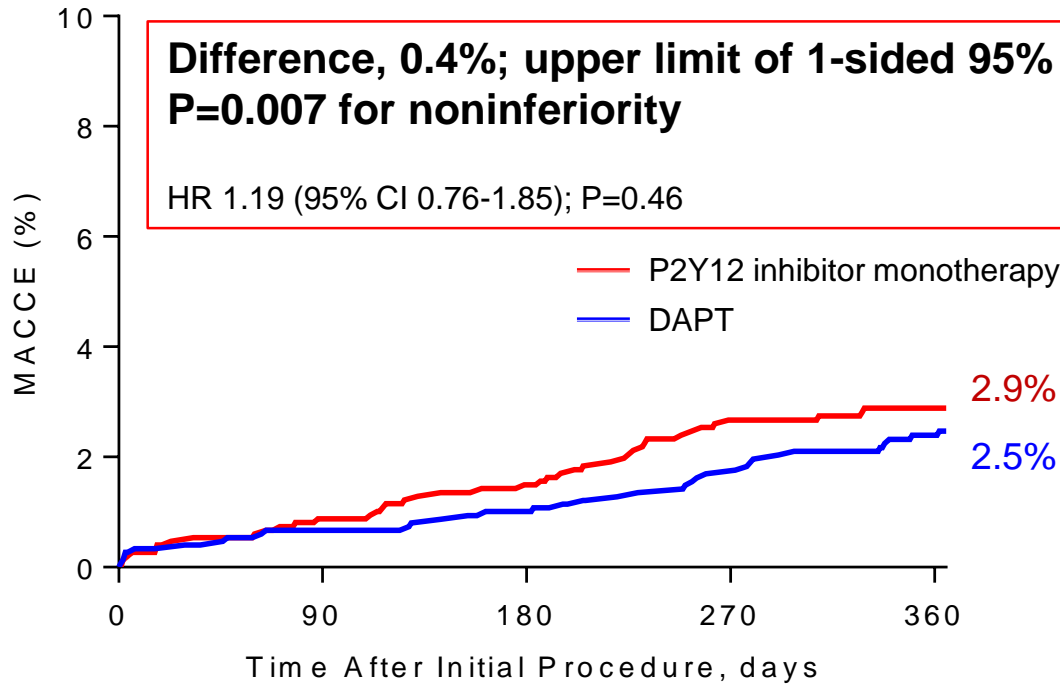
Comparison between P2Y12 Antagonist Monotherapy and Dual Antiplatelet Therapy in Patients Undergoing Implantation of Coronary Drug-Eluting Stents

A prospective, multicenter, randomized, open-label, noninferiority trial





# Primary end point (MACCE)



2.9%  
2.5%

No. at risk

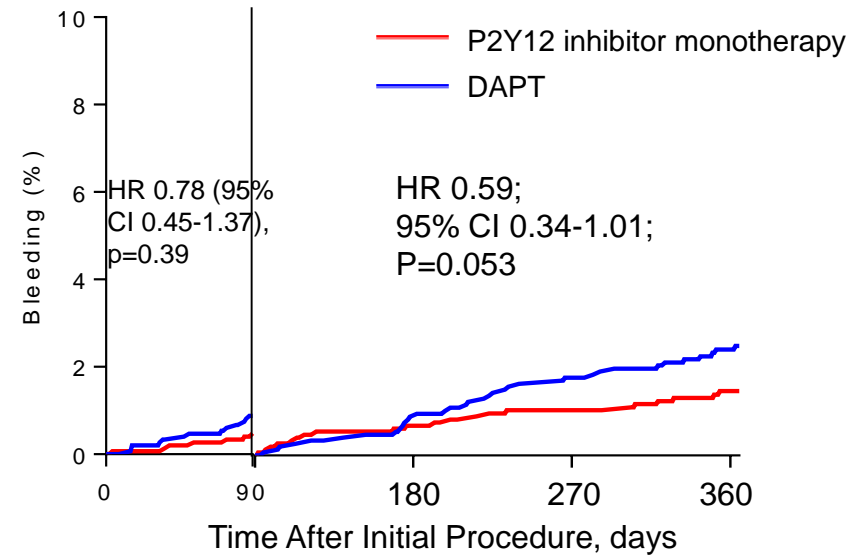
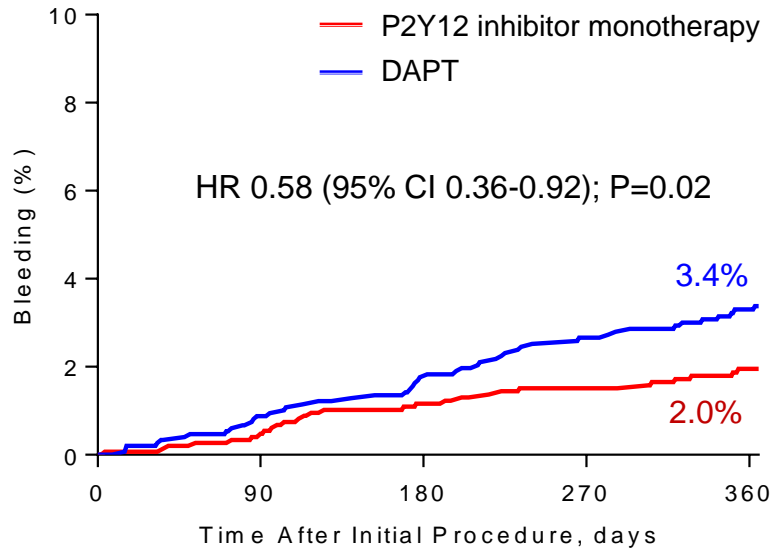
|                 |      |      |      |      |      |
|-----------------|------|------|------|------|------|
| DAPT            | 1498 | 1471 | 1454 | 1436 | 1220 |
| P2Y12 inhibitor | 1495 | 1456 | 1430 | 1402 | 1202 |

