Heart failure (HF) is gaining increasing attention, with approximately 3.5 million new diagnoses in Europe every year. Together with steadily increasing patient age, HF specialists are not only confronted with a growing number of patients with cardiac disease but have to further cope with a large potpourri of extracardiac comorbidities. HF bears the risk of high morbidity and mortality. The growing awareness of HF has led to a differential definition of various disease entities, and the armamentarium of diagnostic and therapeutic tools has remarkably expanded over the last decades [1].

This issue of the ICVTS contains 8 articles presented at the European Mechanical Circulatory Support Summit (EUMS) held in December 2017. Westphal et al. [2] review novelties in HF therapy. Given the dynamic changes within the field, this up-to-date and systematic overview of the distinct treatment regimens in HF with reduced, preserved and mid-ranged ejection fraction is very welcome. Still, despite all the significant achievements in HF therapy, a cure for HF remains out of reach, and there is a growing number of patients with therapy-refractory, end-stage HF.

Ever since Barnard [3] performed ‘The Operation’ in 1967, heart transplantation has remained the gold standard and the final treatment option when all else fails, as success with the use of engineered mechanical or biological constructs has remained elusive. The latest, still-experimental data on bioengineered achievements for HF therapy have been reviewed in the article by Fujita and Zimmermann [4]. Nevertheless, as transplantable organs are not readily available, waitlists and organ allocation algorithms have had to be developed, prioritizing patients with the highest urgency. However, not every listed patient reaches the target of transplantation, and the waitlist mortality amounts to approximately 20%. Sunavsky et al. [5] present their high-volume centre experience with listing failure. Mechanical circulatory support (MCS) devices are reported to be a bail-out option. As a matter of fact, and in contrast to biologically engineered constructs, the clinical use of MCS therapy has rapidly developed. Today, left ventricular assist devices (LVADs) represent a viable alternative to cardiac transplantation. State-of-the-art pumps are centrifugal continuous-flow LVADs, e.g. the HeartWare HVAD® or the HeartMate 3®, draining blood directly from the left ventricle and pumping it into the arterial blood stream, mainly into the aorta. Refined surgical strategies are proposed in the article by Meyer and Garbade, as well as by Netuka [6, 7], sharing their experiences with the less invasive and effective implantation of the HVAD and HeartMate 3, respectively. However, a fraction of MCS patients cannot be effectively treated solely by LVAD implantation because the underlying disease may directly or secondarily affect the right heart as well. Biventricular MCS appears to be the solution, but the results after biventricular MCS are sobering when compared to LVAD patients. On the one hand, this may simply be an indication that concomitant right HF renders these sicker patients at a higher risk, but on the other hand, it has to be noted that approved devices for right ventricular support are sparse and simply lack the latest technical achievements of centrifugal continuous-flow LVAD pumps. Eulert-Grehn et al. [8] have used 2 continuous-flow centrifugal pumps as an emerging treatment option for biventricular MCS. In a further article, the authors share their remarkable single-centre experience and present dedicated implant strategies and outcome data. Future analyses will have to address optimal surgical techniques, patient selection and the optimal timing for implant. Underlining the challenging task in judging the right ventricular performance in LVAD patients, Palusziewicz and Boergermann [9] have summarized the impact of certain echocardiographic findings for the prediction of the right ventricular function after LVAD implantation.

No matter which therapeutic strategy has been deemed adequate, whether it be cardiac transplantation or MCS, treatment of end-stage HF must not only restore efficient blood circulation, but also address additional issues. As described above, comorbidities are diverse, and thus, HF therapy must be acknowledged as a multidisciplinary endeavour. Help with simple everyday logistics, physiotherapy and—not to forget—psychological healthcare is obligatory, way beyond cardiological or surgical issues. In a final article, Tigges-Limmer et al. [10] address this complex but important issue of mental health in MCS patients.
In summary, this issue highlights certain important aspects of current end-stage HF therapy. The reviewed issues and the reported results underline the tremendous and remarkable efforts and achievements of healthcare providers in the field and, at the same time, reveal the fact that the current state of HF therapy is far from perfect.

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REFERENCES


