European Respiratory Society
Annual Congress 2013

Title: From early to advanced COPD: What differences in balance and risk of falling?

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Body: Patients with COPD have impaired balance and high risk of falling. However, this was only explored in advanced COPD. This study aimed to assess balance and risk of falling considering all COPD grades and explore the predictors of risk of falling. A cross-sectional study with 106 outpatients with COPD was conducted. Spirometry was first performed. Anxiety and depression were assessed with the Hospital Anxiety and Depression Scale and functional limitations due to dyspnoea with the Modified British Medical Research Council questionnaire (mMRC). Balance and risk of falling were determined using the Timed Up and Go test (TUG). Descriptive and inferential statistics were applied. On average, participants (age 72.1±8.5yrs; FEV_1 62.7±24.1%predicted) performed the TUG in 11±4.8s. A total of 46 (43.4%) participants had a TUG performance worse than reference values of age-matched healthy peers. Risk of falling (TUG≥13.5s) was significantly higher in participants with severe to very severe COPD (45.7%) comparing with those with mild (5.9%) and moderate (18.9%) COPD (p=0.001). Participants at risk of falling were older (p=0.002), had a lower FEV_1%predicted (p=0.001), a higher mMRC score (p=0.049) and more depression symptoms (p=0.008) than those at no risk of falling. Age (OR 1.1; 95%CI=1.03-1.16) and depression symptoms (OR 1.2; 95%CI=1.08-1.40) were significant predictors of risk of falling. Balance impairment and risk of falling are already present at early COPD, although more evident at advanced grades. These findings highlight the importance of balance assessment in patients at all COPD grades and the inclusion of balance training and fall prevention strategies as part of Pulmonary Rehabilitation.