TICO-STEMI: A Randomized Trial of Ticagrelor Monotherapy vs. Ticagrelor With Aspirin in STEMI

Late-Breaking Clinical Trial at 2020 TCT Connect

Byeong-Keuk Kim, MD, PhD

On the behalf of the TICO trial investigators

Yonsei University Severance Cardiovascular Hospital College of Medicine, Seoul, Korea

Disclosure Statement of Financial Interest

I, Byeong-Keuk Kim DO NOT have a financial interest/arrangement or affiliation with one or more organizations that could be perceived as a real or apparent conflict of interest in the context of the subject of this presentation.

Background

- From the randomized trials,[1-3] the ***potent P2Y12 inhibitor monotherapy after brief period of DAPT*** has been considered as the optimal treatment strategy for high-risk patients balancing the ischemia and bleeding.

1. Vranckx P, et al. GLOBAL-LEADERS. Lancet 2018;392:940-9.
2. Mehran R,, et al. TWILIGHT. N Engl J Med 2019;381:2032-42.
3. Kim BK, et al. TICO. JAMA 2020;323:2407-16.

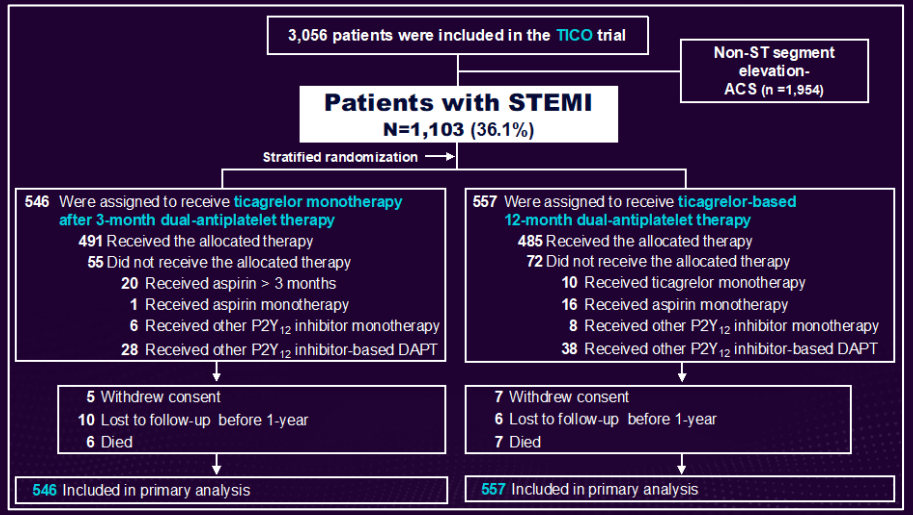
- ***However, prior studies regarding potent P2Y12 inhibitor monotherapy excluded the patients with STEMI, but the recent TICO trial*** *(Ticagrelor Monotherapy After 3 Months in the Patients Treated With New Generation Sirolimus-eluting Stent for Acute Coronary Syndrome)* ***targeting for ACS patients included all subsets of ACS, including STEMI.***[3]

	GLOBEAL LEADERS[1]	TWILIGHT[2]	TICO[3]
ACS, %	47%	65%	**100%**
STEMI, %	0% (excluded)	0% (excluded)	**36% (included)**
DAPT duration after PCI	1 M	3 M	3 M

TICO-STEMI study

- Objectives. To assess the safety and feasibility of **ticagrelor monotherapy after 3 months of DAPT in STEMI patients** treated with ultrathin bioresorbable polymer sirolimus-eluting stents, using a prespecified subgroup analyses of the STEMI cohort of the TICO trial

