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Title: Change in lung functions in patients with COPD during 6MWT

Dr. Mir Shad 27813 Ali shadphysio@yahoo.co.in¹, Dr. Ritesh 27814 Singh ritesh_singh007@rediffmail.com¹ and Dr. Deepak 27815 Talwar dtlung@hotmail.com MD¹.¹ Metro Centre for Respiratory Diseases, Metro Multispeciality Hospital, Noida, Uttar Pradesh, India, 201301 .

Body: Introduction: Effect of exercise on Inspiratory Capacity(IC)is well understood in patients with COPD but the dynamic relationship between lung functions and parameters of 6MWT are not well established.Aim of the study is to evaluate the effect of 6MWT on spirometric indices and IC in COPD patients Method:103 diagnosed COPD patients prospectively performed 6-minute walk test (6MWT). Pre and post test lung functions were measured including FEV₁, FVC and Inspiratory Capacity (IC). Continuous SpO₂ monitoring was done during the test. Paired sample t-test was used to compare these results. Pearson correlation coefficient was calculated to check relation between various spirometric and 6MWT parameters Results:101 patients were able to complete 6MWT.The mean age of patient's was 61.63±9.22years.There was significant reduction in IC after the test in these patients (2.06±0.73L to1.94±0.73L;p=0.004)and insignificant decrease in FEV₁%predicted after the test (48.71±19.71%to48.02±18.05%;p=0.142).Mean distance covered during 6MWT was 392.61±125.63m,and did not show correlation to change in IC(r=-0.241;p=0.092).Maximum desaturation per unit change in distance(ΔSpO₂/6MWD)during 6MWT was significantly correlated with IC and FEV₁ after the test (r= -0.362;p= 0.005 and r=-0.447;p= 0.0001 respectively),but was not affected by change in IC (r= 0.100;p= 0.451). ΔSpO₂/6MWD and not change in IC was significantly affected by the disease severity (p=0.003vsp= 0.255) Conclusion:The study showed fall in saturation per unit distance walked in 6MWT is a sensitive parameter of disease severity in COPD. Hyperinflation(fall in IC)doesn't worsen with more distance walked negating its impact on development of breathlessness during 6MWT.