

# Havas AE Intern Written Test Question

- **Havas AE Intern Written Assignment**
- Please redesign and refine the content of the 11-slide presentation.
- **Design Requirements:**
- Use the blue color palette of the 2024 American College of Cardiology (ACC 2024) as the primary visual theme. 
- Ensure a clean, well-structured, and visually comfortable layout; avoid using too many colors or font styles within the same presentation.
- Apply consistent typography throughout the deck: Microsoft YaHei for Chinese text and Arial for English text.
- Standardize title font size, style, and placement; keep body text font sizes consistent. Font hierarchy should reflect content priority (e.g., title > subtitle > body text), with sizes decreasing accordingly.
- Maintain consistent use of punctuation, spacing (noting differences between Chinese and English spacing), letter spacing, and line spacing across all slides.

# Coronary artery disease and Percutaneous Interventions at the ACC 2024

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# Disclosures

- **Research grants** : Amarin, Sanofi
- **Clinical Trials (Steering committee, CEC, DSMB)** : Amarin, Amgen, AstraZeneca, Bayer, BMS, Idorsia, Janssen, Novartis, NovoNordisk, PhaseBio, Pfizer, Sanofi
- Senior Associate Editor at ***Circulation***
- CMO Bioquantis

# CAD and Percutaneous Interventions at ACC 2024

- Impella in Cardiogenic Shock: **the DAN-GER trial**
- Preventive stenting of vulnerable lesions: **PREVENT**
- Coronary sinus reducer in refractory angina: **ORBITA COSMIC**
- Ticagrelor monotherapy 1-month post PCI in ACS : **ULTIMATE DAPT**
- Routine Beta blockers after MI without HF or LV dysfunction: **REDUCE AMI**

**ACC.24**

One-month Ticagrelor Monotherapy After  
PCI in Acute Coronary Syndromes:  
**Principal Results From the Double-blind,  
Placebo-controlled ULTIMATE-DAPT Trial**

***Gregg W Stone MD***

Icahn School of Medicine at Mount Sinai  
on behalf of Shao-Liang Chen and the ULTIMATE-DAPT Investigators

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ClinicalTrials.gov number: NCT03971500

