



LETTER TO THE EDITOR

Low-dose intravenous tissue-type plasminogen activator for prosthetic valve thrombosis is better than standard dose streptokinase



Baixas doses de activador de plasminogéneo tecidual intravenoso são preferíveis às doses estandardizadas para trombose de prótese valvular

We have recently read with great interest the article by Cardoso et al. entitled "Prosthetic mitral valve thrombosis in pregnancy: from thrombolysis to anticoagulation".¹

The authors reported a case of mitral prosthetic valve thrombosis (PVT) in early pregnancy, which was successfully treated with streptokinase. Streptokinase was administered using a loading dose of 250 000 IU given over 30 min, followed by 100 000 IU/h infusion. We congratulate the authors for their successful management strategy of such a high-risk patient, but we would like to comment on a few points of the authors' paper.

PVT is an uncommon but serious complication of heart valve replacement procedures. Because of associated prothrombotic alterations, pregnancy in women with mechanical heart valves carries a high rate of PVT and thromboembolic complications.²⁻⁴ Özkan et al. recently published the results of the largest series of pregnant patients with PVT.⁵ This single-center, prospective, non-randomized, observational study included 24 consecutive pregnant women (25 pregnancies with 28 PVT episodes over an eight-year period) with left-sided PVT (all mitral; n=27). Patients with obstructive and nonobstructive PVT with recent systemic thromboembolism and a thrombus diameter of >5 mm and patients with asymptomatic mobile nonobstructive PVT with a thrombus diameter of at least 10 mm were included in the study. A specific thrombolytic protocol was used (25 mg tissue-type plasminogen activator infusion for six hours for each thrombolytic session, repeated once after 24 hours up to six times with a maximum total dose of 150 mg). They found a 100% thrombolytic

success rate with no maternal mortality. Neonatal mortality in the series by Özkan et al. was 20%, similar to the incidence reported in other studies.

Despite the limitations of the study, this protocol seems to be an effective therapy with an excellent success rate for the treatment of PVT in pregnant women. It also seems to be safer than cardiac surgery or alternative medical strategies published to date. In conclusion, according to the current data, rather than standard dose streptokinase, low-dose, slow-infusion tissue-type plasminogen activator should be considered as the first-line therapy in pregnant patients with PVT.

References

- Cardoso G, Aguiar C, Andrade MJ, et al. Prosthetic mitral valve thrombosis in pregnancy: from thrombolysis to anticoagulation. *Rev Port Cardiol.* 2015;34:71.e1-5.
- Biteker M, Ozkan M. Treatment of obstructive prosthetic heart valve thrombosis in pregnancy. *J Card Surg.* 2010;25:206.
- Ozkan M, Biteker M, Oğuz AE, et al. Prosthetic mechanical valve thrombosis in pregnant women. *Türk Kardiyol Dern Ars.* 2009;37:215-7.
- Ozkan M, Biteker M, Duran NE, et al. Images in cardiovascular medicine. Huge prosthetic mitral valve thrombosis in a pregnant woman. *Circulation.* 2009;120:e151-2.
- Özkan M, Çakal B, Karakoyun S, et al. Thrombolytic therapy for the treatment of prosthetic heart valve thrombosis in pregnancy with low-dose, slow infusion of tissue-type plasminogen activator. *Circulation.* 2013;128:532-40.

Murat Biteker^a, Özcan Başaran^{a,*}, Nesrin Filiz Başaran^b, Funda Sungur Biteker^c

^a Muğla Sıtkı Koçman University, Faculty of Medicine, Department of Cardiology, Muğla, Turkey

^b Muğla Sıtkı Koçman University, Faculty of Medicine, Department of Medical Pharmacology, Muğla, Turkey

^c Muğla Sıtkı Koçman University, Faculty of Medicine, Department of Infectious Diseases and Clinical Microbiology, Muğla, Turkey

* Corresponding author.

E-mail address: basaran.ozcan@yahoo.com (Ö. Başaran).