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Patency of infarct-related artery and platelet reactivity in patients with ST-segment elevation myocardial infarction

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Abstract

Background

Outcome in ST-segment elevation myocardial infarction (STEMI) is affected by patency of the infarct-related artery (IRA) on the initial angiogram. There is a controversy if preloading with antiplatelet drugs affects initial IRA patency in case of shortening transportation time for primary percutaneous coronary intervention (PCI). The aim of the study was to assess the relation between IRA patency and platelet reactivity on admission after preloading with aspirin and clopidogrel within 2 h to primary PCI.

Methods

The study included 49 subjects who received 600 mg of clopidogrel and 300 mg of aspirin and underwent primary PCI within 120 min from loading. Platelet reactivity testing was performed on admission with means of impedance aggregometry after induction with arachidonic acid (ASPItest) and adenosine diphosphate with prostaglandin E1 (ADPtest HS) to assess response to aspirin and clopidogrel, respectively. IRA patency was defined as TIMI flow 2 or 3 on the initial angiogram.

Results

Patent IRA on the initial angiogram was found in 20 patients (41%). Median time between preloading with antiplatelet drugs and primary PCI was 64 min (IQR 59–84 min). Patients who received clopidogrel earlier than 84 min before PCI (fourth quartile) had more suppressed platelet reactivity than patients in the first quartile (<59 min) as measured with ADPtest HS (p=0.04). Nevertheless, there was no difference in platelet reactivity between patients with and without IRA patency on the initial angiogram.

Conclusions

In patients preloaded with aspirin and clopidogrel within 2 h to primary PCI, there was no association between the magnitude of platelet inhibition and IRA patency at the time of the initial coronary angiography.

Keywords

Myocardial infarction; Infarct-related artery; Coronary artery patency; Platelet reactivity; Clopidogrel; Aspirin