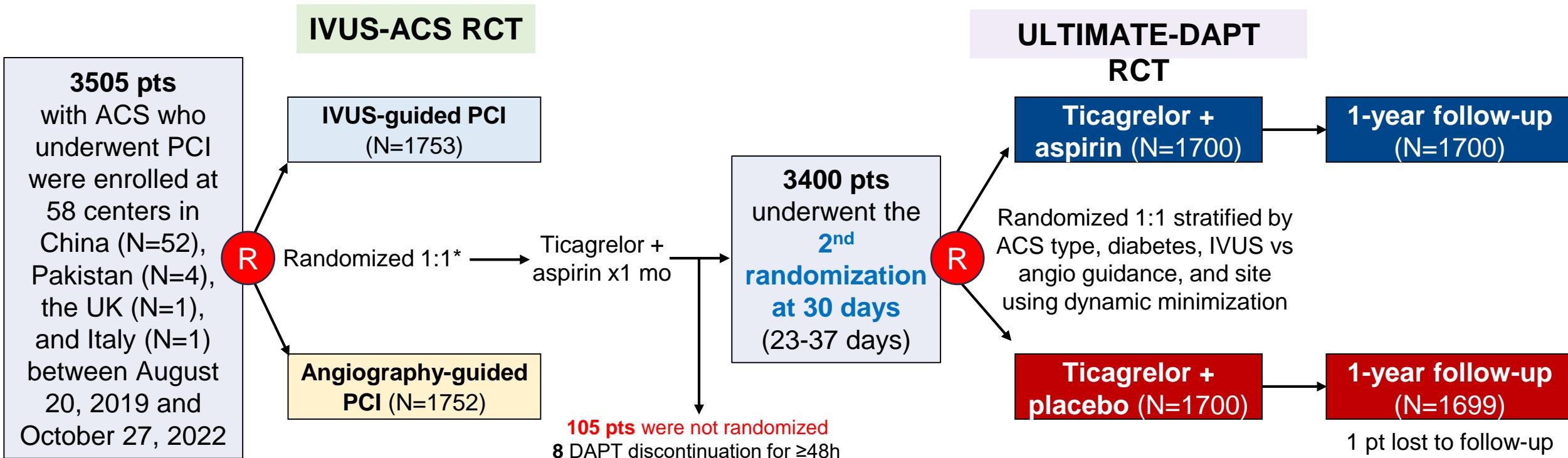


AMERICAN  
COLLEGE of  
CARDIOLOGY

# Background

- International guidelines currently recommend DAPT with aspirin plus a potent P2Y<sub>12</sub> receptor inhibitor for 12 months in most patients presenting with an ACS treated with PCI to prevent MI and stent thrombosis
- Limited data exist regarding the use of single antiplatelet therapy with a potent P2Y<sub>12</sub> inhibitor starting 1 month after PCI in ACS, and no such trials have been placebo-controlled

