

# The Selection of P2Y<sub>12</sub> Receptor Inhibitor for Patients with CYP2C19 Intermediate Metabolizers after Percutaneous Coronary Intervention

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## Purpose

To investigate the effect of selection of P2Y<sub>12</sub> receptor antagonist on clinical prognosis of patients with CYP2C19 intermediate metabolizers after percutaneous coronary intervention(PCI)

## Methods

A retrospective study was conducted in 414 patients who underwent PCI and identified as intermediate metabolizers by CYP2C19 testing from September 2017 to January 2019. Patients were prescribed aspirin plus either ticagrelor with 90mg twice daily (defined as ticagrelor group) or clopidogrel with 75mg daily (defined as clopidogrel group) and followed-up for at least 12 months. Risk of major adverse cardiovascular event(MACE) and bleeding events over one year was evaluated.

## Results

Kaplan-Meier curve showed that the cumulative bleeding rate was higher in the ticagrelor group than in the clopidogrel group (Log Rank  $P=0.047$ ). This phenomenon was driven by trivial bleeding incidence, which was higher in the ticagrelor group (8.33% vs 14.81%,  $P=0.039$ ).

However, after adjusting for baseline characteristics, it was BMI (HR=1.108, 95%CI: 1.011-1.215,  $P=0.029$ ), but not P2Y<sub>12</sub> receptor inhibitor, that determined as independent factor of bleeding event. No difference was observed in the incidence of MACE.

