



Letter to the Editor

Optimal patient selection for MitraClip system in the era of continuous-flow left ventricular assist device



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To the editor:

I congratulate Ammirati and colleagues for their preliminary report showing the durability of the MitraClip system during continuous-flow left ventricular assist device (LVAD) support for a median of 401 days [1]. Although longer-term studies investigating the freedom from thromboembolic events and device malposition are warranted, their findings would support the feasibility of MitraClip therapy in LVAD patients with residual or recurrent mitral regurgitation [2], as they mentioned.

However, their finding also raises a concern of optimal patient selection for MitraClip therapy among patients with advanced heart failure. Their patients received LVAD implantation relatively soon after the MitraClip procedures (median 282 days). Considering that LVAD therapy also improves significant mitral regurgitation due to the strong mechanical unloading of LV [3], they might be rather good candidates of the direct LVAD therapy instead of MitraClip. Optimal patient selection such as those with less remodeled LV or those with contraindication

of cardiac surgery might be required for the successful MitraClip therapy in the era of LVAD.

On the contrary, preoperative MitraClip procedure might stabilize patients' hemodynamics and result in more improved clinical outcomes following LVAD implantation, as we showed in the study, investigating the implication of pre-LVAD prophylactic intra-aortic balloon pumping [4]. Nevertheless, Dogan and colleagues recently showed that MitraClip procedures did not significantly improve patients' hemodynamics before LVAD implantation [5]. Optimal combination therapy with MitraClip and LVAD would be the next concern.

References

- [1] E. Ammirati, C.M. Van De Heyning, F. Musca, M. Brambatti, E. Perna, M. Cipriani, et al., Safety of centrifugal left ventricular assist device in patients previously treated with MitraClip system, *Int. J. Cardiol.* 283 (2019) 131–133.
- [2] D.P. Cork, R. Adamson, R. Gollapudi, W. Dembitsky, B. Jaski, Percutaneous repair of postoperative mitral regurgitation after left ventricular assist device implant, *Ann. Thorac. Surg.* 105 (2018) e45–e46.
- [3] J.O. Robertson, D.C. Naftel, S.L. Myers, R.J. Tedford, S.M. Joseph, J.K. Kirkin, et al., Concomitant mitral valve procedures in patients undergoing implantation of continuous-flow left ventricular assist devices: an INTERMACS database analysis, *J. Heart Lung Transplant.* 37 (2018) 79–88.
- [4] T. Imamura, K. Kinugawa, D. Nitta, M. Hatano, O. Kinoshita, K. Nawata, et al., Prophylactic intra-aortic balloon pump before ventricular assist device implantation reduces perioperative medical expenses and improves postoperative clinical course in INTERMACS profile 2 patients, *Circ. J.* 79 (2015) 1963–1969.
- [5] G. Dogan, J.S. Hanke, M. Ricklefs, A. Chatterjee, C. Feldmann, B. Mashaqi, et al., MitraClip procedure prior to left ventricular assist device implantation, *J. Thorac. Dis.* 10 (2018) S1763–S1768.

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