\* MACCE = A composite of all-cause death, myocardial infarction, or stroke





# Bleeding (BARC 2-5)



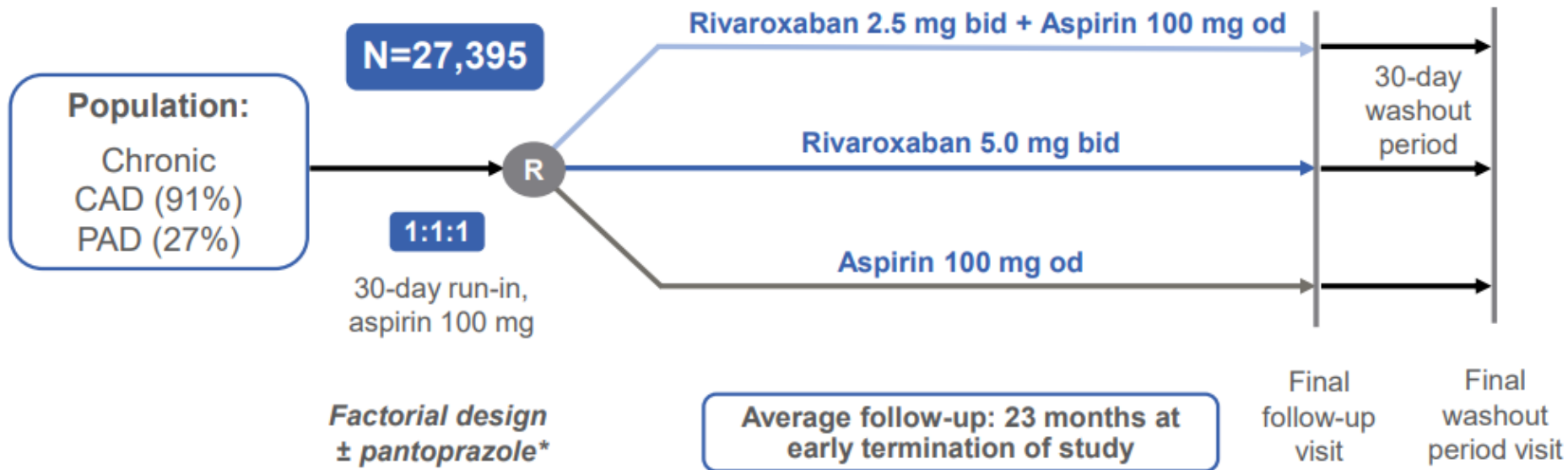
| No. at risk     | 0    | 90   | 180  | 270  | 360  |
|-----------------|------|------|------|------|------|
| DAPT            | 1498 | 1461 | 1435 | 1413 | 1197 |
| P2Y12 inhibitor | 1495 | 1456 | 1425 | 1400 | 1198 |

|      |      |      |      |      |
|------|------|------|------|------|
| 1498 | 1461 | 1435 | 1413 | 1197 |
| 1495 | 1456 | 1425 | 1400 | 1198 |



