

# ACUTE CORONARY SYNDROMES

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## Conflicts of Interest

*Lecturing or consulting fees from AstraZeneca, Bayer, Boehringer Ingelheim, Daiichi Sankyo, Pfizer, Sanofi*

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- **Relief of hypoxaemia**

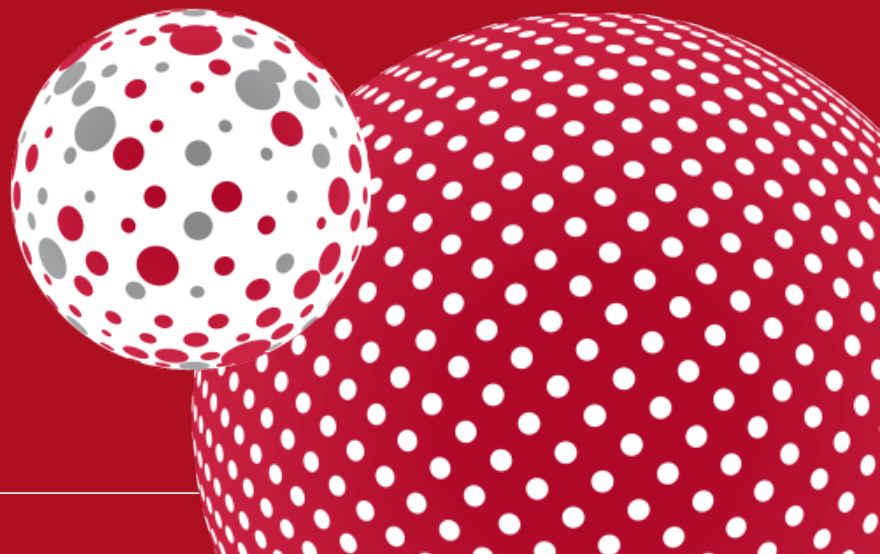
- NZOTACS

- **Antiplatelet therapy**

- ISAR-REACT 5
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# DIAGNOSIS OF MYOCARDIAL INFARCTION

HiSTORIC  
RAPID-TnT

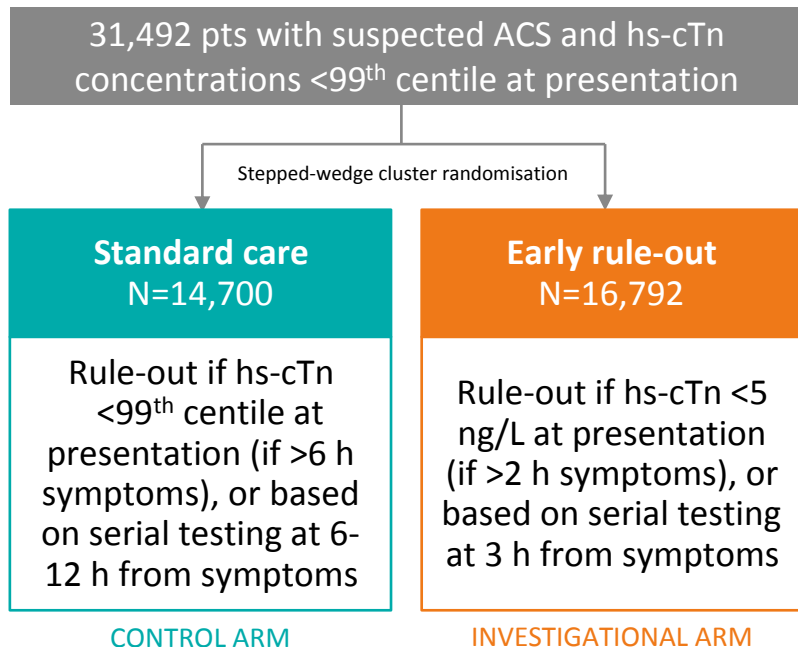


# Rule-in and rule-out algorithms

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- **The 2015 NSTE-ACS guidelines illustrate two rule-in and rule-out algorithms with very high negative predictive values using hs-cTn assays.**
  - Based on these two algorithms, MI can be ruled-out already at presentation if the hs-cTn concentration is very low, or by the combination of low baseline levels and the lack of a relevant increase within 3 hours (0/3-h triage) and 1 hour (0/1-h triage).
- **The High-STEACS trial, presented at ESC Congress in 2018, confirmed that the primary advantage of high-sensitivity tests is to rule-out rather than rule-in MI.**

