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Session A15 - TAKING PULMONARY REHABILITATION TO THE NEXT LEVEL

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Pulmonary Rehabilitation With Balance Training for Fall Reduction in Chronic Obstructive Pulmonary Disease: A Randomized Controlled Trial

May 21, 2023, 9:12 AM - 9:24 AM

Walter E. Washington Convention Center, Room 150 A-B (Street Level)

Participant

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Abstract

Introduction: Patients with Chronic obstructive pulmonary disease (COPD) have an increased fall risk in part due to impaired balance and other comorbidities. Traditional pulmonary rehabilitation (PR) primarily focuses on exercise, education and psychosocial support. Long-term effects of adding balance training to traditional PR on falls is not well understood.

Methods: To determine the effect of a tailored balance exercise program on the 12-month rate of falls in adults with COPD, we conducted a prospective, parallel-group, multi-center randomized controlled trial (RCT) in Canada, the United Kingdom, Portugal, and Australia (NCT02995681). Eligible participants were adults with COPD at a high risk of falls who were randomly assigned (1:1) to the intervention or control group. Both groups received traditional PR (2-3 times per week for 8-12 weeks). The intervention included the addition of tailored balance training. Primary outcome was the incidence of falls at 12-month follow-up using monthly fall diary calendars. We employed zero-inflated generalized linear mixed models (Poisson regression) to examine the effect of the intervention on the rate of falls and used multiple imputation to deal with missing values as the sensitivity analysis.

Results: This study included 245 participants (125 in the intervention group and 120 in the control group), with the mean age at study entry being 72±9 years (from 37 to 95 years); 104 (42%) were female; 146 (60%) had a fall history in the last two years. Of the 245 participants, 67 (27%) did not return any fall information during the follow-up and therefore were excluded. We included 178 participants (91 assigned to intervention group and 87 assigned to control group) in the main analysis with well-balanced baseline characteristics between the two groups. Falls occurred in 41 (45%) participants in the intervention group and 33 (38%) in the control group (Chi-Square= 0.93, P=0.34). The mean

number of falls was similar between the two groups (intervention: 1.10 ± 2.43 versus control 1.01 ± 1.87). We did not find statistically significant effects of adding balance training to PR on the rate of falls in the mixed models (Relative risk 1.30; 95% CI: 0.59-2.87, $p=0.52$). The results are robust after multiple imputations for missing data.

Conclusion: Adding tailored balance training to traditional PR was not different from PR only in terms of the rate of falls over 12-months of follow-up in adults with COPD with high fall risk. COVID-19 pandemic impacted study recruitment, participant retention and data collection.