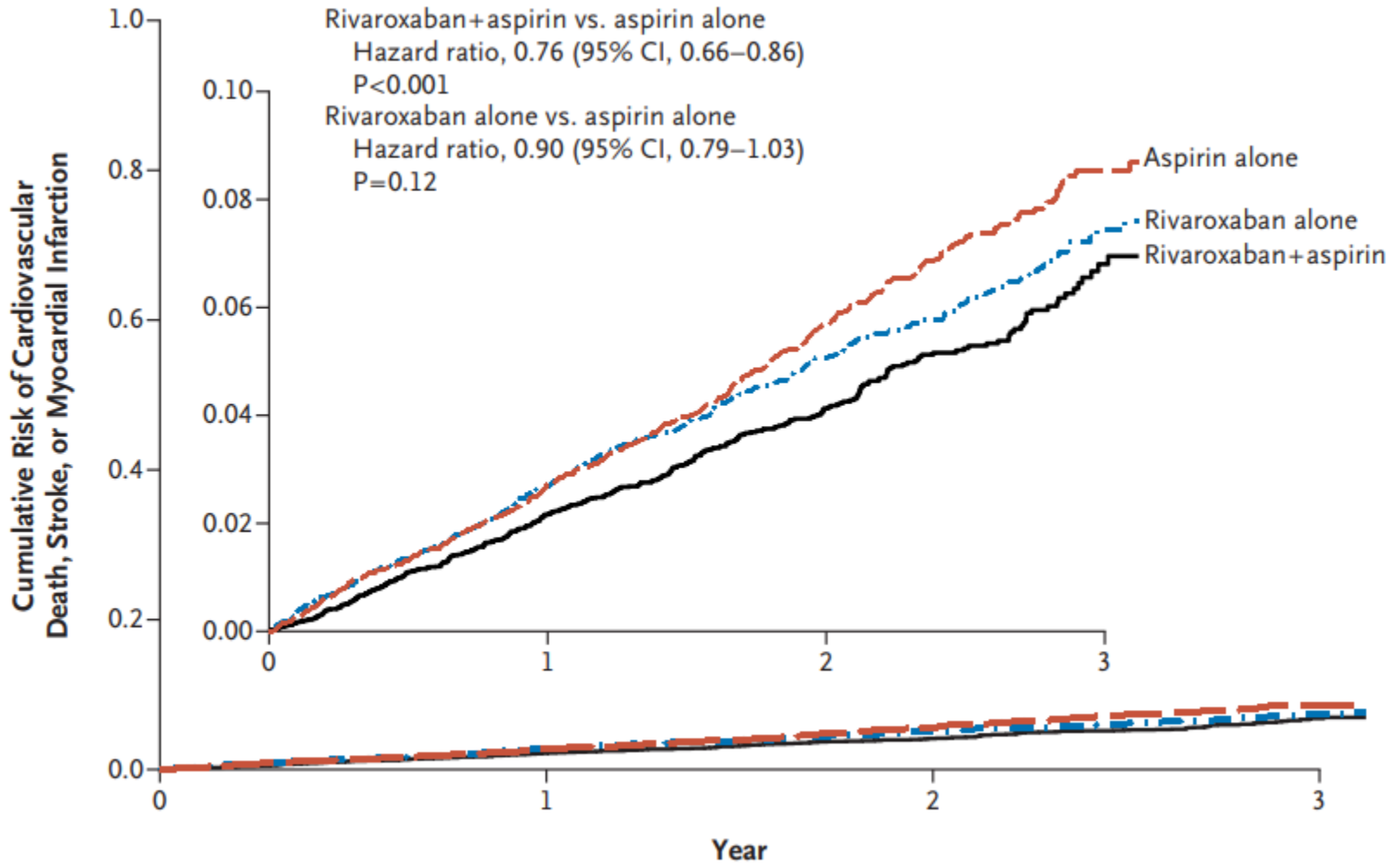
# COMPASS trial

**Objective:** To determine the efficacy and safety of rivaroxaban, vascular dose of rivaroxaban plus aspirin or aspirin alone for reducing the risk of MI, stroke and cardiovascular death in CAD or PAD





# COMPASS trial





# Summary

- ▶ Current guidelines recommend DAPT after implantation of DES
  - 12 months in patients with ACS
  - 6 months in patients with stable IHD
- ▶ Special consideration
  - Patients with high ischemic risk
    - ACS or complex PCI
  - Patients with high bleeding risk
    - PRESICE-DAPT score  $\geq 25$
- ▶ New strategies
  - P2Y12 inhibitor monotherapy after short duration DAPT
  - Aspirin + vascular dose of NOAC (rivaroxaban)

감사합니다.  
Thank you for your attention.