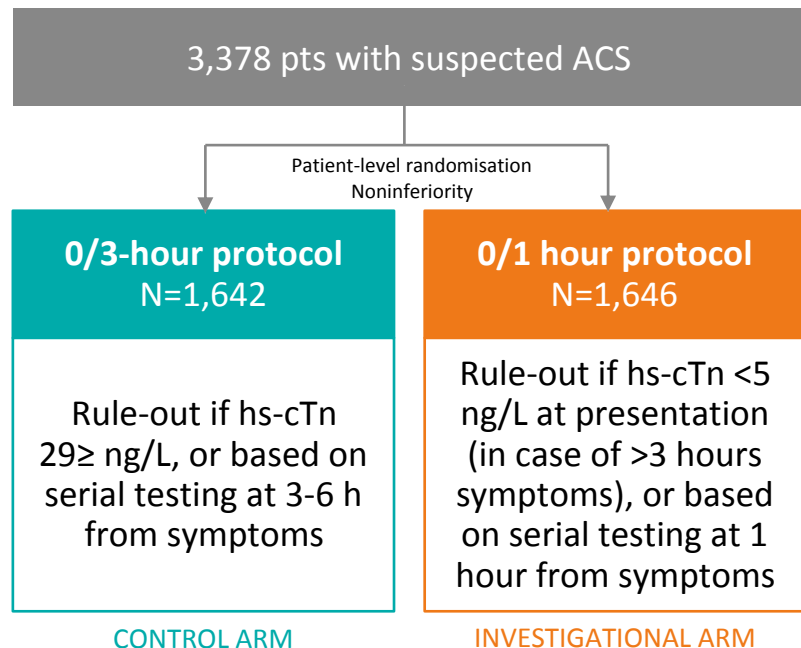
## HiSTORIC



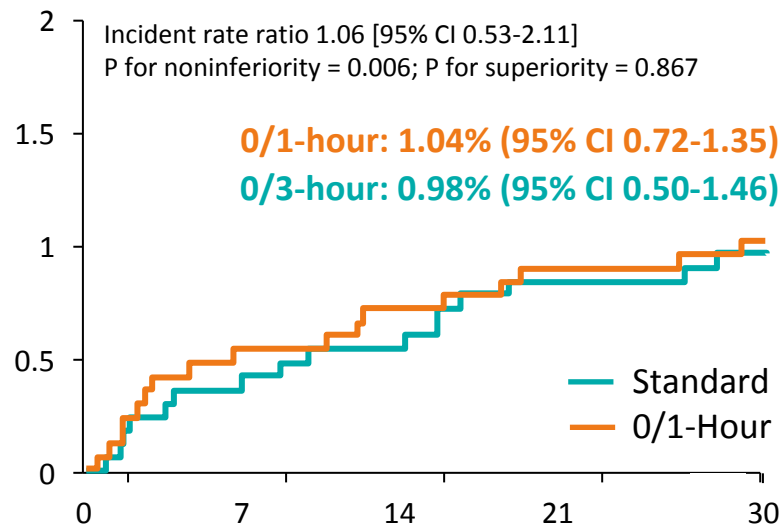
## Key findings

- **Early rule-out:**
  - Reduced the length of stay (**co-primary endpoint**) by 3.3 hours.
  - Increased the proportion of patients discharged from the ED by 57%.
- **Due to low event rate and large 95% CI, the results were inconclusive for noninferiority in CV death or MI at 30 days (co-primary endpoint), but no increase in safety outcomes was observed at 1 year.**

