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Title: Does a predominant clinical COPD phenotype predict different outcome responses to pulmonary rehabilitation?

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Body: Introduction A new multivariate model, using HRCT as a criterion standard, based on variables collected at rest has been proposed to identify two or more relevant phenotypes of COPD, emphysema (E) and chronic bronchitis (BC) (Pistolessi et al. Respir Med 2008;102:367-76). The aim of the study is to verify whether two distinct COPD groups whose characteristics correspond to either an airway obstructive or a parenchymal destructive COPD phenotype exhibit different outcome responses to a pulmonary rehabilitation program. Methods In 55 BC and 38 E patients we assessed the outcome responses to a pulmonary rehabilitation program (PRP): chronic exertional dyspnea (MRC, BDI and TDI), leg and arm ergometry, and exercise dyspnea by Borg scale during 6mWT. Four cluster descriptors of the language of dyspnea (work/effort, inspiratory difficulty, shallow breathing and expiratory difficulty) allowed the qualitative assessment of the symptom. Results At baseline, age, BMI, FEV₁ and DLco were lower, while FRC and TLC were higher in E. 6mWT, Borg, SGRQ and ergometry were similar in E and BC. Frequency of response for inspiratory difficulty cluster during 6mWT was significantly greater in E than in BC. PRP significantly improved most outcomes, similarly in the two groups, but neither in E nor in BC did significantly modify the frequency of response of cluster descriptors. Conclusion PRP allowed both COPD groups to improve similarly health status and exercise tolerance and to modify the intensity but not necessarily the quality of dyspnea.