

## *Frequency of Metabolic Syndrome in Patients with Chronic Obstructive Pulmonary Disease*

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### **Abstract**

**Background and purpose:** There are controversies on the relationship between metabolic syndrome and chronic obstructive pulmonary disease (COPD). The present study was done to determine the frequency of metabolic syndrome in male patients with COPD as well as the associated illnesses and the symptoms of the disease.

**Materials and methods:** In a cross-sectional survey in Qazvin University of Medical Sciences, 2014, a total of 80 COPD men (33-87-year-old) were enrolled. For all patients, demographic characteristics were recorded, a spirometric examination was done, and metabolic syndrome indicators, systemic inflammation (CRP) levels, and CHARLSON index were measured. We used regression analysis, independent t-test, and ANOVA to analyze the data.

**Results:** The rate of metabolic syndrome was 37.5% in COPD patients. Patients with metabolic syndrome had more severe COPD, higher use of inhaled steroids, and fewer Forced expiratory volume in the first second (FEV1) than those who did not have metabolic syndrome ( $P < 0.05$ ). Diabetes ( $P = 0.009$ ) and cardiac disorders ( $P = 0.023$ ) showed a significant association with metabolic syndrome. Among the components of the metabolic syndrome, waist circumference, hypertension, and CRP had a significant association with airway obstruction ( $P < 0.05$ ).

**Conclusion:** The prevalence of metabolic syndrome was high in COPD patients. We also found an association between the airflow obstruction in more severe COPD stages and metabolic syndrome, hypertension, and waist circumference.

**Keywords:** metabolic syndrome, chronic obstructive pulmonary disease, hypertension, waist circumference

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