Platelet Glycoprotein IIb/IIIa Receptor Blockade in Acute Myocardial Infarction Associated With Thrombotic Occlusion of the Left Main Coronary Artery

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Several reports have recently opened a new therapeutic window for the use of platelet glycoprotein (GP) IIb/IIIa receptor blockade as an adjunct to thrombolytic therapy in acute myocardial infarction. Because of the different protocols and the different agents that were used, as well as the relatively small number of patients included in these studies, one cannot draw any definitive conclusions about the efficacy of platelet GP IIb/IIIa receptor blockers as an adjunct to thrombolysis. Nevertheless, one could also make a case for the use of GP IIb/IIIa receptor blockers even as a monotherapy for acute myocardial infarction, as in the following case.

A 36-year-old, previously healthy male who was a heavy smoker was admitted with intermittent chest pain of 4 hours’ duration and ECG findings compatible with an acute anterior wall myocardial infarction (Figure 1). The patient was treated with aspirin (325 mg) and underwent emergency coronary angiography. This demonstrated multiple filling defects consistent with thrombotic occlusions involving the left main (Figures 2 and 3), the proximal left anterior descending, and the right (Figure 4) coronary arteries. At this stage, intravenous heparin (5000 U) was administered, achieving an activated clotting time of 265 seconds. Standard-dose, weight-adjusted abciximab was administered as a bolus, and continuous infusion was subsequently started for 12 hours, together with heparin, maintaining an activated partial thromboplastin time between 60 and 80 seconds. A few minutes after abciximab bolus injection, chest pain was relieved and gradual resolution of ST-segment elevation was apparent. Over the following 4 days, the patient remained asymptomatic. He developed a non–Q-wave myocardial infarction (Figure 5), with an increase in creatine kinase to 579 IU/L and 18% MB fraction. Echocardiography demonstrated mild septal-apical hypokinesis. Repeat angiography on day 5 revealed normal coronary arteries with no evidence of residual thrombus or coronary narrowing (Figures 6 and 7). Laboratory workup revealed that the patient is heterozygous for a mutation in factor V known as activated protein C resistance (APCR), a mutation that results in an abnormal resistance to degradation by APC (frequently called factor V Leiden) and an increased tendency to thrombosis, particularly in patients who are homozygous for this mutation.

Figure 1. ECG taken on admission showing ST-segment elevation in leads V2 to V6, I, and aVL with reciprocal changes in leads III and aVF.

Figure 2. Cine frame in right anterior oblique cranial projection showing a conglomerate of thrombus-containing lesions involving left main coronary artery.
References
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Circulation. 1998;98:1249-1250
doi: 10.1161/01.CIR.98.12.1249

Circulation is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
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Print ISSN: 0009-7322. Online ISSN: 1524-4539

The online version of this article, along with updated information and services, is located on the World Wide Web at:
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