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**Title:** Inspiratory muscle training with threshold loading in a rehabilitation program of COPD patients

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**Body:** Background: Respiratory muscle impairment could contribute to symptoms, exercise intolerance and diminished quality of life in COPD patients. Aim: To assess the results of inspiratory muscle training (IMT) added to general exercise training in COPD patients. Method: 28 moderate-severe COPD patients were divided randomly into 2 groups. The control group performed a rehabilitation program RP (outpatient, 8 weeks, lower and upper limbs training, education, psychological support). The study group (n=14), in addition to rehabilitation program, performed IMT (daily, at home, with Threshold device, 30 min/day). The parameters evaluated were: maximal inspiratory pressure (MIP), 6 minutes walking test (6MWT), modified Medical Research Council (mMRC) dyspnea scale, St. George Respiratory Questionnaire (SGRQ), Hospital Anxiety and Depression Scale (HADS). Results: Study group (IMT + RP): n=14; mean age 63.4±8 years, mean FEV1: 41.2±15% predicted. Parameters changes after therapy (p≤0.001): increasing MIP value with 11.2 cm H<sub>2</sub>O and 6MWT distance with 44 m, decreasing mMRC dyspnea score with 0.85 points, HADS score with 3.5 points and SGRQ value with 5.5 points. Control group (RP): n=14; mean age 60.3±11 years, mean FEV1: 44.6±15% predicted. Parameters changes after therapy (p<0.05): increasing MIP value with 6.41 cm H<sub>2</sub>O and 6MWT distance with 59.3 m, decreasing mMRC dyspnea score with 0.71, HADS score with 3.71 points and SGRQ value with 4.81 points. Conclusion: Both groups had a significant amelioration in parameters evaluated. However, the rehabilitation program including inspiratory muscle training led to a greater improvement in inspiratory muscle strength, dyspnea and quality of life.