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Title: Pretreatment with inhaled procaterol improves symptoms of dyspnea and quality of life in patients with severe COPD

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Body: Objectives: To investigate the efficacy of the inhaled supplementary short-acting beta2-agonists (SABA) administered before the performance of daily activity (the SABA Assist Use) in patients with COPD. Methods: Thirty outpatients with moderate to severe COPD (Stage II - IV), regular use of tiotropium bromide alone, and dyspnea during daily activities, were enrolled. Subjects self-administered 20µg of inhaled procaterol hydrochloride before daily activities no more than four times daily. Dyspnea symptom scores, St George's Respiratory Questionnaire (SGRQ) activity domains, impulse oscillometry system parameters, and pulmonary function tests were recorded at the beginning and end of the 2-week study. Results: More than 80% of subjects reported dyspnea when performing the following activities: walking up a slope (100.0%), climbing stairs (100.0%), gardening (93.3%), walking on flat ground (90.0%), bathing (86.7%), getting on a bus or train (83.3%), and changing clothes (80.0%). After 2 weeks, subjects with Stage III significantly improved dyspnea scores (walking up a slope (p=0.047), climbing stairs (p=0.014), gardening (p=0.034), walking on flat ground (p=0.006), getting on a bus or train (p=0.039), and changing clothes (p=0.045)). Both symptoms and activity SGRQ domains significantly improved in subjects with Stage III (p=0.036 and p=0.028, respectively). Resistance of small airways (R5-R20) and low-frequency reactance area (AX) significantly improved in subjects with Stage III (p=0.003 and p=0.004, respectively). No significant changes were found in pulmonary function tests. Conclusion: The SABA Assist Use improved dyspnea symptoms in subjects with Stage III COPD.