## RAPID-TnT

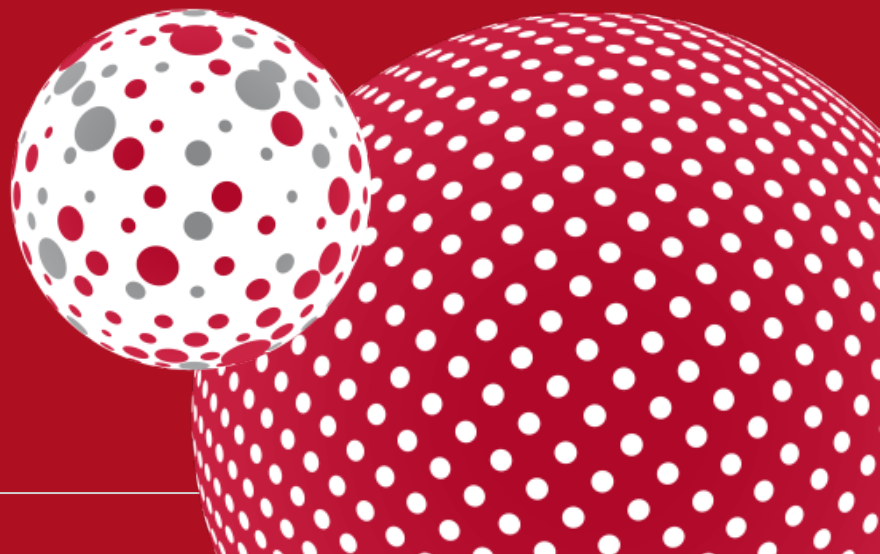


## DEATH OR MI AT 30 DAYS (PRIMARY ENDPOINT)



# RELIEF OF HYPOXAEMIA

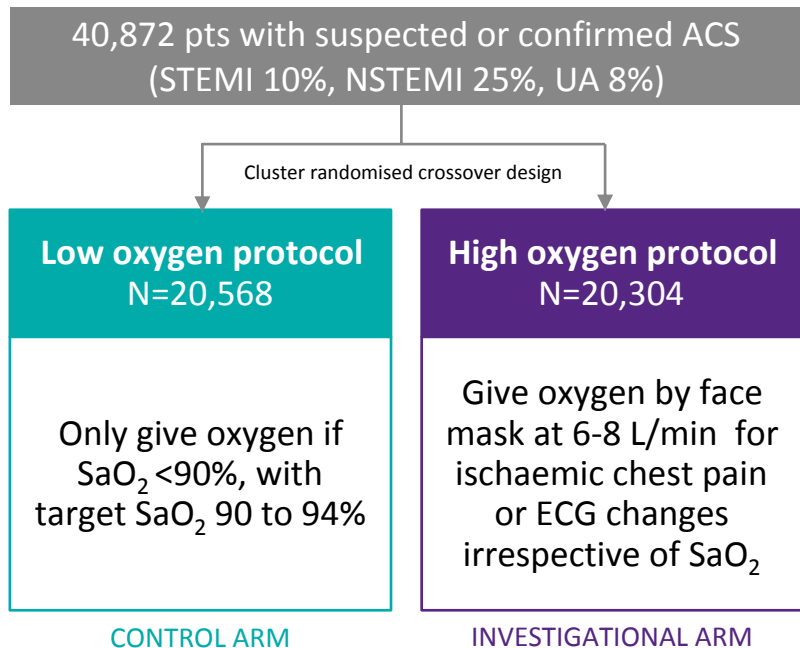
NZOTACS



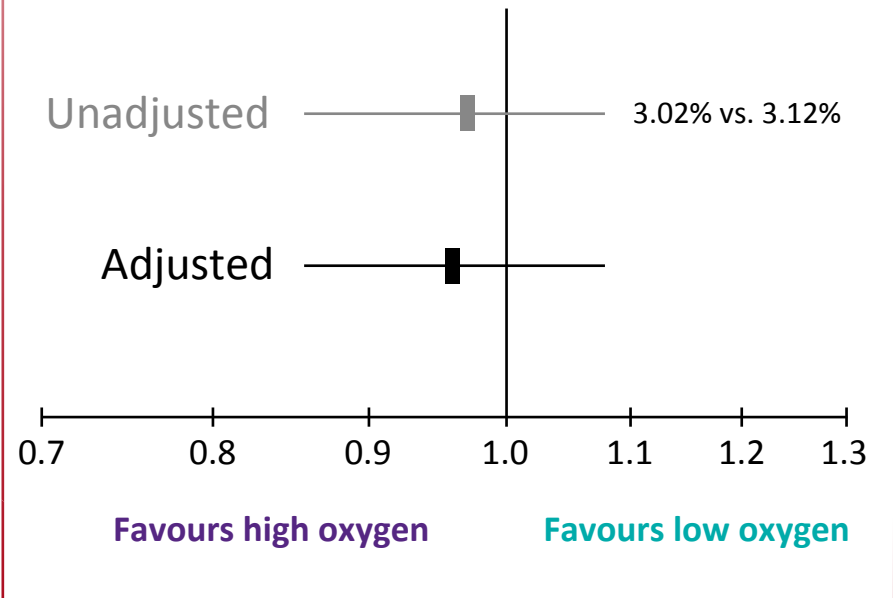
# Relief of hypoxaemia in the 2017 ESC STEMI Guidelines

