17 LEFT VENTRICULAR RECONSTRUCTION SURGERY

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Acute myocardial infarction and ischaemic cardiomyopathy are important causes of heart failure (HF). With ageing populations in developed nations, the incidences can be expected to rise in the coming decades.

Stretch of a left ventricle (LV) scar results in detrimental ventricular remodelling, LV dilatation and a change in geometry from elliptical to spherical. These result in higher wall stress and less effective ventricular contractions.

Surgical techniques to restore the shape of the remodelled ventricle were introduced in early 1980s.¹ The RESTORE registry and others reported favourable outcomes in >5000 patients.² However, the NHLBI and NIH-funded prospective randomised STICH Trial found no additional benefit of LV reconstruction in addition to coronary bypass grafting.³

The STICH Trial was well conducted. The neutral findings did curb enthusiasm for LV reconstruction surgery. However, the interpretation of STICH was not incontrovertible and had sparked heated debates.⁴ Subsequent re-analysis of STICH confirmed significant survival benefit when adequate LV volume reduction was achieved.⁵

New data from experienced centres continued to demonstrate efficacy of LV reconstruction surgery.⁶⁻⁷ The 2013 ACCF/AHA Guideline for the Management of Heart Failure recommended LV reconstruction for HF with reduce ejection fraction with a recommendation class IIb, level of evidence B.⁸ Unsurprisingly, the field remains confused about the role of this treatment.

In order to facilitate appropriate sizing of the LV during reconstruction, graduated balloons are now available for use as templates. A new device has been developed for less invasive off-pump LV reconstruction and a Phase 2 clinical trial is now underway.

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18 SURGERY FOR HEART FAILURE: EXPERIENCES FROM SEVERANCE CARDIOVASCULAR HOSPITAL, SEOUL, KOREA

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Since the first successful heart transplant in Korea in 1992, the case volume has been rapidly increasing. Compared with ISHLT registry data, the Korean KONOS registry data show similar post-transplant long-term survival rates. At Severance Cardiovascular Hospital (SCH) of Yonsei University, the number of heart transplants has been growing steadily since 2010. Between 1994 and 2018, 174 heart transplantations had been performed. Mean age of recipients and their follow-up duration were 42.9 and 3.2 years, respectively. Pre-operative CPR was performed in 18 (10.3%) patients, and extracorporeal membrane oxygenation (ECMO) was applied in 35 (20.1%) patients. In-hospital mortality was 19% and 10 year survival rate was 71.7%. By multivariate analysis, risk factors for in-hospital mortality were pre-operative elevated bilirubin and lactate levels. Risk factors for overall mortality were pre-operative dialysis, and high bilirubin and lactate levels. Gender and pre-operative body weight mismatch and ECMO bridging were not independent risk factors for mortality.

The volume of LVAD implants had been low in Korea due to reimbursement limitations. However, from October 2018, a new national insurance policy was implemented to provide for 95% of total device cost. This change is projected to increase device implant rates and patient access.

In conclusion, size-mismatch did not affect LVAD outcomes for the East Asian population. Organ protection remains an important factor for long-term survival. In the short term, MCS including ECMO may be used to reverse organ dysfunction as a bridge to recovery or decision. Finally, LVAD will be a main strategy for bridge-to-transplant (BTT) in Korea.

19 UPDATE OF LVAD THERAPY IN JAPAN

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Left ventricular assist device (LVAD) has been increasingly utilised for the treatment of advanced (ACC/AHA stage D) heart failure. Three types of implantable device (HeartMate IITM, Jarvik 2000[®], and EVAHEARTTM) are currently available as a bridge-to-transplant in Japan.