

Replacement of ticagrelor with clopidogrel complicated with acute in-stent thrombosis

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A 49-year old man with a history of 2 episodes of myocardial infarction was referred to the catheterization laboratory due to ST-segment elevation myocardial infarction of the inferior wall. He also suffered from hypertension and was an active smoker. On admission, the patient received ticagrelor, β -adrenergic receptor blocker,

atorvastatin, nitroglycerin, and heparin. Coronary angiography was performed via the right femoral approach. It revealed multivessel coronary disease with culprit lesions with stenosis of 95% in the distal segment of the right coronary artery (RCA) (FIGURE 1A), in-stent restenosis in the proximal left anterior descending coronary

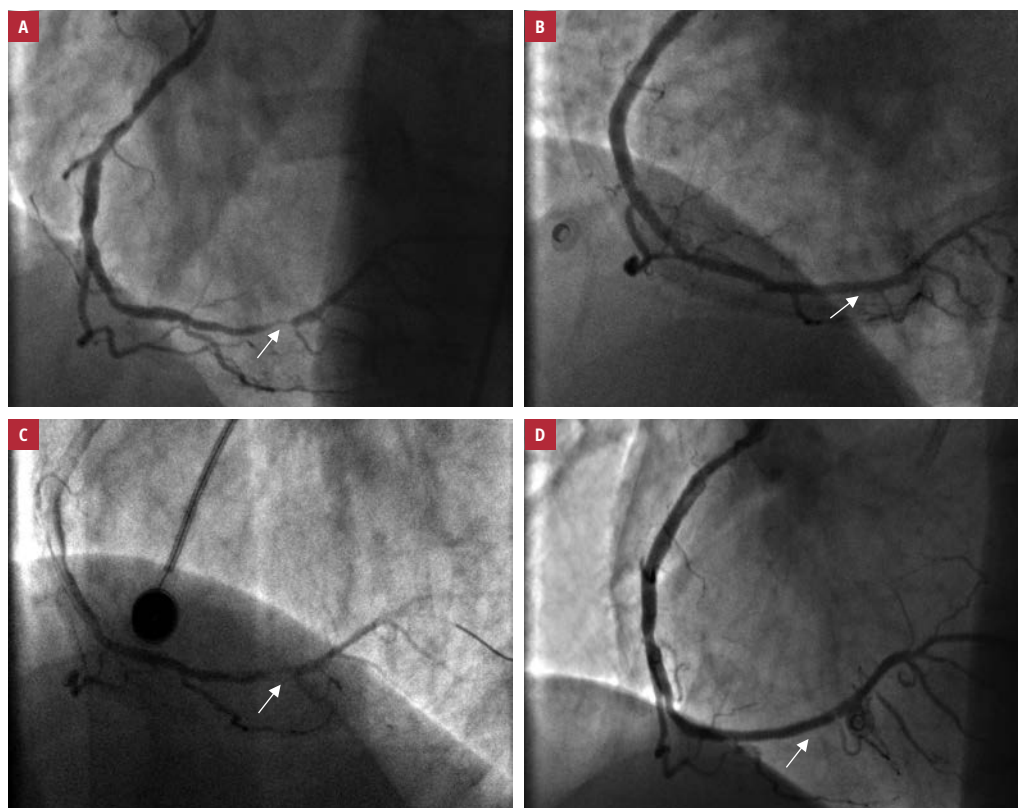


FIGURE 1 Culprit lesion in the right coronary artery (A), successfully treated by implanting 2 drug-eluting stents (B), as indicated by the arrows; acute in-stent thrombosis (arrow) after switching from ticagrelor to clopidogrel (C), successfully treated with balloon angioplasty and stent implantation (D) (arrow)

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artery (LAD), and stenosis of 80% of the proximal segment of the circumflex coronary artery (Cx). Consequently, immediate percutaneous coronary intervention (PCI) of RCA was performed, and 2 sirolimus-eluting stents (SES) (2.5 × 18 mm and 3.5 × 25 mm, Alex Plus, Balton, Warsaw, Poland) were implanted, with satisfactory angiographic results (FIGURE 1B). The next day the patient was referred to the local heart team and was scheduled for coronary artery bypass grafting. Because of an increased bleeding risk (uncontrolled hypertension, dual antiplatelet therapy, recent myocardial infarction), the surgeon suggested to replace ticagrelor with clopidogrel. The conversion was performed with a loading dose of 600 mg of clopidogrel on the second day, in accordance with the current European Society of Cardiology guidelines on dual antiplatelet therapy.¹ On the third day, the patient again reported chest pain which was accompanied by recurrent ST-segment elevation myocardial infarction of the inferior wall. Immediate coronary angiography revealed an acute in-stent thrombosis in the stent previously implanted in the RCA (FIGURE 1C). It required further balloon angioplasty (2.5 × 15 mm) and implantation of another 2.75 × 15 mm SES (FIGURE 1D). Ticagrelor was resumed and recommended for the next 12 months as part of dual antiplatelet therapy (precise dual antiplatelet therapy score, 25 points), and the patient was scheduled for a 2-stage PCI of the LAD and Cx. One month after the myocardial infarction, simultaneous PCI of the LAD and Cx with SES implantation (3.5 × 15 mm and 2.5 × 12 mm, respectively) was performed. No further coronary artery bypass grafting procedure was planned.

This case shows that the transition from ticagrelor to clopidogrel has limited safety, and hence should be performed with extreme caution and in accordance with current recommendations. Ticagrelor should be switched to clopidogrel with the administration of a 600-mg loading dose of clopidogrel 24 hours after the last ticagrelor dose, and a 75-mg maintenance dose of clopidogrel after the last ticagrelor dose can be considered in patients with bleeding or bleeding risk.¹ As this case demonstrates, it is useful to evaluate platelet reactivity using various methods in high-risk patients to avoid adverse cardiovascular events.

ARTICLE INFORMATION

CONFLICT OF INTEREST None declared.

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