

Deadly Combination; Tikagrelor and Abciximab

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ABSTRACT

Introduction: Incremental improvements in pharmacotherapy for percutaneous coronary intervention continue to reduce the incidence of adverse clinical events for the treatment of both stable coronary artery disease and acute coronary syndromes. In addition to anticoagulation with either heparin or bivalirudin, platelet inhibition with dual antiplatelet therapy represented a major advancement in reducing acute and late vessel thrombosis.

Case report: Forty nine years old man admitted to the coronary angiography unit with anterior myocardial infarction diagnosis. Before the patient underwent coronary angiography, 300 mg acetylsalicylic acid and 180 mg ticagrelor were applied as the drug. The patient's coronary appearance was left descending artery total and intensive thrombus. During the patient's operation, heparin was administered 10,000 units, intracoronary abciximab and thrombus aspiration was applied. Then, stent implanted to LAD ostial lesion. After stent implantation thrombus went to the intermediate artery and multiple balloon dilatation was applied. Timi-1 current provided after iv abciximab treatment then control of coronary angiography planned. However, hemoptysis developed after severe respiratory distress in the patient's appointments.

Conclusion: There are not enough randomized clinical trials on the combined use of ticagrelor and glycoprotein IIb / IIIa inhibitor. This fatal complication shows that patients with antiaggregant and anticoagulant medications require much more careful follow-up for bleeding.

Keywords: Tikagrelor, Abciximab, Alveolar hemorrhage

INTRODUCTION

Incremental improvements in pharmacotherapy for percutaneous coronary intervention (PCI) continue to reduce the incidence of adverse clinical events for the treatment of both stable coronary artery disease and acute coronary syndromes (ACS). In addition to anticoagulation with either heparin or bivalirudin, platelet inhibition with dual antiplatelet therapy represented a major advancement in reducing acute and late vessel thrombosis.¹ Ticagrelor, a reversible and direct-acting oral antagonist of the adenosine diphosphate receptor P2Y₁₂, significantly reduced death as compared to clopidogrel in patients with acute coronary syndrome.² Due to the lower incidence of sepsis and pulmonary adverse events as well as lower mortality in patients taking ticagrelor versus clopidogrel, such effects were previously considered to be beneficial.³ Intravenous glycoprotein IIb/IIIa inhibitors (GPI) were introduced to provide rapid platelet inhibition and reduce peri-procedural adverse ischemic events associated with PCI. However, meta-analyses of different anticoagulation strategies for PCI have raised concern that benefits associated with GPI use

may be outweighed by the risk of bleeding.⁴⁻⁶

CASE REPORT

Forty nine years old man admitted to the emergency department with a complaint of angina pectoris. The electrocardiogram of the patient had an elevation of the anterior derivations and the patient was admitted to the coronary angiography laboratory. Before the patient underwent coronary angiography, 300 mg acetylsalicylic acid and 180 mg ticagrelor were administered as the drug. The patient's coronary appearance was left descending artery (LAD) total and intensive thrombus. During the patient's operation, heparin was administered 10,000 units, intracoronary abciximab and thrombus aspiration was applied. Then, stent implanted to LAD ostial lesion. After stent implantation thrombus went to the intermediate artery and multiple balloon dilatation was applied.

As seen figure 1 timi-1 current provided after iv abciximab treatment then control of coronary angiography planned. However, hemoptysis developed after severe respiratory distress in the patient's appointments. Chest X-ray was taken with stopping the antiaggregant treatment taken by the patient. As seen figure 2 widespread haemorrhagic areas were observed in her graft, and Bronchoscopy was applied. Bronchoscopic images showed active bleeding in all bronchi, alveolar Hematoma was observed on the walls. Following time the patient was lost due to the Acute Respiratory Distress Sendrom.

DISCUSSION

Systematic use of percutaneous coronary interventions for recanalization of infarcted, related arteries is actually the most effective therapeutic approach for acute myocardial infarction.⁷ Inhibition of platelet function in patients with ACS is one of the main principles of treatment. Current guidelines have the consensus on the necessity of using dual antithrombocytes (aspirin plus clopidogrel, prasugrel or ticagrelor) in patients with ACS.⁸

Glycoprotein IIb/IIIa inhibitors reduce the occurrence of death or myocardial infarction in patients with acute coronary syndromes not routinely scheduled for early revascularisation.