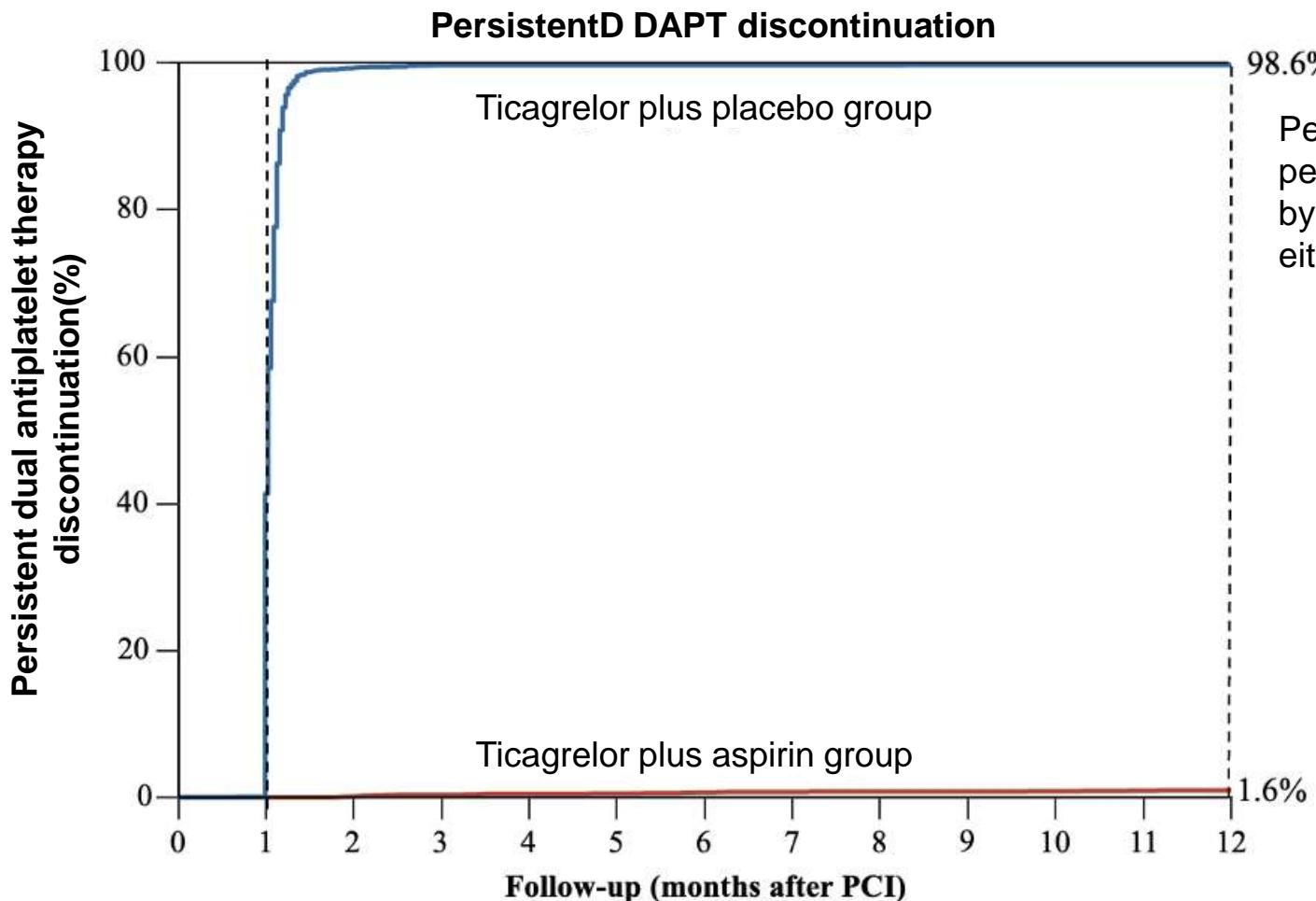
# 2x2 Randomization and Study Flowchart



\*Patients and all personnel interacting with the patient after leaving the cath lab were blinded to randomized assignment

\*Death, stroke, STEMI, definite ST, or clinically-driven TVR

# DAPT Adherence During Follow-up



Persistent DAPT discontinuation was defined as permanent discontinuation of either aspirin as dictated by the study protocol or non-directed discontinuation of either aspirin or ticagrelor for >60 days.

During FU a reduction in ticagrelor from 90 mg to 60 mg bid was required in 12 pts (0.7%) treated with ticagrelor plus placebo and 16 pts (0.9%) treated with ticagrelor plus aspirin. Conversion from ticagrelor to clopidogrel was required in 22 (1.3%) and 19 (1.1%) pts respectively. Unblinding was required during follow-up in 39 pts (1.1%) who had a BARC 3 or 5 bleed (11 in the ticagrelor alone group and 28 in the ticagrelor plus aspirin group) and in 8 pts (0.2%) who had a stent thrombosis (3 in the ticagrelor alone group and 5 in the ticagrelor plus aspirin group).

## No. at risk

Ticagrelor plus placebo	1700	1002	13	6	6	6	6	6	6	6	6		
Ticagrelor plus aspirin	1700	1700	1697	1692	1688	1686	1683	1679	1676	1676	1673	1672	1672

# Bleeding Endpoints

Between 1- and 12-months post-PCI	Ticagrelor plus placebo (N = 1700)	Ticagrelor plus aspirin (N = 1700)	Hazard ratio (95% CI)	P-value
<b>Primary endpoint: Clinically-relevant bleeding (BARC types 2, 3, or 5)</b>	35 (2.1%)	78 (4.6%)	0.45 (0.30 – 0.66)	<0.0001
<b>Major bleeding</b>				
BARC types 3 or 5	11 (0.7%)	28 (1.7%)	0.39 (0.19 – 0.79)	0.009
TIMI major or minor	11 (0.7%)	27 (1.6%)	0.41 (0.20 – 0.82)	0.01
Major	8 (0.5%)	19 (1.1%)	0.42 (0.18 – 0.96)	0.04
Minor	3 (0.2%)	8 (0.5%)	0.39 (0.10 – 1.46)	0.16
GUSTO moderate, severe or life-threatening	8 (0.5%)	19 (1.1%)	0.42 (0.18 – 0.96)	0.04
Moderate	3 (0.2%)	10 (0.6%)	0.30 (0.08 – 1.10)	0.07
Severe or life-threatening	5 (0.3%)	9 (0.5%)	0.56 (0.19 – 1.66)	0.29
ISTH major bleeding	8 (0.5%)	21 (1.2%)	0.38 (0.17 – 0.86)	0.02
<b>BARC types 1-5</b>				
1	8 (0.5%)	12 (0.7%)	0.67 (0.27 – 1.63)	0.37
2	24 (1.4%)	50 (2.9%)	0.48 (0.29 – 0.78)	0.003
3	10 (0.6%)	24 (1.4%)	0.42 (0.20 – 0.88)	0.02
5	1 (0.1%)	4 (0.2%)	0.25 (0.03 – 1.98)	0.20

# Limitations

1. The primary efficacy endpoint included minor bleeding (BARC type 2)
  - However, major bleeding was also significantly reduced with ticagrelor monotherapy (BARC types 3 or 5, TIMI major or minor, GUSTO and ISTH)
2. Non-inferiority for MACCE was tested with an absolute margin of 2.5%. Given the lower observed ischemic event rate in the control group than anticipated (3.7% vs. 6.2%), this relative margin is wide
  - Given the 95% CI of the observed difference, it is likely that the absolute MACCE rate with ticagrelor monotherapy is <1.2% greater than with ticagrelor + aspirin
3. ~40% of pts had biomarker-negative unstable angina
  - hs-troponin assays were not widely available in China and Pakistan during the enrollment period, and it is likely that many of these pts had NSTEMI
4. 88.1% of pts were from China, possibly affecting the generalizability of the results