| Recommendations                                                                                               | Class | Level |
|---------------------------------------------------------------------------------------------------------------|-------|-------|
| Oxygen is indicated in patients with hypoxaemia ( $\text{SaO}_2 < 90\%$ or $\text{PaO}_2 < 60 \text{ mmHg}$ ) | I     | C     |
| Routine oxygen is not recommended in patients with $\text{SaO}_2 \geq 90\%$                                   | III   | B     |

## NZOTACS



### DEATH AT 30 DAYS (PRIMARY ENDPOINT)

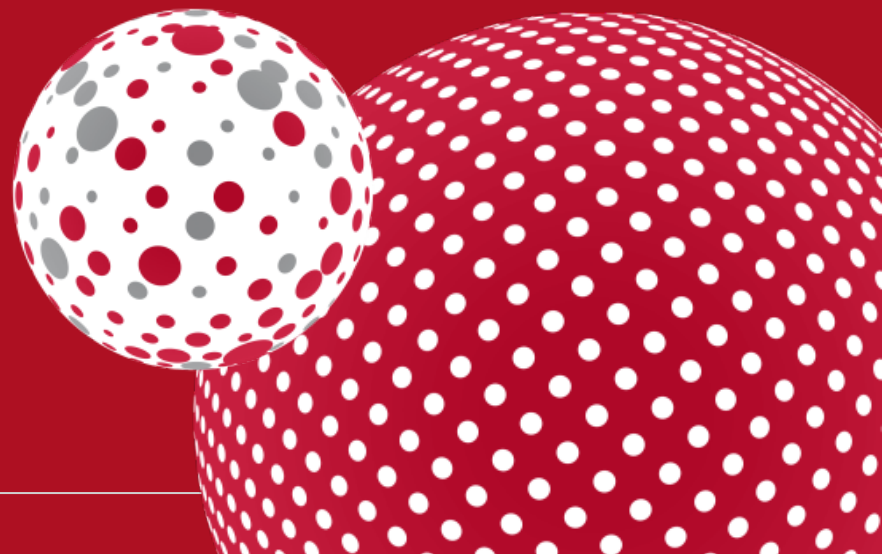


# ANTIPLATELET THERAPY

ISAR-REACT 5

POPular AGE

POPular Genetics

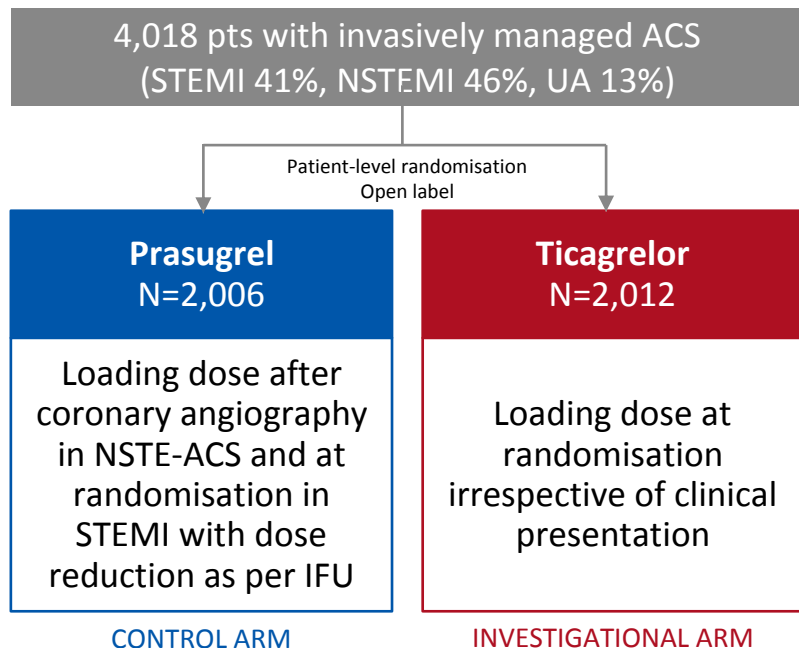


# Antiplatelet therapy for ACS in the ESC Guidelines

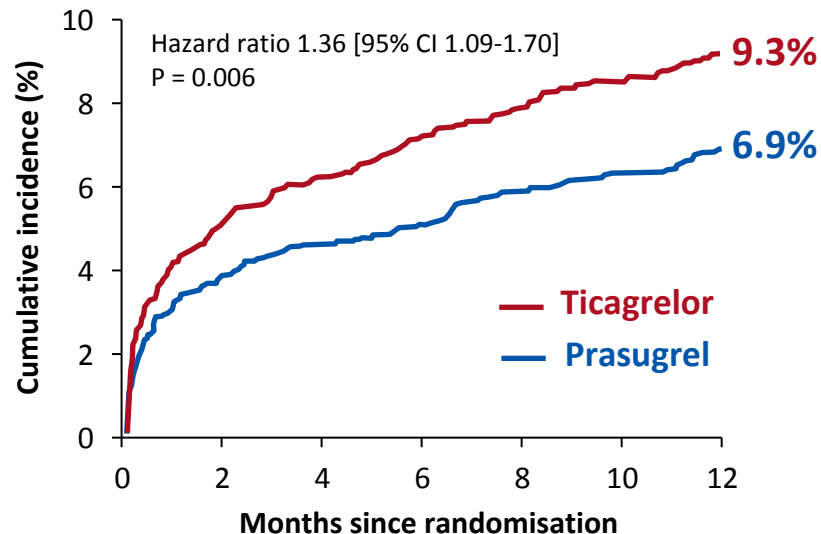
| Recommendations on P2Y <sub>12</sub> inhibitor selection                                                                                                                                                                                                                                                                                                                                                                                  | Class    | Level    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|
| In patients with ACS, ticagrelor (180 mg loading dose, 90 mg twice daily) on top of aspirin <sup>a</sup> is recommended, regardless of initial treatment strategy, including patients pre-treated with clopidogrel (which should be discontinued when ticagrelor is commenced) unless there are contraindications                                                                                                                         | <b>I</b> | <b>B</b> |
| In patients with ACS undergoing PCI, prasugrel (60 mg loading dose, 10 mg daily dose) on top of aspirin is recommended for P2Y <sub>12</sub> inhibitor-naïve patients with NSTEMI-ACS or initially conservatively managed STEMI if indication for PCI is established, or in STEMI patients undergoing immediate coronary catheterization <sup>a</sup> unless there is a high risk of life-threatening bleeding or other contraindications | <b>I</b> | <b>B</b> |

<sup>a</sup> Contraindications for ticagrelor: previous intracranial haemorrhage or ongoing bleeds. Contraindications for prasugrel: previous intracranial haemorrhage, previous ischaemic stroke or transient ischaemic attack, or ongoing bleeds; prasugrel is not recommended for patients ≥75 years of age or with a body weight <60 kg.

