# Management of prosthetic valve thrombosis concomitant with coronary embolism

To the Editor,

We have recently read with great interest the article by Olcay (1) published in Anatol J Cardiol 2018; 20: 365-7. We appreciate the author for his report describing the concomitant left main coronary artery and mitral prosthetic valve thrombosis (PVT) treatment. On the other hand, we believe that there are several major drawbacks that need to be addressed.

Coronary embolism (CE) is a rare cause of acute coronary syndrome (ACS) in patients with prosthetic heart valves. Information regarding ACS in patients with prosthetic heart valves is scarce and based mainly on case reports and limited number of clinical trials (2, 3). We agree with the authors that thrombolytic therapy (TT) provides the advantage of widespread availability and easier administration than surgery (4). However, low-dose and ultraslow fibrinolytic therapy (25 mg/25 h) in a patient with cardiogenic shock may not be an effective option for urgent treatment (5). Recently, Yesin et al. (3) reported that TT with low-dose and slow infusion of tissue plasminogen activator (tPA) (25 mg/6 h) has proven its efficacy and safety in patients with concomitant CE and PVT. In such cases, low-dose and slow infusion TT may be preferred to ultraslow infusion as a bailout treatment strategy when surgical support is insufficient.

We totally disagree with the authors about simultaneous heparin infusion during TT administration. The primary goal of reducing tPA dose and infusion rate was to reduce major bleeding complications. Other entities that we have proposed to reduce bleeding in the TROIA and the ultraslow PROMETEE Trials were omitting bolus tPA dose and avoiding concomitant anticoagulant use (5, 6). Recently, we have described how to perform and manage low-dose and slow/ultraslow tPA infusion regimens in patients with PVT (4). In this case report, there are no data regarding the preparation and providing the biological stability of reconstituted solution during a 24-hour infusion. In addition, after the first session of TT, the resolution of the stuck leaflet was visualized by transesophageal echocardiography (TEE), and the author decided to perform one more session of TT. There were no data regarding the size of the residual thrombus in the case report. Was there an indication (>10 mm or 0.8 $cm^2$) to continue the TT for a non-obstructive PVT? Cine fluoroscopy (CF) is a low-cost, noninvasive imaging technique, which is readily available in most centers and can be performed rapidly, particularly in unstable patients, for detecting stuck valves. Although the role of CF has declined since the introduction of TEE, it still serves as a complementary method to TEE in the evaluation of PVT and guiding TT (4, 7).

Real-time three-dimensional (RT-3D) TEE has emerged as an important clinical tool in the assessment of PVT for more than 10 years. RT-3D TEE has higher spatial resolution, resulting in images with unparalleled anatomical detail when compared with two-dimensional (2D) imaging. The detection of non-obstructive PVT can be challenging, particularly when Doppler parameters are within normal limits, and clinical findings are subtle. Hence, non-obstructive PVT can be even missed with 2D TEE. The diagnostic accuracy for detecting PVT was improved after the introduction of RT-3D TEE, especially for those on mitral position (7).

In conclusion, low-dose and slow infusion TT would be a better treatment strategy in such patients with concomitant CE and PVT except cardiogenic shock.

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