



ELSEVIER

Contents lists available at ScienceDirect

Journal of Cardiology Cases

journal homepage: www.elsevier.com/locate/jccase

Letter to the Editor

Recently introduced thrombolytic therapy regimens have been sufficiently effective and safer in patients with prosthetic valve thrombosis



To the Editor,

We have read with great interest the article by Araiza-Garayordobil et al. entitled "Thrombolytic treatment for acute prosthetic valve thrombosis: Is it better than surgery?" [1]. The authors reported a case of mitral prosthetic valve thrombosis (PVT), which was successfully treated with an intravenous bolus of 15 mg tissue type plasminogen activator (t-PA) and continuous infusion of 85 mg t-PA for 90 min. We congratulate the authors for achieving a successful outcome in such a high-risk patient. However, we would like to contribute to the case report discussing the new low-dose slow-infusion thrombolytic therapy (TT) regimens which have been associated with lower complication rates.

TT has increasingly become an alternative to surgery as a first-line therapy in patients with PVT. We agree with the authors that TT provides the advantage of widespread availability and easier administration as compared to surgery [2]. However, standard TT regimens with accelerated and high dose t-PA (as used in the present case) may still be associated with higher complication and mortality rates. Recently, several trials have been reported regarding the safety and efficacy of TT regimens with low-dose and slow-infusion of t-PA [2]. In TROIA Trial, low dose (25 mg) – slow infusion (6 h) of t-PA has been found to be a sufficiently effective and safer regimen in the management of PVT as compared with higher dose and fast infusion regimens [3]. The 2017 AHA/ACC Focused Update of the 2014 AHA/ACC Guideline for the Management of Patients with Valvular Heart Disease now recommends urgent initial treatment with either slow-infusion low-dose TT or emergency surgery for obstructive PVT as first-line treatment strategies with class 1B indication [4]. The ultra-slow PROMETEE Trial has demonstrated that ultra-slow (25 h) infusion of low-dose (25 mg) t-PA without bolus appears to be associated with lower non-fatal complications and mortality rates for PVT patients without loss of effectiveness [5].

In conclusion, low fatal and non-fatal complication rates with low-dose and slow/ultra slow infusion TT regimens strengthen the hand of TT against surgery. Clinicians should prefer evidence-based treatments and avoid overuse of regimens beyond the reported safety measures.

Conflict of interest

The authors declare that they have no conflict of interest.

Funding

This manuscript was not funded.

References

- [1] Araiza-Garayordobil D, Aguilar-Rojas LA, Mendoza-García S, Barajas-Campos RL, Casal-Alonso S, Briseño-de-la-Cruz JL, et al. Thrombolytic treatment for acute prosthetic valve thrombosis: is it better than surgery. *J Cardiol Cases* 2017;16:162–4.
- [2] Guner A, Kalcik M, Gursoy MO, Gunduz S, Ozkan M. How to perform and manage low-dose and slow/ultra-slow tissue type plasminogen activator infusion regimens in patients with prosthetic valve thrombosis. *J Thromb Thrombolysis* 2018;46:399–402.
- [3] Yzkan M, Gunduz S, Biteker M, Astarcioğlu MA, İyevik C, Kaynak E, et al. Comparison of different TEE-guided thrombolytic regimens for prosthetic valve thrombosis: the TROIA trial. *JACC Cardiovasc Imaging* 2013;6:206–16.
- [4] Nishimura RA, Otto CM, Bonow RO, Carabello BA, Erwin 3rd JP, Fleisher LA, et al. 2017 AHA/ACC focused update of the 2014 AHA/ACC guideline for the management of patients with valvular heart disease: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *J Am Coll Cardiol* 2017;70:252–89.
- [5] Yzkan M, Gunduz S, Gursoy OM, Karakoyun S, Astarcolu MA, Kalçık M, et al. Ultra slow thrombolytic therapy: a novel strategy in the management of PROsthetic MEchanical valve Thrombosis and the prEdictors of outcome: the ultra-slow PROMETEE trial. *Am Heart J* 2015;170:409–18.

Ahmet Guner (MD)*

Kosuyolu Kartal Heart Training and Research Hospital, Istanbul, Turkey

Macit Kalcik (MD)

Department of Cardiology, Faculty of Medicine, Hitit University, Corum, Turkey

Sabahattin Gunduz (MD)

Department of Cardiology, VM Medikal Park Pendik Hospital, Istanbul, Turkey

Mehmet Ozkan (MD)^{ab}

^aKosuyolu Kartal Heart Training and Research Hospital, Istanbul, Turkey

^bSchool of Health Sciences, Ardahan University, Ardahan, Turkey

*Corresponding author at: Department of Cardiology, Kosuyolu Kartal Heart Training & Research Hospital, Cevizli Mah, Denizler Cad.

Cevizli Kavağ, 34865?Kartal/Istanbul, Turkey

E-mail address: ahmetguner489@gmail.com (A. Guner).