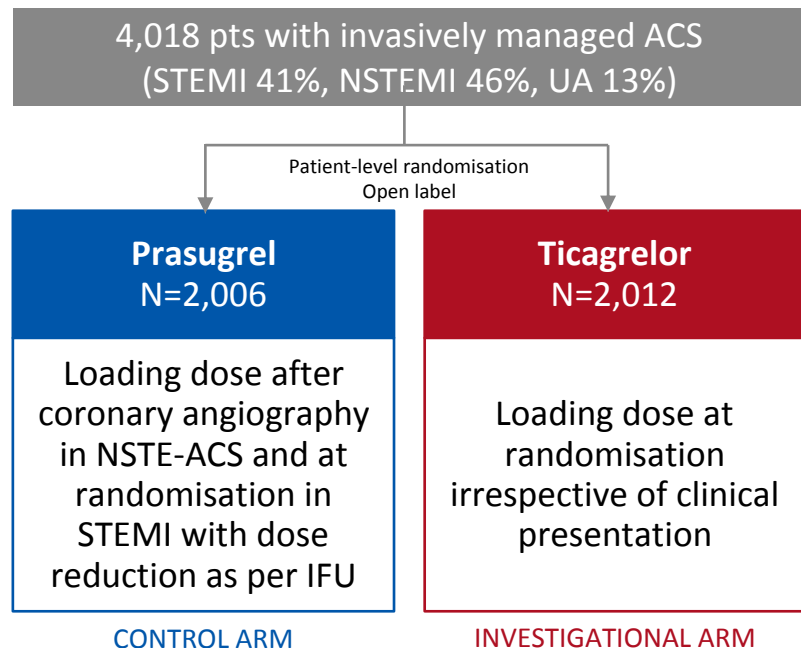
## ISAR-REACT 5



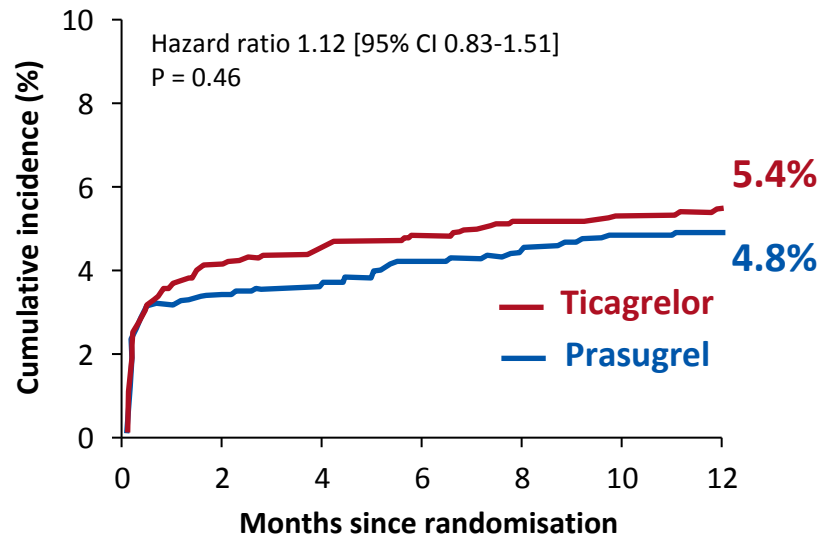
### DEATH, MI OR STROKE AT 12 MONTHS (PRIMARY ENDPOINT, ITT)



