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Evaluation of Balance, Depression, Cough Strength and Life Quality According to COPD

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Objectives: COPD is a systemic disease that affects not only pulmonary function in addition physical capacity, psychological situation and sociality. The aim in this study is evaluating balance, depression, cough strength and life quality in patients who are diagnosed as COPD and improving the awareness of clinicians.

Methods: We used Berg Balance Scale (BBS) for measuring balance ability and fall risk, Beck Depression Inventory (BDI) for depression level, Saint George Respiratory Questionnaire (SGRQ) for observing life quality, Peak Cough Flow (PCF) for cough strength, CAT and mMRC for measuring dyspnea level. PEFmeter was used with nozzle and mask. People coughed 3 times to the PEFmeter and the highest PCF measurement was recorded. Spearman correlation test was used for calculating the relation of data and chi square was used to study the difference between categorical variables.

Results: All of the people were men in our study. The mean age was 67.4±9.9 (41-82). The mean of PCFs with mask and nozzle were orderly 182.3±71.2 L/min and 285.3 L/min. The mean CAT score was 15.4±8.2. According to mMRC score most of the patients had 2 points (53.8%). Mean age and PCF with nozzle and mask had negative correlation, 67-year-old and younger group had significantly higher PCF measurements. There was no relationship between PCF and dyspnea level. SGRQ mean score was 42.2±16.6. Non-depressives were the highest population (69.2%), the mean BDI score was 8±9.2. There was no severe falling risk any of them and the mean BBS score was 52.5±4.8 (96.2% of them have wellness balance). There was no relationship between mean age and BDI, SGRQ, BBS, CAT, mMRC. There was a moderate positive correlation between SGRQ and BDI ($r=0.450$ $p=0.021$). Depression was seen most frequently with increasing dyspnea level (CAT $r=0.507$ $p=0.004$; mMRC $r=0.429$ $p=0.016$). Although there was no statistical relationship between BSS groups and dyspnea level (CAT $r=-0.272$ $p=0.153$; mMRC $r=-0.307$ $p=0.106$), BSS scores were increasing with dyspnea level (CAT $r=-0.489$ $p=0.007$; mMRC $r=-0.614$ $p=0.00$). There was moderate statistical relationship between SGRQ and dyspnea level (CAT $r=0.673$ $p=0.00$; mMRC $r=0.587$ $p=0.002$), which had higher points in SGRQ when they had severe dyspnea levels.

Conclusion: COPDs who have severe dyspnea level together increasing the predisposition of depression and low life quality. There was no relationship between dyspnea level and cough PEF with mask and nozzle. Cough PEF with nozzle is more affective than mask. Respiratory muscle weakness increases with age in COPDs because PCF levels decrease too. It is thought that there is negative relationship between dyspnea and balance ability but further studies are needed. Besides precautions for disease progression we need multidisciplinary approach including physiotherapists and psychiatrists while planning treatment of COPDs to be successful.

Keywords: Balance, COPD, cough PEF, peak cough flow