

The Effect of Pre-Treatment with Prasugrel vs. Clopidogrel in Patients with STEMI Treated with Primary PCI on Angiographic and Clinical Outcomes

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Background:

Prasugrel has been shown to reduce ischemic events in acute coronary syndrome patients compared with clopidogrel. However, in the TRITON-TIMI 38 trial most patients received the study drug during percutaneous coronary intervention (PCI), and not as pre-treatment. Furthermore, there is limited data on the efficacy of prasugrel in “real-life” ST-segment elevation myocardial infarction (STEMI) setting. We, therefore, aimed to compare the efficacy of prasugrel and clopidogrel pre-treatment in STEMI patients treated with primary PCI.

Methods:

We employed our primary PCI registry, which includes all patients with STEMI treated with primary PCI from 2001 in our institution. Only patients who received pre-treatment with prasugrel (60 mg, n=137) or clopidogrel (300-600 mg, n=965), before catheterization were included in the analysis. In the recent 2 years most patients were treated with prasugrel, whereas clopidogrel was mainly used in the period before. Major adverse cardiac events were defined as death, non-fatal MI or TVR.

Results:

Although there were imbalances in clinical characteristics, prasugrel pre-treatment was associated with better angiographic outcomes (lower rates of TIMI 0-1 flow pre-PCI and higher rates of TIMI blush grade 2-3 after the procedure), and lower rates of one month mortality and MACE compared with clopidogrel (Table). Multivariate logistic regression analysis showed that prasugrel treatment was associated with odds ratio of 1.4 for TIMI flow 2-3 (0.98-2.0, P=0.06).

Conclusions:

In a “real-life” consecutive registry of STEMI patients treated with primary PCI, pre-treatment with prasugrel was associated with better angiographic and clinical outcomes compared with clopidogrel.

	Prasugrel (n=137)	(Clopidogrel (n=965	P value
(Age (years	9±56	13±61	0.001
Males	88%	82%	0.07
Diabetes	18%	26%	0.05
Hypertension	47%	54%	0.2
Smoking	53%	47%	0.3
Anterior Wall MI	41%	46%	0.3
Multi-vessel Disease	58%	60%	0.6
Angiographic factors			
Pre-TIMI flow 0/1	53%	62%	0.05
Distal embolization	4.4%	8%	0.1
TIMI Blush grade 2-3	96%	91%	0.03
One month outcomes			
Mortality	0	2.7%	0.05
Re-infarction	0.8%	1.8%	0.4
Stent thrombosis	0.8%	1.2%	0.6
MACE	2.3%	6.3%	0.05