

Despite advances in evidence-based treatment to improve survivorship of patients with heart failure, the progressive deteriorating disease trajectory results in an expanding cohort of patients with advanced disease stage. Patients with advanced heart failure experience persistent physical and psychosocial symptoms despite optimal medical therapy. Frequent disease exacerbations require repeated hospitalisations, which heavily reduce the quality of life of patients and their families, and burden the healthcare system. The World Health Organisation advocates palliative care to improve the quality of life of patients with life-limiting diseases. However, palliative care is under-used in heart failure patients. Heart failure is characterised by its unpredictable progression and blurred boundaries between curative and palliative therapy. Therefore, international guidelines advocate an urgent need for a new care model to introduce supportive and palliative care early and gradually along the disease trajectory, overlapping and complementing active curative therapy. Preliminary research evidence is emerging to support the beneficial effects of palliative care interventions on symptom burden, quality of life and hospital service utilisation among patients with advanced heart failure. However, most of the studies focused on separate consultation by physicians or nurses, rather than an integrated heart failure and palliative care service, or providing transitional care in addition to the hospital-based palliative care service. There is no study examining the effects of integration of palliative care into heart failure management. A nurse-coordinated integrated heart failure-palliative care model is proposed.

### 23 ANTICOAGULATION FOR MECHANICAL CIRCULATORY SUPPORT

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The success of mechanical circulatory support (MCS) hinges on appropriate anticoagulation. The delicate balance between clotting and bleeding remains challenging to achieve consistently in the post-operative period and requires an individualised approach, especially in patients with acquired warfarin resistance including those with latent malignancies who have failed different anticoagulant regimens. Anecdotal studies and a recent randomised controlled trial have shown that dabigatran is not an alternative to warfarin in this setting.<sup>1 2</sup>

Predicting clotting or bleeding risk can be informative but published data remain scarce. Whereas the CHA<sub>2</sub>DS<sub>2</sub>-VASc risk score has not been demonstrated to predict thromboembolism in patients with left ventricular assist device (LVAD), the HAS-BLED score may have potential for predicting bleeding.<sup>3</sup> Although data from a pharmacogenetic study suggested that the AA genotype of VKORC1 (−1639 G>A; allele frequency of 12%) may confer advantage to appropriate warfarin anticoagulation as demonstrated by surrogate markers including decreased time to target international normalised ratio,<sup>4</sup> there remains no one-size-fits-all strategy that is reliable and scalable.

Perioperatively, the use of intravenous heparin remains the mainstay of anticoagulation at most centres that implant LVADs and/or utilise short-term MCS, and activated clotting

time remains the most commonly used measure of anticoagulation. Alternatives to intravenous heparin include bivalirudin and argatroban, but data on their comparative efficacy and safety in MCS are limited. Moreover, these agents may not be available in national health systems of many Asian countries due to costs and, possibly, a difference in the epidemiology of heparin-induced thrombocytopenia warranting their use.

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### 24 INTERVENTIONS FOR ACUTE PULMONARY EMBOLISM TO PREVENT RIGHT HEART FAILURE AND CIRCULATORY COLLAPSE

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Pulmonary embolism (PE) is a common and life-threatening disease. Circulatory collapse is usually preceded by right heart dysfunction and dilatation due to acute increase in right ventricular afterload from pulmonary artery obstruction. The rationale for early intervention is to restore pulmonary perfusion and minimise the risk of right ventricular collapse. For patients with intermediate-high and high-risk PE, endovascular intervention has emerged as potential alternative to systemic thrombolysis or surgical embolectomy. Recent studies have shown that endovascular therapies, including catheter-directed thrombolysis and/or mechanical thrombectomy and ultrasound-assisted thrombolysis, lead to early reversal of right ventricular dysfunction and dilatation compared to anticoagulation therapy alone with low risk of major bleeding. However, there is a lack of large prospective trials on long-term clinical outcomes to standardise endovascular regime and to identify subgroups that may benefit from intervention. The choice between interventional treatment modalities for intermediate-high and high-risk PE should depend on local expertise, patient characteristics and time to therapy.

### 25 WEANING OF VA ECMO: OUR EXPERIENCE

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There is a lack of consensus on the timing of decannulation for venoarterial extracorporeal membrane oxygenation (VA-