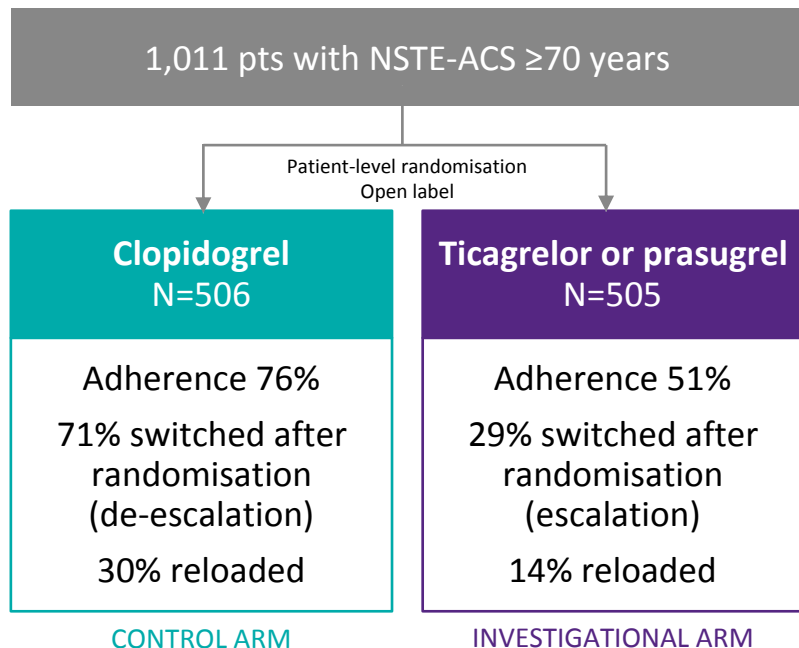
## ISAR-REACT 5



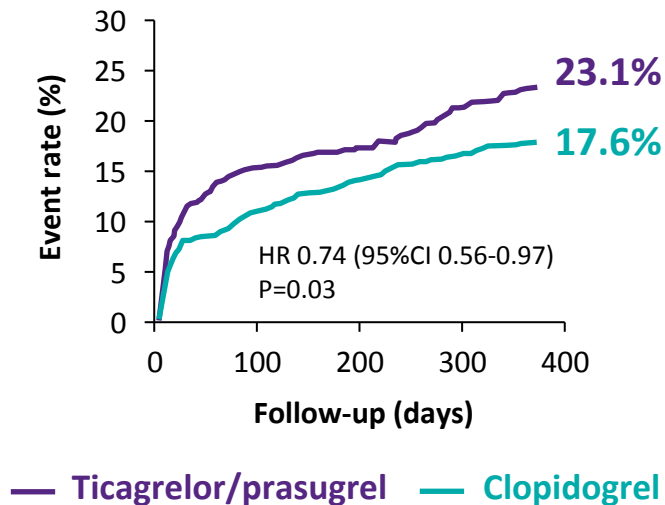
### ● BARC TYPE 3, 4, 5 BLEEDING (SAFETY ENDPOINT, mITT)



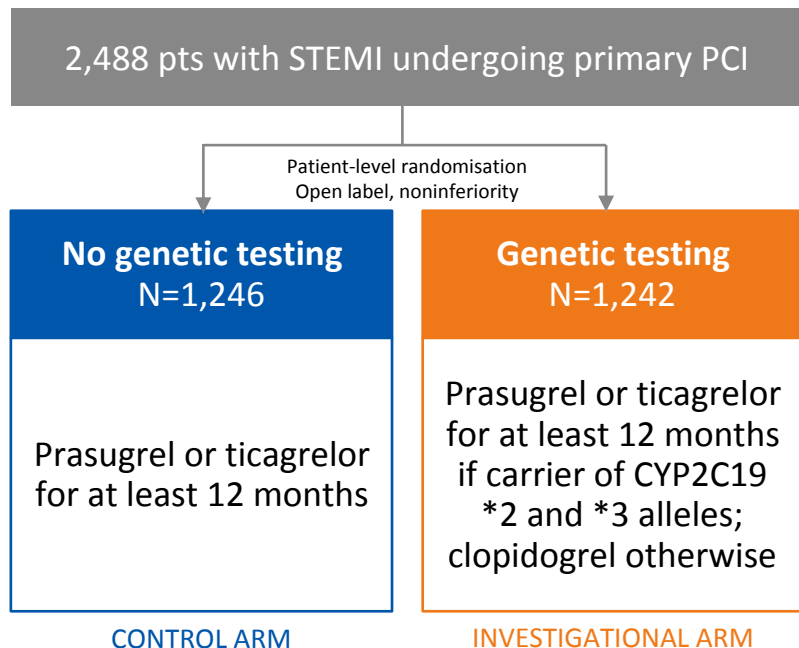
## POPular AGE



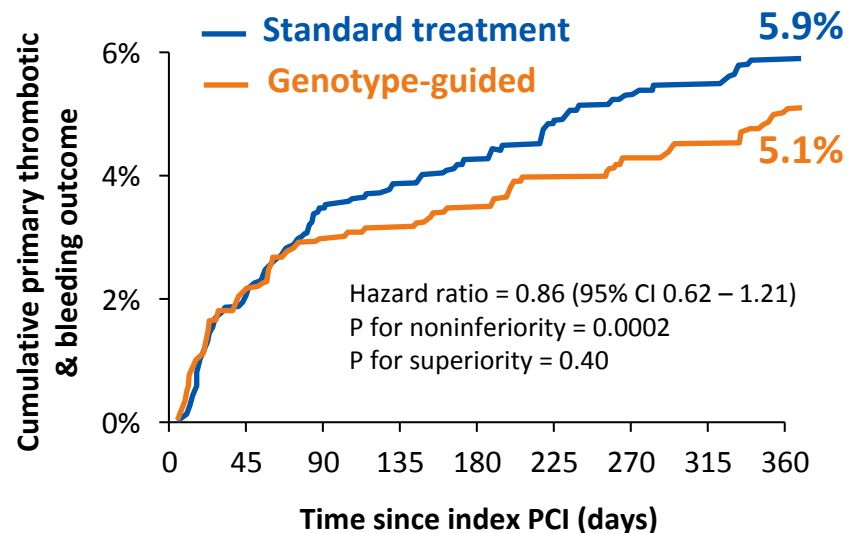
### PLATO MAJOR OR MINOR BLEEDING AT 12 MONTHS (PRIMARY ENDPOINT)