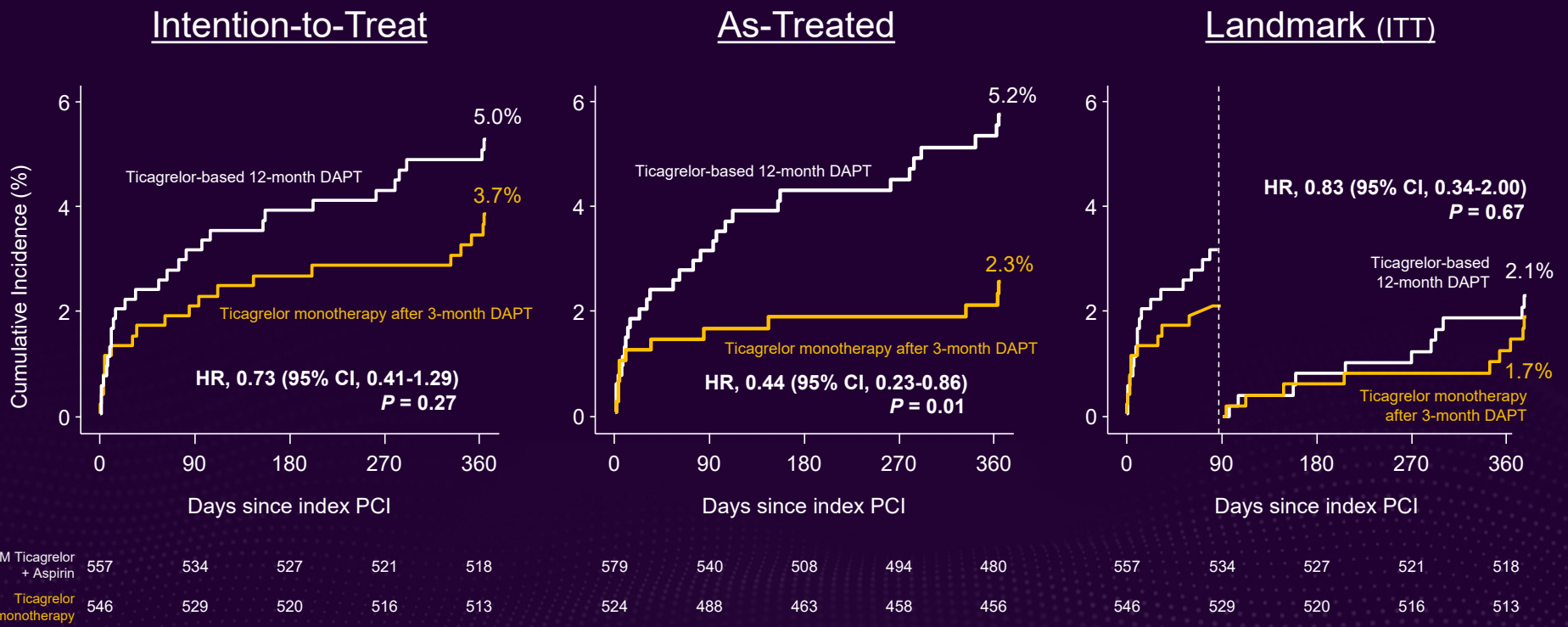
TICO trial …
- A prospective, randomized, multi-center trial conducted at 38 centers in South Korea
- All types of ACS (UA, 30.3%; NSTEMI, 33.6%; and STEMI, 36.1%) were enrolled.
- According to the presence of STEMI, stratified randomization was performed.



- **Primary outcome:**

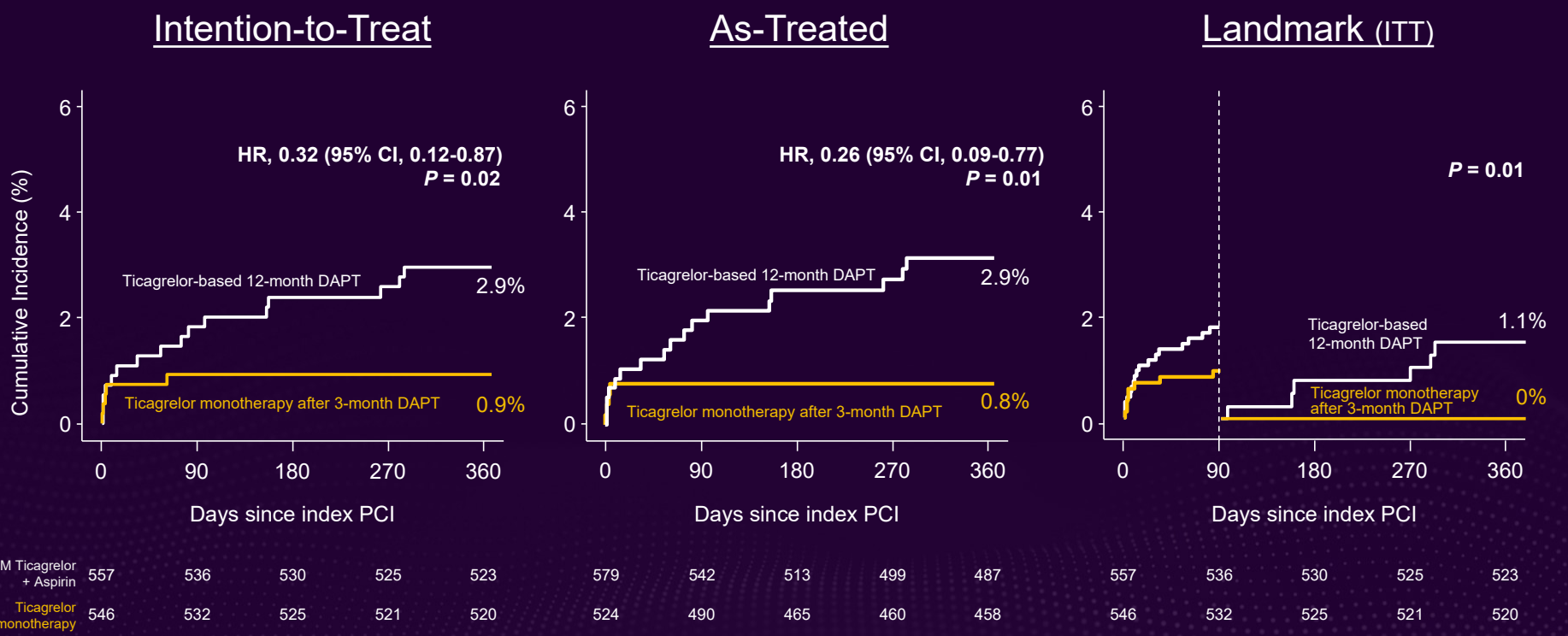
Net adverse clinical event (NACE)
including bleeding & ischemic outcomes
- **Bleeding outcomes – TIMI major bleeding**
- **Ischemic outcomes – Major adverse cardiac & cerebrovascular event (MACCE); all-cause death, MI, stent thrombosis, stroke, or TVR**