# Conclusions and Clinical Implications

- The present results demonstrate that in pts with ACS treated with PCI with contemporary DES who are free from major adverse ischemic and bleeding events after 1 month on DAPT, treatment with ticagrelor alone between 1 and 12 months will decrease clinically-relevant and major bleeding while providing similar protection from MACCE compared with ticagrelor plus aspirin
- These results, in concert with prior trials, warrant updating the guidelines and change in practice to treat most pts with ACS after PCI with 1-month DAPT only followed by conversion to SAPT with a potent P2Y<sub>12</sub> inhibitor (with the strongest evidence to date supporting ticagrelor)

Acronym	Clinical Trials.gov No	No.of Patients	Trial Location	Patients'Condition	Question	Primary End Point	Expected Completion
REDUCE-AMI	NCT03278509	500	Sweden,Estonia, and NewZealand	Acute MI with LVEF>50% and receipt of angi ograph	Beta-blocker vs.no beta-blocker	Death from any cause or new MI	Completed
DANBLOCR	NCT03778554	2760	Denmark	s2 wk after MI and LVEF >40%	Beta-blocker vs.no beta-blocker	Death from any cause,recurrent ML, revascularization with PClo CABG, ischemic stroke,incident heart failure,malignant ventricular arrhythmia,or resuscitated cardiac arrest	2024
BETAMI	NCT03646357	290	Norway	Type 1 MI treated with PCI or lysis	Beta-blocker vs.no beta-blocker	Death from any cause,recurrent ML heart failure,coronary revascular zation,ischemic stroke,malignant ventricular arrnythmia,or esuscitated cardiac arrest	2024
REBOOT	NCT03596385	8468	Spain and Italy	MI without heart failure and with LVEF>40%	Beta-blocker vs.no beta-blocker	MACE+	2024
SMART DECISION	NCT04769362	254	South Korea	MI without heart failure and with LVEF>40%	Continuation of beta- blocker vs.discon tinuation	MACE+	2025
A $\beta$ YSS	NCT03498066	3700	France	STEMI or NSTEMI treated with beta-blocker, without heart failure or LVEF<40%	Continuation of beta-blockervs.discon- tinuation at>6 mo after MI	Death from any cause,MI,stroke,or hospitalization for cardiovascular causes	2024
ABBREVIATE	NCT05081999	8500	Canada	Stable ischemic heart disease,without left ventricular dysfunction or heart failure	Continuation of beta- blocker vs.discon- tinuation	Death from any cause,nonfatal MI hospitalization for resuscitated cardiac arrest,unstable angina eading to urgent revasculariza- tion,or heart failure	2026

CABG denotes coronary-artery bypass grafting,LVEF left ventricular ejection fraction, MACE major adverse cardiac events, MI myocardial infarction, NSTEMI, non-ST-segment eleva- tion myocardial infarction,PCI percutaneous coronary intervention, and STEMI ST-seg mment elevation myocardial infarction.

ABBREVIATE denotes De-Adoption of Beta-Blockers in Patients with Stable Ischemic t Heart Disease,ABYSS Beta-Blocker Interruption after Uncomplicated Myocardial Infarction.

BETAMI Beta-Blocker Treatment after Acute Myocardial Infarction in Patients without Reduced Left Ventricular Systolic Function,DANBLOCK Danish Trial of Beta-Blocker Treatment after Myocardial Infarction without Reduced Ejection Fraction,REBOOT Treatment wi th Beta-Blockers after Myocardial Infarction without Reduced Ejection Fraction,REDUCE-AMI Randomized Evaluation of Decreased Usage of Beta-Blockers after Acute Myocardial Infarction, and SMART DECISION Long-term Beta-Blocker Therapy after Acute Myocardial Infarction.

MACE was defined as death from any cause, MI, or hospitalization for heart failure.