

Critique of “Dramatical Response to Low Dose Ultra-Slow Infusion of Alteplase for Massive Mitral Mechanical Valve Thrombosis”

To the Editor,

We have recently read with great interest the article by Balaban et al¹ entitled “Dramatical Response to ‘Low-Dose Ultra-Slow Infusion’ of Alteplase for Massive Mitral Mechanical Valve Thrombosis.” We appreciate the authors for the management of the case report who developed a cerebral embolic complication during the thrombolytic therapy (TT) for mechanical valve thrombosis (MVT). On the other hand, we believe that there are some major drawbacks that need to be addressed.

The reasons for our concern are as follows.

A mechanical heart valve is highly thrombogenic^{2,3} and increases the risk of thrombosis up to 10%, and the most feared complication is the risk of acute ischemic stroke (AIS) that can be up to 5%-6% for left-sided MVT.^{4,5} The first 6 hours after AIS are crucial, and early diagnosis and exclusion of hemorrhage by multidetector computed tomography are very important.⁶ The recommended dose of alteplase according to the stroke guideline is 0.9 mg/kg (maximum dose, 90 mg) for 60 minutes for AIS according to current guidelines, with 10% of the dose given as a bolus for 1 minute.⁶ The safety and efficacy of this treatment when administered within the first 3 hours after stroke onset are solidly supported by combined data from multiple randomized clinical trials and confirmed by extensive community experience in many countries. Several reports have previously indicated that low dose and faster TT regimens, and continuing the therapy for the coincident AIS, which was resolved with almost complete success.^{5,7} In this case report, the authors state that AIS developed in the 13th hour of TT, and neurological symptoms completely disappeared after 12 hours. We totally agree with the authors' concerns that faster TT regimens might induce new thromboembolic complications in patients with concomitant MVT. However, the readers may wonder why TT was not given with low dose, slow infusion of alteplase for the treatment of AIS.

In conclusion, low-dose and slow infusion of alteplase can be considered a beneficial treatment strategy in patients with MVT who develop AIS.

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LETTER TO THE EDITOR

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