



Preoperative risk factors of early right ventricular failure—following left ventricular assist device implantation

Teruhiko Imamura

Second Department of Medicine, University of Toyama, Toyama, Japan

Correspondence to: Teruhiko Imamura, MD, PhD. FAHA, FACC, FESC, FHFSA, FJCC. Second Department of Medicine, University of Toyama, 2630 Sugitani Toyama, Toyama 930-0194, Japan. Email: teimamu@med.u-toyama.ac.jp.

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Preoperative risk stratification and perioperative management of postoperative right ventricular failure following left ventricular assist device (LVAD) implantation are receiving great concerns. Carmona and colleagues demonstrated that LVAD implantation by thoracotomy instead of sternotomy had an advantage in reducing the risk of post-operative right ventricular failure. There are several concerns that should improve their findings (1).

In their novel surgical approach strategy, a sternotomy is recommended for LVAD implantation and concomitant mitral and/or tricuspid valve surgeries. Sternotomy-related factors including longer cardiopulmonary bypass time and perioperative blood transfusion would have association with the development of right ventricular failure as the authors stated (2), whereas concomitant valve surgeries themselves might also have negative impacts on right ventricle. Outcome comparison between the sternotomy and thoracotomy among those with LVAD implantation alone might exclude the effects of such confounders.

Second, several preoperative hemodynamic data seem to have association with postoperative right ventricular failure, including pulmonary vascular resistance, pulmonary artery pulsatility index, and right ventricular stroke work index (2,3). Did the authors consider investigating their impacts?

Third, the novel thoracotomy approach was initiated in 2016, whereas the study was conducted between 2010 and 2018. Overall surgical outcomes of the recent era (after 2016) might be better compared with the prior era (before 2016). It might be recommended to compare clinical outcomes before and after 2016 to minimize such a bias.

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Footnote

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