Taiwanese Journal of Obstetrics & Gynecology 60 (2021) 959–960

Contents lists available at ScienceDirect

Taiwanese Journal of Obstetrics & Gynecology

journal homepage: www.tjog-online.com

Correspondence

Does low molecular weight heparin really protect against prosthetic valve thrombosis during pregnancy with strict anti-Xa monitoring?

Keywords:
Prosthetic valve thrombosis
Enoxaparin
Pregnancy

Dear Editor,

We have recently read with great interest the article by Espiau Romera et al. entitled "Mitral valve thrombosis in term pregnancy: A case report and review of the literature" [1]. The authors have reported the management of a pregnant patient with mechanical prosthetic valve thrombosis in mitral position. We congratulate the authors for achieving a successful outcome in such a high-risk patient for prosthetic valve thrombosis (PVT). On the other hand, we would like to emphesis some points in the light of the current evidence.

The reasons for our concern are as follows.

First, pregnancy is a prothrombotic condition and the risk of thrombosis is highest in those with mechanical prosthetic heart valves (MPHV) [2]. Therefore, pregnant women with MPHVs require close monitoring for optimal anticoagulation. Low molecular weight heparin (LMWH) is widely used in pregnant women with MPHV due to safety concerns. Current guidelines and the most recent expert opinion recommend the use of LMWH with a target peak anti-Xa between 0.8 and 1.2. In compliant patients with monitoring of anti-factor Xa levels, the risk of PVT with LMWH during pregnancy was found to be between 7.1% and 12% [3]. Despite current recommendations, adequate peak anti-Xa levels, the risk of PVT is still high under LMWH therapy [2]. Recently, we have reported that PVT was detected in 32% of patients with strict anti-Xa follow-up during pregnancy. Although there was a trend towards higher frequency of PVT in pregnant women without anti-Xa monitoring, There was no statistically significant difference between women with and without anti-Xa monitoring (51% versus 32%, $p = 0.055$) [2]. Hence, more potent anticoagulation regimens without detrimental effects to the fetus should be developed.

Second, low-dose, slow infusion of tissue-type plasminogen activator (t-PA) with repeated doses as needed is an effective therapy with an excellent thrombolytic success rate for the treatment of PVT in pregnant women. Previously, Ozkan et al. indicated that transesophageal echocardiography-guided low-dose, slow infusion t-PA protocol was associated with 100% thrombolytic success without maternal mortality, and this treatment strategy was associated with fetal loss (20%) consistent with the normal population [4]. Moreover, Güner et al., in their study recently published, thrombolytic therapy (TT) was used as first-line treatment in 29 pregnancies. Each patient was successfully treated and no maternal death occurred [2]. The readers may wonder whether surgical treatment with a high maternal and fetal mortality rate is preferred to PVT treatment over TT.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Declaration of competing interest

All of the authors have no conflict of interest.

References

[1] Espiau Romera A, Jimeno Sánchez J, Navarro Sierra J, Simón Paracuellos T, Villalobos Salguero FJ, Rodríguez Solanilla B. Mitral valve thrombosis in term pregnancy: a case report and review of the literature. Taiwan J Obstet Gynecol 2021;60:324–7.
[2] Güner A, Kalçık M, Gürsoy MO, Gündüz S, Astarcıoğlu MA, Bayam E, et al. Comparison of different anticoagulation regimens regarding maternal and fetal outcomes in pregnant patients with mechanical prosthetic heart valves (from the multicenter ANATOLIA-PREG registry). Am J Cardiol 2020;127:113–9.
[3] Regitz-Zagrosek V, Roos-Hesselink JW, Bauersachs J, Blomström-Lundqvist C, Cífková R, De Bonis M, et al. 2018 ESC Guidelines for the management of cardiovascular diseases during pregnancy. Eur Heart J 2018;39:3165–241.
[4] Özkan M, Çakal B, Karakoyun S, Gürsoy MO, Çevik C, Kalçık M, 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.

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

https://doi.org/10.1016/j.tjog.2021.07.037

Ahmet Güner*
Department of Cardiology, University of Health Sciences, Mehmet Akif Ersoy Thoracic and Cardiovascular Surgery Training and Research Hospital, Istanbul, Turkey

Semih Kalkan, Mehmet Özkan
Department of Cardiology, Koşuyolu Kartal Heart Training and Research Hospital, Istanbul, Turkey

* Corresponding author. Mehmet Akif Ersoy Thoracic and Cardiovascular Surgery Training and Research Hospital, Department of Cardiology, Kucukcekmece, Istanbul, 34303, Turkey. Fax: +90 212 692 20 00.
E-mail address: ahmetguner488@gmail.com (A. Güner).