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Title: Factors predicting exercise-induced oxygen desaturation in stable COPD

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Body: Background and objective:- Some resting pulmonary function and blood gas parameters might predict exercise-induced oxygen desaturation in patients with stable COPD. We aimed at studying these factors. Patients and methods:- We tested 55 patients with stable COPD (FEV₁/FVC%: 54.31). Resting pulmonary function, arterial blood gases, echocardiography, and incremental cardiopulmonary exercise testing were done for all patients. We diagnosed exercise-induced oxygen desaturation if O₂ saturation decreased $\geq 4\%$ with exercise. We compared desaturated (DS) with non-desaturated (NDS) patients. Results:- Exercise induced oxygen desaturation (DS) occurred in 28 subjects while 27 were non-desaturated (NDS). FEV₁% of predicted was significantly lower in DS (33.75 \pm 9.28) than NDS patients (49.49 \pm 19.86, P<0.001). Diffusing capacity DLCO % predicted was significantly lower in DS (47.54 \pm 20.25) than NDS (67.35 \pm 19.62, P<0.001). Resting O₂ saturation SaO₂ % was significantly lower in DS (91.9 \pm 2.88) than NDS patients (95.94 \pm 2.9, P<0.001). Resting PaCO₂ mmHg was significantly higher in DS (63.46 \pm 11.58) than NDS patients (38.97 \pm 6.38, P<0.001). Pulmonary artery systolic pressure mmHg was significantly higher in DS (42.21 \pm 11.90) than NDS (34.15 \pm 12.14, P< 0.01). Medical Research Council MRC dyspnea score was significantly higher in DS (3.54 \pm 0.69) than NDS patients (2.44 \pm 0.97, P<0.001). On the other hand, there were no statistically significant differences in FEV₁/FVC%, total lung capacity, residual volume, and resting heart rate between the DS and NDS patients. Conclusion:- FEV₁%, DLCO, resting SaO₂, resting PaCO₂, pulmonary artery systolic pressure and MRC dyspnea score can predict exercise-induced desaturation in stable COPD.