**IMPACT OF EXERCISE CAPACITY FOR RIGHT AND LEFT HEART FAILURE**

**A. Hirashiki**, T. Kondo, A. Shimizu, T. Murohara

Nagoya University Graduate School of Medicine, Nagoya, Japan

Cardiopulmonary exercise testing (CPX) is a diagnostic tool used to detect serial changes in exercise capacity, and it is of particular benefit for patients with chronic heart failure to assess peak oxygen uptake (peak VO2) and minute ventilation/carbon dioxide production (VE/VCO2) slope. In addition, it provides an integrative approach to assessing cardiac function, gas exchange, and muscular physiology. We have shown the impact of predictor of poor prognosis on exercise oscillatory ventilation during CPX, heart rate recovery, and combination peak VO2 and late gadolinium enhancement on cardiovascular magnetic resonance in patients with dilated cardiomyopathy (DCM).

On the other hand, pulmonary hypertension (PH) is defined by pulmonary arterial pressure (PAP), it is characterized by right heart failure in its advantage stages. In the previous study, in order to reach the predefined treatment goals, combination treatment, including endothelin receptor antagonists (ERAs) and phosphodiestelase-5 (PDE5) inhibitor, eventually became necessary in almost half of the patients. Thus, the use of combination treatment may yield acceptable results in the majority of patients with PAH. Peak VO2 has been shown to be predictive of survival in PH, with 3 studies providing cutoff values of 10.4 ml/min/kg, 11.5 ml/min/kg, and 13.2 ml/min/kg below which mortality is increased. Current guideline shows peak VO2 has been suggested as a goal of therapy, with >15 ml/min/kg indicating better prognosis. According to this guideline, our treatment strategy performed sequential combination therapy in PAH. These results showed at baseline and after 3, 6 and 12 months after PAH-specific treatment, mean peak VO2 was 11.8, 13.2, 13.8, and 13.2 mL/kg/min and mean VE/VCO2 slope was 58, 49, 45 and 48 mm Hg, respectively.

These investigations indicate variables obtained from CPX: (1) reflect varying degrees of PH severity; (2) positively respond to several pharmacologic and surgical interventions; and (3) may provide prognostic value.