

# Abciximab reduced death, MI, and urgent target vessel revascularization in non-ST-segment elevation acute coronary syndromes

Kastrati A, Mehilli J, Neumann FJ, et al. Abciximab in patients with acute coronary syndromes undergoing percutaneous coronary intervention after clopidogrel pretreatment: the ISAR-REACT 2 randomized trial. *JAMA*. 2006;295:1531-8.

**Clinical impact ratings:** Cardiology ★★★★★☆ Hematol/Thrombo ★★★★★☆

## QUESTION

In patients with non-ST-segment elevation acute coronary syndromes (ACSs) undergoing percutaneous coronary intervention (PCI), does abciximab reduce death, myocardial infarction (MI), or urgent target vessel revascularization?

## METHODS

**Design:** Randomized placebo-controlled trial (Intracoronary Stenting and Antithrombotic Regimen: Rapid Early Action for Coronary Treatment 2 [ISAR-REACT 2] trial).

**Allocation:** {Concealed}†.\*

**Blinding:** Blinded {patients, clinicians, outcome assessors, data collectors, data analysts, and data safety and monitoring committee}†.\*

**Follow-up period:** 30 days.

**Setting:** 7 clinical centers in Brazil, Germany, and the Netherlands.

**Patients:** 2022 patients (mean age 66 y, 75% men) who had non-ST-segment elevation ACS (≥ 1 episode of angina in the previous 48 h and elevated troponin T level [ $> 0.03 \mu\text{g/L}$ ], new ST-segment depression  $\geq 0.1 \text{ mV}$  or transient [ $< 20 \text{ min}$ ] elevation  $\geq 0.1 \text{ mV}$ , or new bundle-branch block), and significant angiographic lesions in a native coronary vessel or venous bypass graft amenable to and requiring PCI. Exclusion criteria included ST-segment elevation acute MI; hemodynamic instability; pericarditis; cancer with life expectancy  $< 1$  year; increased risk for bleeding; oral anticoagulation with a coumarin derivative in the previous 7 days; receipt of glycoprotein (GP) IIb/IIIa

inhibitor in the past 14 days; systolic blood pressure  $> 180 \text{ mm Hg}$ ; and hemoglobin level  $< 100 \text{ g/L}$ , hematocrit  $< 34\%$ , or platelet count  $< 100\,000 \text{ cells}/\mu\text{L}$  or  $> 600\,000 \text{ cells}/\mu\text{L}$ .

**Intervention:** Abciximab ( $n = 1012$ ) or placebo ( $n = 1010$ ). The abciximab group received abciximab, 0.25 mg/kg of body weight bolus followed by 0.125  $\mu\text{g}/\text{kg}$  per minute (maximum 10  $\mu\text{g}/\text{min}$ ) infusion for 12 hours, and heparin, 70 U/kg of body weight. The placebo group received placebo bolus and infusion for 12 hours, and heparin bolus, 140 U/kg. All patients received clopidogrel, 600 mg  $\geq 2$  hours before PCI, and aspirin, 500 mg.

**Outcomes:** Composite endpoint of all-cause mortality, MI, or urgent target vessel revascularization (coronary artery bypass graft surgery or PCI) because of myocardial ischemia within 30 days. Secondary outcomes included individual events of the composite end-

point, and in-hospital major and minor bleeding.

**Patient follow-up:** 100%.

## MAIN RESULTS

The abciximab group had a lower incidence of the composite endpoint, and death or MI than the placebo group (Table). Groups did not differ for in-hospital major and minor bleeding (Table), or for individual events of the composite endpoint.

## CONCLUSION

In patients with non-ST-segment elevation acute coronary syndromes undergoing percutaneous coronary intervention, abciximab reduced death, myocardial infarction, and urgent target vessel revascularization.

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\*See Glossary.

†Information provided by author.

### Abciximab vs placebo in patients with non-ST-segment elevation acute coronary syndromes undergoing percutaneous coronary intervention at 30 days†

Outcomes	Abciximab	Placebo	RRR (95% CI)	NNT (CI)
Composite endpoint <sup>‡</sup>	8.9%	11.9%	25% (3.0 to 42)	34 (21 to 281)
Death or MI	8.6%	11.5%	25% (3.0 to 43)	35 (21 to 291)
			RRI (CI)	NNH
Major bleeding	1.4%	1.4%	0% (-50 to 108)	Not significant
Minor bleeding	4.2%	3.3%	27% (-19 to 99)	Not significant

<sup>‡</sup>Abbreviations defined in Glossary; RRR, RRI, NNT, NNH, and CI calculated from relative risks in article.

<sup>§</sup>Death, myocardial infarction (MI), or urgent target vessel revascularization.

## COMMENTARY

Despite updated ACC/AHA guidelines and many clinical trials, controversy exists over the optimal therapy for ACS. After prescribing aspirin and heparin, cardiologists wrestle with clinical issues of whether all patients should receive clopidogrel before coronary angiography, whether GP IIb/IIIa antagonists should be started early or only during PCI, and whether high-dose clopidogrel before PCI might obviate the need for GP IIb/IIIa antagonists.

In the ISAR-REACT 2 trial by Kastrati and colleagues, abciximab showed clinical benefit over placebo following clopidogrel therapy by reducing a composite endpoint of death, MI, or urgent target vessel revascularization. Consistent with other ACS studies and invasive therapies, the GP IIb/IIIa treatment effect was enhanced and statistically significant only in the higher-risk, troponin-positive patients.

The ISAR REACT-2 results should affect current ACS and PCI management. GP IIb/IIIa antagonists reduce MI and death in patients with ACS, particularly when targeted to patients with elevated cardiac troponins or those undergoing PCI (1). Clopidogrel reduces death, MI,

and stroke in ACS patients and is required in patients receiving coronary stents (1, 2). The ISAR REACT-2 results support selective GP IIb/IIIa antagonist use in troponin-positive patients with ACS undergoing PCI, regardless of the timing or dose of clopidogrel. In contrast, the results corroborate previous analyses that showed that GP IIb/IIIa antagonists were not required in troponin-negative patients with ACS or low-risk patients having elective PCI who were pretreated with clopidogrel (3).

Future investigation should determine whether “upstream” GP IIb/IIIa antagonism is superior to starting therapy in the catheterization lab and the optimal timing of clopidogrel administration relative to catheterization or PCI.

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## References

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