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Title: Exercise capasity and respiratory muscle strength responces to the cycle ergometer and calisthenic exercise training in chronic obstructive pulmonary diseases

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Body: Introduction: Exercise training is now considered an essential component of pulmonary rehabilitation in chronic obstructive pulmonary disease (COPD). Aims: The purpose of this study was to compare cycle ergometer with calisthenic exercise on the effects of cardiorespiratory endurance and respiratory muscle strength of COPD. Metarials and Methods: Clinically stable 29 patients (GOLD level;II,III) attended in this study. Randomized 15 patients (mean age:61,26±5,02, FEV_1:58,46±14,44%pred) received cycle ergometer training,14 patients (mean age:61,28±5,10, FEV_1:57,28±10,54%pred) received calisthenic exercise for 6 weeks, 3 sessions per week. Lung volumes, maximal inspiratory and expiratory pressures (MIP, MEP), incremental cycle ergometer test and 6 minutes walk test were performed. Results: FVC levels significantly increased in cycle ergometer and FEV_1, MVV levels increased in calisthenic exercise groups ($p<0.05$). MEP (% pred) increased in the cycle ergometer group ($p<0.05$); however, no significant improvements were seen in the calisthenic group ($p>0.05$). VO_2, VCO_2, VE, O_2 pulse, exercise time, work load improved in both groups ($p<0.05$). VE/VCO_2 decreased only in the cycle ergometer group. 6MWT walking distance (m) and distance (%pred) increased in both groups ($p<0.05$). Conclusions: It has been appeared that calisthenic exercise improved similarly with cycle ergometer training in pulmonary function, exercise capasity. However calisthenic exercise did not effect respiratory muscle strength. Both exercise programs were found to be safe and effective in pulmonary rehabilitation.