Association between findings of Cardio-Pulmonary Exercise Teston the treadmill and stationary cycle in patients with severe heart failure (LVEF≤35%)

M.Nazarieh;MD

Department of Sports and Exercise Medicine (TUMS

ABSTRACT

Background ; PeakVO2 is one of the most practical findings during cardiopulmonary exercise test (CPET), that plays an important role in determining prognosis and need for heart transplantation.Considering the well-known association between different parameters of CPET and prognosis in patients with advanced heart failure (EF \leq 35%), evaluation of these indexes,by CPETcan be performed on treadmill or bike, which has both advantages and disadvantages.There are small studies on this subject of comparing the findings between these two methods.

Methods and Materials ; 30 stable patients (average age:40.57+-12.46, average Hight:172.15+-8.61) with severe heart failure $(EF \le 35\%)$ who had been diagnosed for at least one year were enrolled in thestudy. They were not candidate for more special interventions other than heart transplantation, and they didn't have any history of advanced pulmonary disease. The patients were excluded from the study if there was a musculoskeletal disease that prevented proper testing. After familiarizing the patients with the test method, the CPET test was done randomly on a stationary cycle and treadmill for two separate days with a minimum and maximum of 24 to 72 hours.For the bicycle protocol, we used a 5w/m to 25w/m and for a treadmill, the ramp protocol was used with an increase of 0.3km/hr/min and a slope of 0.5% per minute for a minimum of 5 minutes. The parameters obtained from a CPET on a stationary bike and treadmill were gathered and analyzed.Results ; In our study, 30 men with severe HF who were candidate for heart transplantation performed CPET on the treadmill and stationary bikefor two separate days.All the findings were analyzed and compared between these two methods and results were as follow: PeakVO2 ml/kg/min was higher during treadmill as compared with stationary cycle testing (20.5+-3 vs 16.7+-3 ml/kg/min; p=0.00). On the other hand, percent predicted peakVO2 ml/kg/min was higher during treadmill as compared with a stationary bike testing quantitatively (0.58+-0.14 vs)0.52+-0.15; p=0.00). In contrast, VE/VCO2 slope values andpercent predicted peakVO2 ml/kg/min did not differ



Keywords;

Heart failure, cardiopulmonary exercise test, VE/VCO2 slope, Percent Predicted peakVO2 ml/kg/min

Biography: M.Nazarieh has completed her Sports Medicine Specialty from School of Medicine in Tehran University of Medical Sciences, Iran. She has founded Obesity Clinic in the Sports MedicineDepartment at related hospital, the first multidisciplinary obesity clinic in the TehranUniversity. She is also the Director of sports nutrition research group in Sports MedicineResearch Center. She has published more than 10 papers about obesity and exercise

10th World Congress on Physical Medicine and Rehabilitation , February 12-13, 2020 Auckland, Newzealand

Abstract Citation : <u>M.Nazarieh</u>, <u>Association betweenfindings ofCardio-Pulmonary Exercise Teston the</u> treadmill and stationary cycle in patients with severe heart failure (LVEF<35%), <u>REHABILITATION</u> MEDICINE 2020, February 12-13, 2020 Auckland, <u>Newzealand</u>