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Figure-1: Spider image of total thrombus lesion in LAD ostial and Right caudal image of thrombus lesion in intermediate artery

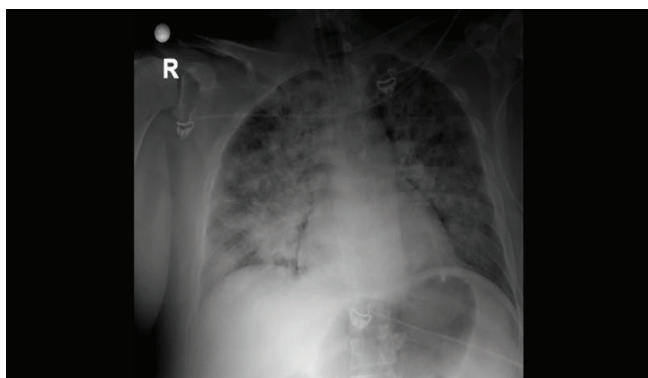


Figure-2: Chest X-ray image of widespread haemorrhagic areas in lungs

The event reduction is greatest in patients at high risk of thrombotic complications. Treatment with a glycoprotein IIb/IIIa inhibitor might therefore be considered especially in such patients early after admission, and continued until a decision about early coronary revascularisation has been made.⁹ In the PLATO study, ticagrelor and clopidogrel (2468 (26.4%) - 2487 (26.8) $P = 0.62$), the use of glycoprotein IIb / IIIa inhibitor was similar and there was no significant difference between the two groups at the end of the study, between major bleeding (11.6% and 11.2%, respectively, $P = 0.43$) and minor bleeding rates. The dyspnea episodes observed during the study were more tightly packed in the ticagrelor group than in the clopidogrel group (13.9% versus 8.0%, $p < 0.0001$).² In our case, post-dyspnea fatal pulmonary hemorrhage developed which is a rare event. Undoubtedly, the results of these studies will change everyday practice of acute coronary syndromes treatment.¹⁰

CONCLUSION

There are not enough randomized clinical trials on the combined use of ticagrelor and glycoprotein IIb / IIIa inhibitor. This fatal complication shows that patients with antiaggregant and anticoagulant medications require much more careful follow-up for bleeding.

REFERENCES

1. Lipinski MJ, Lee RC, Gaglia MA, Torguson R, Garcia-Garcia HM, Pichard AD, et al. Comparison of heparin, bivalirudin, and different glycoprotein IIb/IIIa inhibitor regimens for anticoagulation during percutaneous coronary intervention: A network meta-

analysis. *Cardiovasc Revascularization Med.* Elsevier; 2016;17:535–45.

2. Wallentin L, Becker RC, Budaj A, Cannon CP, Emanuelsson H, Held C, et al. Ticagrelor versus Clopidogrel in Patients with Acute Coronary Syndromes. *N Engl J Med* [Internet]. Massachusetts Medical Society; 2009;361:1045–57.
3. Krisai P, Haschke M, Buser PT, Mueller C. Ticagrelor induced systemic inflammatory response syndrome. *BMC Cardiovasc Disord* [Internet]. London: BioMed Central; 2017;17:14.
4. Neumann F-J, Hochholzer W, Pogatsa-Murray G, Schömig A, Gawaz M. Antiplatelet effects of abciximab, tirofiban and eptifibatid in patients undergoing coronary stenting. *J Am Coll Cardiol.* Elsevier; 2001;37:1323–8.
5. Navarese EP, Schulze V, Andreotti F, Kowalewski M, Kołodziejczak M, Kandzari DE, et al. Comprehensive meta-analysis of safety and efficacy of bivalirudin versus heparin with or without routine glycoprotein IIb/IIIa inhibitors in patients with acute coronary syndrome. *JACC Cardiovasc Interv.* Elsevier; 2015;8:201–13.
6. Lipinski MJ, Lhermusier T, Escarcega RO, Baker NC, Magalhães MA, Torguson R, et al. Bivalirudin versus heparin for percutaneous coronary intervention: an updated meta-analysis of randomized controlled trials. *Cardiovasc Revascularization Med.* Elsevier; 2014;15:315–22.
7. Zhu MM, Feit A, Chadow H, Alam M, Kwan T, Clark LT. Primary stent implantation compared with primary balloon angioplasty for acute myocardial infarction: a meta-analysis of randomized clinical trials. *Am J Cardiol. Excerpta Medica;* 2001;88:297–301.
8. Aksakal E. Akut koroner sendromlu hastalarda trombositi inhibisyonu PLATO çalışmasının girişimsel tedavi planlanan veya medikal tedavi alan hastalardaki alt grup çalışma sonuçları. 2013;
9. Boersma E, Harrington RA, Moliterno DJ, White H, Thérout P, Van de Werf F, et al. Platelet glycoprotein IIb/IIIa inhibitors in acute coronary syndromes: a meta-analysis of all major randomised clinical trials. *Lancet.* Elsevier; 2002;359:189–98.
10. Dziewierz A, Rakowski T, Dudek D. Abciximab in the management of acute myocardial infarction with ST-segment elevation: evidence-based treatment, current clinical use, and future perspectives. *Ther Clin Risk Manag.* Dove Press; 2014;10:567.

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