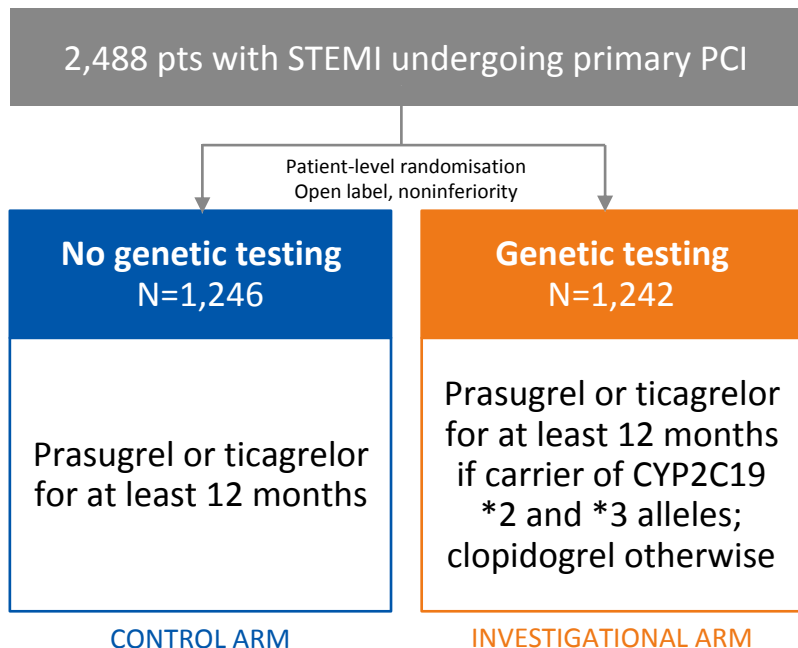
## POPular Genetics



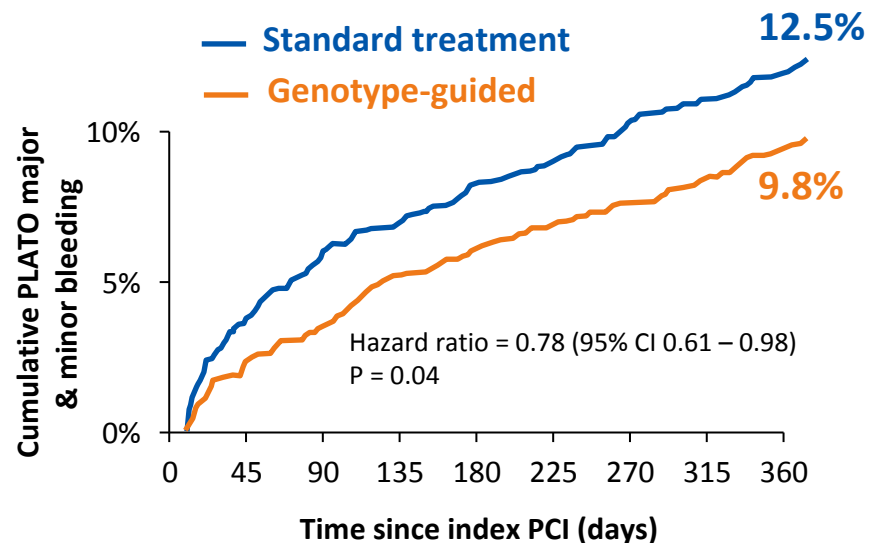
ALL-CAUSE DEATH, RECURRENT MI, DEFINITE ST, STROKE, PLATO MAJOR BLEEDING AT 12 MONTHS



## POPular Genetics



### PLATO MAJOR OR MINOR BLEEDING AT 12 MONTHS (CO-PRIMARY ENDPOINT)



## ● Diagnosis of myocardial infarction

- **HiSTORIC** and **RAPID-TnT**: Early rule-out is safe and reduces congestion at the ED.

## ● Relief of hypoxaemia

- **NZOTACS**: No need for routine oxygen therapy for patients with suspected ACS who do not have hypoxaemia.

## ● Antiplatelet therapy

- **ISAR-REACT 5**: Better ischaemic outcomes and similar bleeding with a prasugrel-based strategy compared with a ticagrelor-based strategy in invasive ACS.
- **POPULAR AGE**: Less bleeding with clopidogrel in a trial specific to elderly patients.
- **POPULAR Genetics**: Genetic testing guidance is noninferior to standard therapy with prasugrel or ticagrelor in STEMI, and reduces bleeding.