unwell, and unfortunately a proportion will die waiting for transplant. The journey to transplantation is usually characterised by recurrent hospitalisations and may be complicated by progressive organ dysfunction. Optimisation of patient outcomes involves upward titration of evidence-based therapy (Ponikowski, et al. 2016), however, in this cohort treatment is often gradually withdrawn due to patient hypotension, renal dysfunction or other organ failure (Baumwol, 2017). Immediate diuretic therapy has been suggested, with limited evidence of long-term benefit. Short-term mechanical support with intra-aortic balloon pumping or extra-corporeal membrane oxygenation allows stabilisation in cardiogenic shock, but is often of insufficient duration to bridge to successful transplantation without complication. Newer less invasive devices may be associated with fewer complications, but have not been shown to be more durable at this point. Chronic mechanical supports, as afforded by left ventricular assist or total artificial heart devices, offer a durable solution and have been shown to improve survival as well as symptoms in end-stage heart failure patients (Aaronson, et al. 2012; Starling, et al. 2011). The success of smaller continuous flow LVADs, especially, has increased the number of patients being supported on device waiting for heart transplantation and short-term outcomes approach that of heart transplantation (Mancini & Colombo, 2015). It is hoped that improvements in LVAD technology will further improve outcomes.

REFERENCES

5 MECHANICAL CIRCULATORY SUPPORT PROGRAMME: EXPERIENCE IN HONG KONG

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Background Left ventricular assist device (LVAD) has been used for end-stage heart failure both as bridge to transplantation (BTT) and destination therapy (DT) for patients not suitable for heart transplantation. We aimed to review the experience of LVAD therapy in Hong Kong.

Method Patients who had LVAD implantation from August 2010 to October 2017 for end-stage heart failure were reviewed.

Results A total of 55 patients had LVAD implanted for end-stage heart failure (48 as BTT, 87.3%). Majority are male (n = 45, 81.8%) with mean age 49 years, and mean left ventricular ejection fraction 17%. Most patients were INTERMACS 2 to 3 (n = 43, 78.2%) while nine patients (16.4%) were INTERMACS 1. Overall survival rates were 84.7% at 6 months, 80.8% at 12 months, 78.3% at 2 year and 68% at 4 year. Long-term survival was not significantly different between BTT and DT groups (70.1% vs 51.4% at 4 year, p = 0.099 by log-rank) while survival was significantly inferior for INTERMACS 1 patients (26.7% vs 76.2% at 4 year, p = 0.016). Most common complication was driveline infection (29.1%) followed by cerebrovascular accident (23.6%), gastrointestinal bleeding (20%), ventricular arrhythmia (14.5%), right heart failure (10.9%), sepsis (9.1%) and driveline malfunction (7.3%). Pump thrombosis occurred in only 1 case (1.8%).

Conclusion LVAD therapy as BTT has become the standard therapy for potential heart transplant candidates in Hong Kong and its role as DT is also emerging. Timely recognition and referral is the key to achieve the best outcome in this sick patient population.

6 MECHANICAL CIRCULATORY SUPPORT PROGRAMME AT CHIBA UNIVERSITY HOSPITAL, JAPAN

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Management of advanced (ACC Stage D) heart failure remains a major challenge. Left ventricular assist system (LVAS) has been applied with increasing frequency and support duration. Three types of implantable device (HeartMate II, Jarvik 2000, and EVAHEART) are currently available as bridge-to-transplant in Japan. As serious shortage of donor organs is limiting the number of heart transplantation (approximately 50 cases per year), the mean waiting period for devices has exceeded 1000 days. Although survival rate is acceptable (92% at 1 year, 84% at 3 years), there still exists several limitations including infection, thromboembolism, and bleeding. We review currently available devices with special reference to their role and limitations based on our own experiences for the last several years.

Mechanical circulatory support (MCS) for acute heart failure is another challenging area. Cardiogenic shock due to acute myocardial infarction, fulminant myocarditis, or acute deterioration of cardiomyopathy requires rapid establishment of systemic circulatory support. PCPS (ECMO) is a widely applicable and potent MCS, but limitations including pulmonary congestion and progressive multi-organ failure demand further modifications. At our institution, we often unload the left ventricle with an aim to improve lung congestion and end-organ dysfunction before establishing LVAS or biventricular VAS as a bridge to decision. Centrifugal pump is more often used instead of paracorporeal pulsatile devices because of its higher systemic support flow. We have applied MCS in 21 INTERMACS Profile 1 patients and 12 patients survived to long-term LVAS or recovery. We discuss our step-by-step strategies for cardiogenic shock patients using MCS.

7 EARLY EXPERIENCE WITH IMPLANTABLE LVAD AT SAMSUNG MEDICAL CENTRE, SEOUL

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Background Left ventricular assist device (LVAD) has been used for end-stage heart failure both as bridge to transplantation (BTT) and destination therapy (DT) for patients not suitable for heart transplantation. We aimed to review the experience of LVAD therapy in Hong Kong.

Method Patients who had LVAD implantation from August 2010 to October 2017 for end-stage heart failure were reviewed.

Results A total of 55 patients had LVAD implanted for end-stage heart failure (48 as BTT, 87.3%). Majority are male (n = 45, 81.8%) with mean age 49 years, and mean left ventricular ejection fraction 17%. Most patients were INTERMACS 2 to 3 (n = 43, 78.2%) while nine patients (16.4%) were INTERMACS 1. Overall survival rates were 84.7% at 6 months, 80.8% at 12 months, 78.3% at 2 year and 68% at 4 year. Long-term survival was not significantly different between BTT and DT groups (70.1% vs 51.4% at 4 year, p = 0.099 by log-rank) while survival was significantly inferior for INTERMACS 1 patients (26.7% vs 76.2% at 4 year, p = 0.016). Most common complication was driveline infection (29.1%) followed by cerebrovascular accident (23.6%), gastrointestinal bleeding (20%), ventricular arrhythmia (14.5%), right heart failure (10.9%), sepsis (9.1%) and driveline malfunction (7.3%). Pump thrombosis occurred in only 1 case (1.8%).

Conclusion LVAD therapy as BTT has become the standard therapy for potential heart transplant candidates in Hong Kong and its role as DT is also emerging. Timely recognition and referral is the key to achieve the best outcome in this sick patient population.