Correlation between Respiratory Function and Functional Exercise Capacity of Patients with COPD Presented to Two Selected Government Hospitals in Colombo District

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Six Minute Walk Distance (6MWD) is one of the popular methods used to assess functional exercise capacity of patients with Chronic Obstructive Pulmonary Disease (COPD) in clinical settings. A patient with COPD usually has reduced Forced Expiratory Volume 1 (FEV_1) in spirometry test results. To identify the correlation between functional exercise capacity and respiratory function, Six-minute walk test and spirometry tests results were used in this study. The objective of this study was to identify the correlation between the FEV_1 and 6MWD of patients with COPD presented to the National Hospital for Respiratory Diseases, Welisara and Chest Clinic at Medical Research Institute Sri Lanka. This descriptive cross-sectional study was conducted with 25 patients (19 males, 6 females) suffering from COPD aged between 40 to 60 years. The spirometry test results were collected by applying the method of American Thoracic Society (ATS) spirometric Criteria and the functional exercise capacity was tested through 6MWD. COPD patients with all stages were included in this study and coexisting restrictive patterns were excluded. The mean value and standard deviation of FEV1, 6MWD and age were 49.76±15.86%, 485±113.80 metres, 56.06±4.05 years, respectively. Pearson correlation coefficient test was used to measure the linear relationship between FEV1 and 6MWD according to the severity stage of COPD. The test results showed a positive correlation between moderate stage of COPD and 6MWD ($p=0.060$, $r=0.557$), severe stage of COPD and 6MWD ($p=0.013$, $r=0.717$) and very severe stage of COPD and 6MWD ($p=0.77$, $r=0.923$). The study results revealed that there is a moderate and significant positive correlation between functional exercise capacity and respiratory function of patients suffering from moderate, severe, and very severe stage of COPD, respectively.

Keywords: Six minute walk distance, Chronic obstructive pulmonary disease, Forced expiratory volume 1, Forced vital capacity