Implications of haemodynamic monitoring during left ventricular assist device support

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I congratulate the successful perioperative management done for the patient with a left ventricular assist device (LVAD), whose medications were adjusted considering remotely monitored pulmonary artery pressure that CardioMEMS supplied [1]. Our team recently demonstrated that optimized haemodynamics was associated with reduced haemocompatibility-related adverse events including heart failure recurrence [2], and efforts to optimize haemodynamics by adjusting LVAD speed and medications are recommended for successful LVAD therapy. One of the major limitations of this strategy is the invasiveness of right heart catheterization to measure haemodynamics, particularly in LVAD patients under anticoagulation and antplatelet therapy. CardioMEMS, a non-invasive procedure, might overcome such limitations and enable us to repeat haemodynamic assessments.

However, we should pay attention to the ‘decoupling’ between diastolic pulmonary artery pressure and pulmonary capillary wedge pressure (PCWP). Almost half of the clinically stable LVAD patients have such decoupling [3]. Many LVAD patients may have ‘normal’ PCWP despite ‘abnormally’ elevated pulmonary artery pressure. In other words, the pulmonary artery pressure may not always be an alternative to PCWP in LVAD patients. CardioMEMS-guided medication adjustment, blinded to the actual level of PCWP, may carry a risk of inflow cannula sucking due to excessive uptration of diuretics.

Nevertheless, I once again congratulate them on their successful management using CardioMEMS. Such a strategy would pave the way for the concept of a ‘smart pump’, which adjusts LVAD speed automatically using monitored haemodynamic parameters.

REFERENCES


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Atrio-oesophageal fistula after the cryomaze procedure: the devil is in the details

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We read with great interest, the case report from Wang et al. [1]. They reported for the first time, a rare but lethal surgical complication after a cryomaze ablation was performed by sternotomy, during an aortic valve