DOI: 10.5152/TurkThoracJ.2019.168

[Abstract:0231] OP-021 [Accepted: Oral Presentation] [Pulmonary Rehabilitation and Chronic Care]

Effect of Pulmonary Rehabilitation on Balance Control in Patient with COPD

Murat Öztürk[1], Mine Gülden Polat[1], Meral Karakış[1], İpek Özmen[2], Elif Yıldırım[2], Murat Emre Şahal[2], Rüya Evin Aydın[2], Nurgül Yer[2]

[1]Department of Cardiopulmonary Rehabilitation, Marmara University Institute of Health Sciences, İstanbul, Turkey
[2]University of Health Sciences Süreyyapaşa Chest Diseases and Thoracic Surgery Training and Research Hospital, İstanbul, Turkey

Objectives: Chronic obstructive pulmonary disease (COPD) is recognized as a systemic disease that effect peripheral muscles by reduced muscle mass, fiber type profile, capillarity, strength, endurance, and bioenergetics. When the literature is exemined, there is a limited number of publications for balance problems in patients with COPD. This study aimed at assessing the effects of a pulmonary rehabilitatin (PR) program, with a specific component of balance training on functional balance of patients with COPD.

Methods: 63 patients with COPD who aplied to pulmonary rehabilitation unit. Patients were assigned randomly to PR Group (n=31) and PR-Balance Training Group (n=32). PR group underwent at least 8 weeks PR and PR –Balance group underwent balance training concurrently with PR. Forced expiratory volume 1. second (FEV_1) Forced vital capacity (FVC), Exercise capacities (VO2max), St. George's Respiratory Questionnaire(SGRQ), anxiety and depression using the Hospital Anxiety and Depression Scale (HADS), Tandem Romberg (TR), One Leg Standing Test (OLST), Berg Balance Scala (BBS), Time Up and Go test (TUG) were assessed in both groups. The measurements were performed before and after treatment. Wilcoxon-signed rank test was used for intra-group assessments, ANOVA test was used for multiple comparisons.

Results: Statistical analysis showed that there was a significant difference in development of both dynamic and static balance status (BBS, TR, OLST-R, OLST-L), Exercise capacities of patients (VO2 max), Hospital anxiety depression scales (HADS) ($p<0.005$) and there was no significant difference in terms of forced expiratory volume 1. second (FEV_1) ($p>0.005$) and Forced vital capacity (FVC) ($p>0.005$). When both groups compared we found significant differences in Berg Balance Scala (BBS) Time Up and Go (TUG) scala, forced expiratory volume 1. second (FEV_1), Forced vital capacity (FVC) and George's Respiratory Questionnaire Total Score (SGQR tt) in PR-Balance Training Group.

Conclusion: As a result of this study, it has been shown that the application of pulmonary rehabilitation affects the balance statu positively. Therefore, it has been concluded that balance training should be included in pulmonary rehabilitation programs. Our findings support the benefits of combining balance training with PR more effective than traditional PR on dynamic balance statu.

Keywords: COPD, Pulmonary rehabilitation, Balance training