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Title: Prevalence and risk factors of co-morbidities in subjects with mild and moderate COPD detected by screening

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Body: Purpose: There is little information about comorbidities and their risk factors in the preclinical stages of COPD. This study aims to investigate the prevalence of pre-morbid risk factors and co-morbid diseases and its association with daily physical activity in subjects detected with COPD by spirometry screening. Methods: Sixty subjects with mild to moderate COPD (63±6yrs, 68%male) were compared with 60 smoking controls (62±7yrs, 70%male) and 60 never-smoking controls (62±6yrs, 57%male). Comorbidities (cardiovascular, metabolic and musculoskeletal disease) and daily physical activity (SenseWear Armband) were measured objectively. Results: In subjects with COPD the prevalence of pre-morbid risk factors and co-morbid diseases was significantly higher compared to age-matched never-smokers, but was similar to smokers not suffering from COPD.

In COPD and smoking controls, the combination of cardiovascular and musculoskeletal disease was the most prevalent (15% and 12%, respectively). In a multivariate logistic regression analysis, physical inactivity and smoking, but not COPD, were found to be independent risk factors to predict ≥2 co-morbidities.

Conclusions: Pre-morbid risk factors and co-morbid diseases are more prevalent in the preclinical stages of COPD and smokers without COPD. Physical inactivity and smoking but not airflow obstruction, appear as the main determinants for the presence of comorbidities.