**Table 1** Univariate and multivariate COX regression analysis of bleeding events

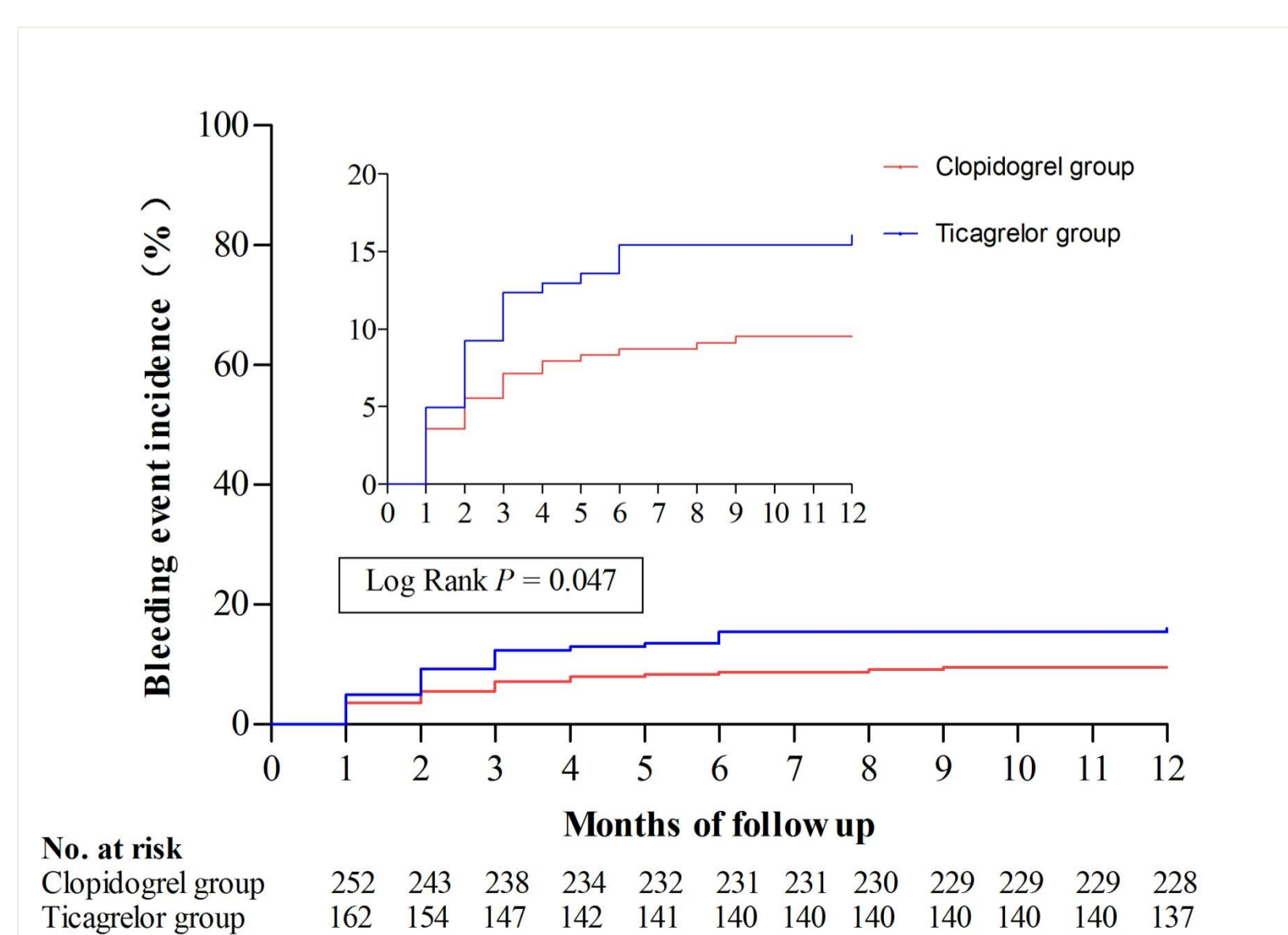
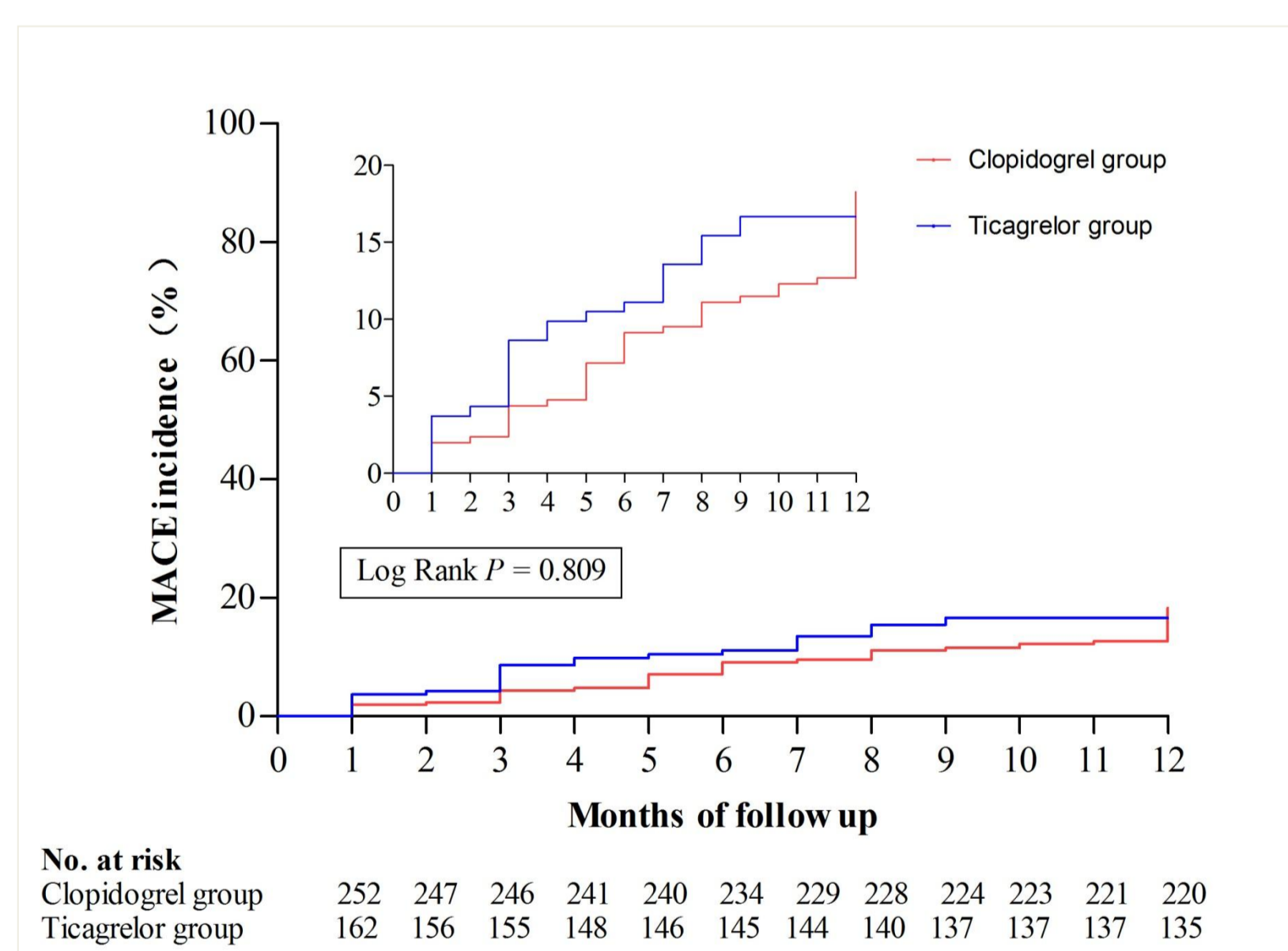
Characteristics	Univariate analysis		Multivariate analysis	
	HR (95%CI)	P	HR (95%CI)	P
P2Y <sub>12</sub> receptor inhibitor	0.587 (0.337-1.022)	0.060	0.609 (0.349-1.063)	0.081
Age(years)	1.013 (0.989-1.038)	0.299		
BMI(kg/m <sup>2</sup> )	1.098 (1.002-1.204)	<b>0.046</b>	1.108 (1.011-1.215)	<b>0.029</b>
Man gender	0.717 (0.405-1.270)	0.254		
Smoking history	0.418 (0.178-0.982)	<b>0.045</b>	0.450 (0.177-1.141)	0.092
Drinking history	0.506 (0.201-1.276)	0.149	0.745 (0.271-2.050)	0.569
Hypertension	1.389 (0.749-2.574)	0.297		
Diabetes mellitus	1.027 (0.546-1.932)	0.934		
ACEI/ARB	0.971 (0.556-1.697)	0.918		
β-BR	0.811 (0.465-1.414)	0.459		
CCB	1.274 (0.687-2.363)	0.441		
Statins	0.985 (0.136-7.136)	0.988		
PPI	1.366 (0.785-2.378)	0.270		
Number of diseased vessels				
1	1	0.454		
2	1.210 (0.524-2.797)	0.655		
3	1.567 (0.737-3.333)	0.243		
Number of stents	0.970 (0.724-1.300)	0.839		

## Conclusions

The Selection of P2Y<sub>12</sub> receptor inhibitor may have no influence on the outcomes of patients with CYP2C19 intermediate metabolizers after PCI. Effect of clinical feature on the prognosis should be considered.

## References:

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**Figure 1** Kaplan-Meier plot for outcome events