Primary outcome, *NACE* at 12-months

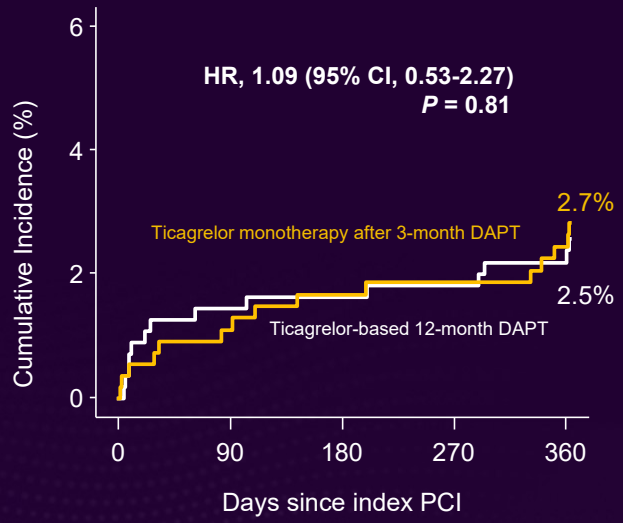


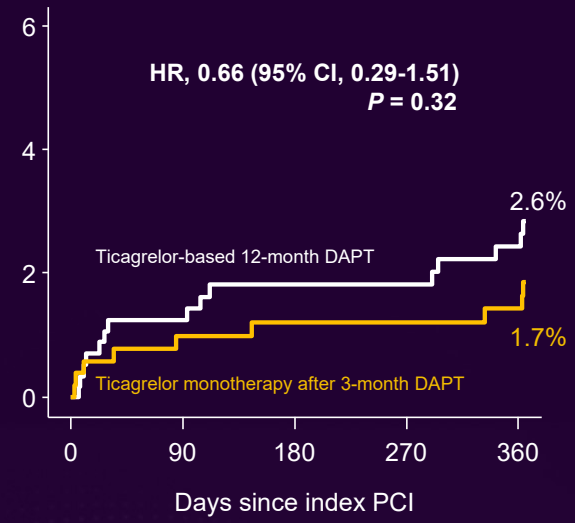
Bleeding outcome;

