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The Use of 6-minute Walk Test for Monitoring Exercise Capacity of Cardiac Patients with Secondary Pulmonary Hypertension

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Introduction

Patients with heart failure and secondary pulmonary hypertension have reduced exercise capacity and higher mortality. Pulmonary hypertension can be a progressive and life threatening disease. Physical exertion on this group of patients has typically been discouraged. Monitoring of exercise capacity of this group of patient was usually based on their subjective description of exercise endurance. 6-minute walk test (6-MWT) is an objective measure of functional exercise capacity. There was moderate evidence to demonstrate the reliability and validity of the 6-minute walk test for cardiac patients (Bellet et al, 2015). It allows physicians and physiotherapists monitoring the efficiency of specific treatments and the natural course, severity and prognosis of the disease (Francis et al, 2000; Thenappan et al, 2007).

Objectives

To assess the exercise capacity for patients with heart disease and pulmonary hypertension using 6 minute walk test.

Methodology

Patients diagnosed with pulmonary hypertension secondary to heart diseases were included in this project. Seventeen patients (6 men and 11 women; age $\bar{x}$=23, S.D. 12.34) of Queen Mary Hospital were prescribed medication Sidenafil and Bosentan to control the progress of the disease and assessed by using 6-minute walk test in different time intervals (from 3 month to 2 years).

Result

The mean 6-MWT distance was 354 m (S.D. 98.45). This was much reduced

compared with local healthy subjects (664m). The activities level of our subjects was at around 2.5-3.3 METS. It corresponded to activities like cooking, light housekeeping, walking downstairs to weight lifting and water aerobics. It was lower than the local healthy subjects with activities level at around 4.5 METS which corresponded to activities like slow swimming and golf. The 6-MWT distance was improved significantly with medication in repeated measures of pre- and post-medication ($\bar{x}$=70m, p=0.019). The functional exercise capacity of these subjects can be maintained in a stable condition over a two year period. 6-minute walk test was a useful objective measure for monitoring exercise capacity of cardiac patients with secondary pulmonary hypertension in addition to subjective feeling of exercise endurance. It provides useful information for doctors and patients.