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Title: Determinants of exercise capacity in patients with COPD without other comorbidities

Dr. Gloria 10021 Samperiz gsamperiz@gmail.com MD [1], RN. Laura 10022 Madre lauramadrevilluendas@hotmail.com [1], RN. Pablo 10023 Cubero jpcubero@salud.aragon.es [1], RN. Marta 10024 Forner martaforner@hotmail.com [1], Dr. Elena 10025 Forcen elenaforcen@hotmail.com MD [1], Dr. Santiago 10032 Carrizo sant422@separ.es MD [1] and Dr. Jose M. 10033 Marin jmmarint@unizar.es MD [1]. [1] Respiratory Service, Hospital Universitario Miguel Servet, Zaragoza, Spain .

Body: Introduction. The 6 min walking test (6MWT) is frequently used to assess exercise limitation and exertional dyspnoea in COPD. Age, sex, metabolic, cardiovascular, neuromuscular and respiratory variables can contribute to determine the final individual value of the 6MWT. Aims. To evaluate exercise performance with the 6MWT in COPD patients free of other co-morbidities. Methods. From the Bode International Cohort Study we selected 148 men with COPD and no other cardiovascular, cerebrovascular, metabolic o neuromuscular disorder. In addition, patients who were taking beta-blockers or anti-hypertensives were also excluded. A pre-specified protocol including two standardized 6MWT was applied to all patients. Results. The mean ± SD of the post bronchodilator FEV1 % predicted and 6MWT was 62 ± 21 and 398 ± 99 meters respectively. Walked distance correlated significantly with age, height, weight, baseline dyspnoea (as assessed by the MRC scale), CAT questionnaire, spirometric parameters, lower heart rate (HR) and higher basal O2 Saturation (O_2Sat). After forward stepwise multiple linear regression to evaluate the predictive value of the different factors to explain the 6MWD, four variables stay in the model: age, MRC score, change in O_2Sat and change in HR from baseline to the end of the test (adjusted r^2 = 0.33, $p<0.001$). Conclusions. In COPD without comorbidities, age, exertional dyspnoea, and higher changes in O_2Sat and HR were the most important determinants of exercise capacity. Funded by Instituto Carlos III, Madrid, Spain (FIS 09/02449).