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Dabigatran and Risk of Myocardial Infarction

Nadiah Mhd Shukree*, Jeremiah Ding D.S., Loi Siew Ling and Afiq Alfian M.S
Emergency and Trauma Department, Hospital Bintulu, Malaysia

Introduction: Novel oral anticoagulants (NOAC) are a new generation oral anticoagulant which are gaining favour due to its ease of monitoring and less risk of bleeding. We present a case of acute anterior ST elevation myocardial infarction (STEMI) secondary to in-stent thrombosis despite on dabigatran.

Case Report: A 51 years old gentleman presented to the Emergency and Trauma Department complaining of severe left sided chest pain. He has underlying atrial fibrillation and ischemic heart disease with history of left anterior descending (LAD) and left circumflex coronary artery (LCx) stenting in 2008. Stent study in 2016 was patent. Patient was on oral Dabigatran 150mg bd and he took the last dose 12 hours prior to the onset of angina. Initial 12-lead ECG showed ST elevation over lead V2-V5. The clinical history and the ECG was suggestive of acute anterior STEMI. Patient was then decided for thrombolytic therapy using intravenous Tenecteplase due to no immediate percutaneous coronary intervention (PCI) service, however failed thrombolysis. Patient was subsequently transferred to Sarawak Heart Centre (PJHUS) for PCI, which showed LAD occlusion at the stented segment.

Discussion: This is the first known incident of patient developing stent thrombosis despite on dabigatran in East Malaysia. Dabigatran is a direct inhibitor of thrombin (DIT) that is used for prophylaxis of stroke and systemic thromboembolism in patients with nonvalvular atrial fibrillation (NVAf). The thrombin inhibition should have reduced the incidence of stent thrombosis. Dabigatran paradoxically increased the risk of myocardial infarction in patients with atrial fibrillation as reported in RE-LY trial and this case. The theory behind this still remains speculative.

Conclusion: We suggest that healthcare providers to consider the increased risk of myocardial infarction over the benefit of dabigatran, especially in patients with NVAf.