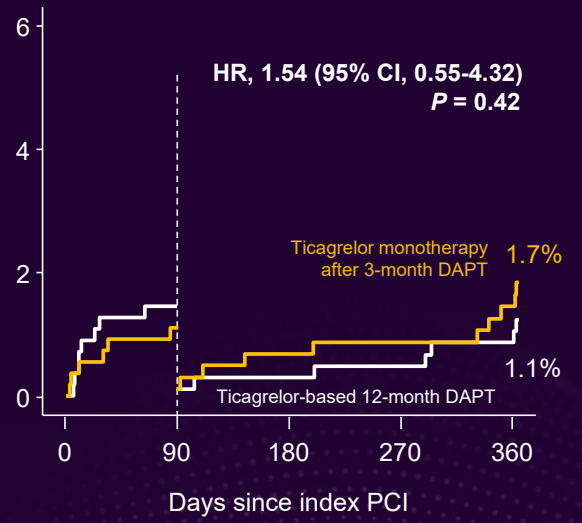
TIMI Major bleeding at 12 months



Ischemic outcome;
Major Adverse Cardiac and Cerebrovascular Event at 12 months





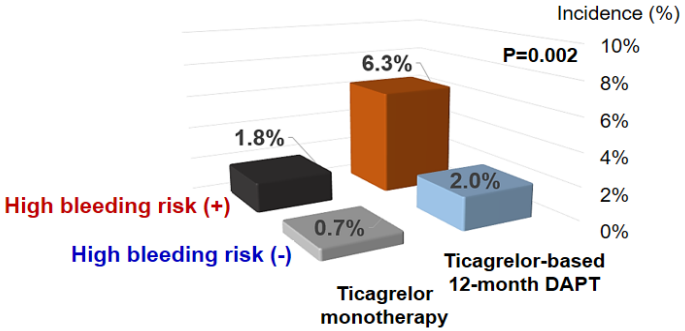


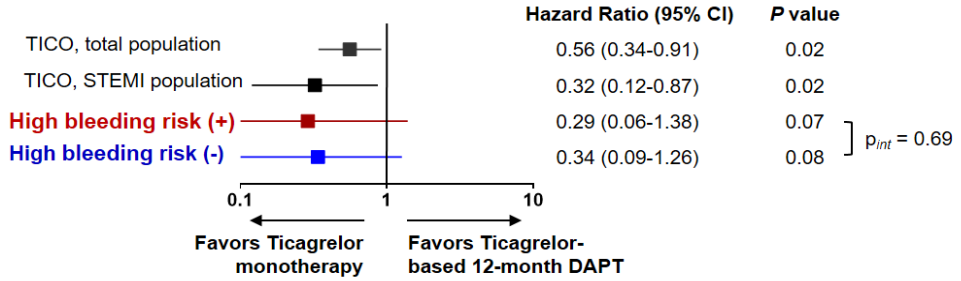
12M Ticagrelor + Aspirin	557	543	539	534	532	579	546	515	502	489	557	543	539	534	532
Ticagrelor monotherapy	546	534	525	521	518	524	492	467	462	460	546	534	525	521	518

Post-hoc analyses in patients/ lesions with high risks

Major bleeding

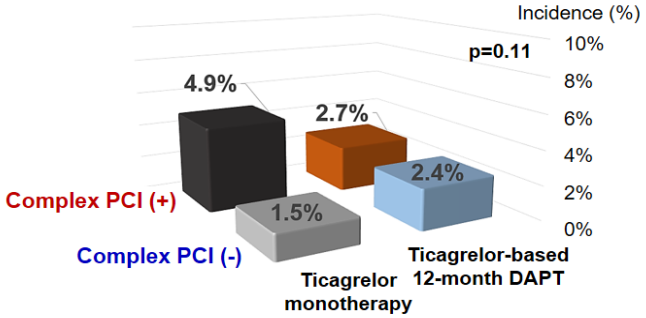
- High bleeding risk (+) PRECISE-DAPT score ≥ 25

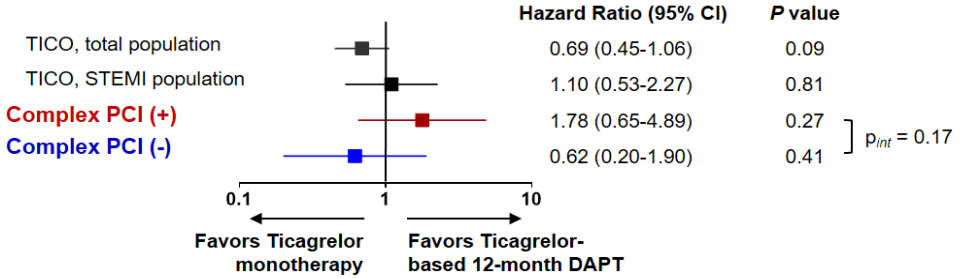




Major adverse cardiac and cerebrovascular event

- Complex PCI (+) 3 vessels treated; ≥3 lesions treated; total stent length >60 mm; bifurcation c 2 stents; left main PCI; or CTO as target lesions





Conclusions

This is the first report assessing the feasibility of the ticagrelor monotherapy after short-term DAPT for STEMI patients with DES.

Among patients with *STEMI treated with ultrathin bioresorbable polymer sirolimus-eluting stents*,

- ***Ticagrelor monotherapy after 3-month DAPT*, compared with ticagrelor-based 12-month DAPT, resulted in a reduced risk of major bleeding.**
- **As for MACCE, there were no significant differences between the two treatment groups, without significant interaction with clinical presentation in this study.**
- **However, care should be taken in applying these results to the overall STEMI population, especially those at high risk for ischemia.**