

Heart Transplantation

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Introduction

A heart transplant, also known as a cardiac transplant, is a surgical technique used to treat patients with end-stage heart failure or serious coronary artery disease that have failed to respond to other medical or surgical procedures. While secondary prevention, such as exercise therapy, is recommended in the management of patients who have undergone HTx, little is known about their metabolic and physiological effects. Primary graft failure, right ventricular dysfunction, rejection, and infections are among the early complications that may affect survival, whereas late complications include cardiac allograft vasculopathy and neoplasms.

Congenital heart disease (CHD) is a common birth defect that affects 0.4–1% of the population. The majority of these patients, including those with complicated lesions, now live to adulthood thanks to modern heart surgery. As a result, the number of adult survivors with complex CHD is rising. Many survivors of infant heart surgery for CHD are not healed, and some are at high risk of experiencing end-stage heart failure as young adults, despite these incredible advances in surgical repair choices and thus outcome. Heart failure is a significant contributor to late morbidity and mortality in adults with coronary artery disease. Orthotopic HTx is also the only effective treatment choice for patients who are nearing the end of their illness. Given these shifts in the epidemiology of CHD patients, we should anticipate an increasingly growing population of adults with CHD to be tested for HTx in the coming decades.

The number of patients living to become adults with congenital heart disease (ACHD) has risen as procedures for corrective and palliative surgery in congenital heart disease improve. A large number of these patients will experience advanced heart failure, which has a wide range of symptoms that makes predicting life expectancy difficult. In contrast to acquired heart failure, there are few evidence-based therapies available to alleviate symptoms and extend survival. As a result, a number of patients with ACHD will undergo heart transplantation.

Recent evidence indicates that mechanical circulatory support may be used effectively as a bridging therapy with further practise and early consideration. Despite having a higher early mortality rate, ACHD patients have a better long-term survival rate after transplantation due to their younger age and lack of comorbidities. Outcomes will continue to improve with early referral, thorough evaluation of each individual's particular anatomy and physiology, and treatment in a centre with experience with ACHD patients and transplantation. Finally, limited evidence suggests that HTx patients with high-intensity training have a higher quality of life. In conclusion, the available evidence suggests that exercise has the potential to be an important therapy for patients who have undergone HTx. However, the lack of evidence necessitates more well-designed and sufficiently powered trials to back up its efficacy and uncover optimal exercise characteristics, allowing for more efficient and person-tailored exercise prescription.

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Received 13 May 2021; Accepted 14 May 2021; Published 15 May 2021

How to cite this article: Alexandra R. Lucas. "Heart Transplantation." *J Transplant Technol Res* 11 (2021): e105.