Cardiopulmonary Exercise Testing in Heart Transplant Candidates

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Abstract

***Introduction**: We evaluated the results of patients with congestive heart failure (CHF) who underwent cardiopulmonary exercise testing (CPET) as part of their assessment for heart transplantation in order to examine the relationship between exercise capacity and resting indices of left ventricular function in these patients. **Materials and Methods**: Twenty-seven ambulatory heart transplant candidates underwent CPET using a cycle ergometer and an incremental work-rate protocol till symptom-limitation. These patients included 24 men and 3 women with a mean age of 42.3 years. The aetiology of CHF was coronary artery disease in 14 patients, dilated cardiomyopathy in 11 patients, and congenital heart disease in 2 patients. Mean resting left ventricular ejection fraction (LVEF) was 19% (range 7% to 36%). **Results**: Thirteen of the 27 tests performed were maximal studies and all except 2 subjects attained a measurable anaerobic threshold during CPET. Of the 13 maximal tests, the causes of exercise limitation were cardiomyopathy in 3 patients, ischaemic heart disease in 2 patients, significant oxygen desaturation in 2 patients, ventilatory limitation due to obstructive lung disease in 1 patient, ventilatory limitation secondary to a restrictive lung disease in 3 patients, and combined obstructive ventilatory and cardiovascular limitation in 2 patients. There was no significant correlation between resting LVEF and peak VO_2 percent predicted ($r = 0.14$, $P = 0.49$). **Conclusions**: Exercise intolerance in patients with CHF may not be related to limited cardiac reserve and non-cardiac causes of exertional symptoms should also be considered. CPET is useful for the evaluation of functional capacity and mechanisms of exercise intolerance in patients with CHF.*

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