

## Editorial on Autoimmune Disorders

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In order to managing patients with acute exacerbated COPD, long-acting anticholinergic drugs and long-acting beta-agonists are used alone. Therefore, the purpose of this study was to investigate the effect of salmeterol, tiotropium bromide and its combination in patients with acute exacerbation of chronic obstructive pulmonary disease.

This tripartite clinical trial study was performed on patients with acute exacerbated COPD referred to the Emergency Department of Shahid Beheshti Hospital of Kashan in 2019 (135 people). Patients were randomly divided into three groups. For each of the three groups, salmeterol sprays, tiotropium bromide and combination were administered separately during the admission. FEV1 and FVC measures were evaluated before and after the intervention for all three groups via spirometry. Data were analyzed using chi-square test, ANOVA, paired t-test and covariance analysis.

Acute exacerbation of chronic pulmonary obstructive pulmonary disease (AECOPD) is a condition that is characterized by progressive airway obstruction in the lungs (1). AECOPD is a disease that is diagnosed with three symptoms of coughing, phlegm, and shortness of breath. (2) The World Health Organization (WHO) estimates in 2008 that 210 million people in the world are suffering from COPD and that the overall COPD mortality rate will increase by more than 30% over the next 10 years (3). COPD is the fourth leading cause of death in the world, affecting 10% of adults over 40 years of age (4). According to a study in Tehran, in people aged 18 years and older, the incidence of COPD was 9.2% in 2015 (5). AECOPD is usually associated with reduced lung function. These patients experience symptoms such as cough

with sputum, reduced exercise tolerance, wheezing, shortness of breath and prolonged exhalation (6). Patients usually complain of decreased activity levels due to shortness of breath or fatigue, or both of them. These symptoms affect the daily activity of patients (7). Cough is also an important symptom in these patients, as it causes discomfort and poor quality of life (8). Therefore, in order to control symptoms, improve the health status and reduce the incidence of COPD, the necessity for care and treatment in these patients is highly necessary (9). Tiotropium bromide is a longacting inhaled drug that helps to dilate airways and is used to manage AECOPD. Based on the evidence from the trials, continuous therapy with tiotropium bromide has significantly reduced AECOPD and hospitalization risk due to exacerbation of the disease (11,12). Another inhaled bronchodilator drug used in patients with COPD is salmeterol. Salmeterol is one of the direct-acting sympathetic mimic drugs that stimulates beta-adrenoceptor activity and optionally selects beta-2 receptors (a beta 2 agonist) (13). In addition to bronchodilator properties, it has anti inflammatory activity (14) and decreased bio sorbent reactivity and mucosal clarity (15). Several controlled trials have reported the efficacy and safety of these drug agents (tiotropium bromide and salmeterol) as a single treatment in COPD (16-19). Several clinical trials have been conducted on the combination of anticholinergics and adrenergic agonist drugs as a long-term bronchodilator, and the potential benefits of administering daily tiotropium bromide with adrenoceptor agonists twice daily have been reported to improve lung function and clinical positive outcomes.