

ORIGINAL ARTICLE

## Prevalence of Tachydysrhythmia in Patients with Chronic Obstructive Pulmonary Disorder Exacerbation in Emergency Department; a Cross-Sectional Study

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### Abstract

**Introduction:** Patients with chronic obstructive pulmonary disorder (COPD) are at risk of developing tachydysrhythmia due to various reasons such as hypoxia, hypercapnia, respiratory acidosis, respiratory and metabolic alkalosis, hypokalemia, ischemic cardiac diseases, and cor-pulmonale as well as using drugs such as theophylline and beta-agonists. The present study was designed with the aim of evaluating the prevalence of various types of tachydysrhythmia in acute exacerbation of COPD. **Methods:** In this cross-sectional study, patients presenting to emergency department (ED) who were diagnosed with acute COPD exacerbation were evaluated regarding tachydysrhythmia prevalence in their electrocardiogram (ECG) on admission and its distribution based on age, sex, history of underlying illness, history of addiction or smoking, previous hospitalization, and mortality. Data were analyzed using SPSS 21 statistical software and  $p < 0.05$  was considered as significance level. **Results:** 292 patients with the mean age of  $67.35 \pm 12.11$  years were evaluated (72.6% male). Prevalence of dysrhythmia was 138 patients (47.3%). Normal sinus rhythm and sinus tachycardia were the most common underlying rhythms with 52.7% and 35.6% prevalence, respectively. Prevalence of tachydysrhythmia was significantly higher in patients with a history of drug abuse ( $p = 0.049$ ), smokers ( $p = 0.011$ ), and those with an underlying disease ( $p = 0.017$ ). Yet, no difference was detected based on age ( $p = 0.240$ ), sex ( $p = 0.062$ ) and previous hospitalization ( $p = 0.159$ ) in this regard. Finally, 268 (93.7%) patients were discharged from ED and 18 (6.3%) died. Prevalence of tachydysrhythmia in those who died was 77.78% compared with 44.78% in those who were discharged ( $p = 0.007$ ). **Conclusion:** Based on the findings, overall prevalence of tachydysrhythmia in patients with COPD was 47.3% in the current study. The most common tachydysrhythmias were sinus tachycardia, atrial fibrillation, multifocal atrial tachycardia, and idiojunctional rhythm. The prevalence of tachydysrhythmia was significantly higher in those who died, had a history of smoking and drug abuse, and those with an underlying disease.

**Key words:** Prevalence; arrhythmias, cardiac; pulmonary disease, chronic obstructive; emergency service, hospital; electrocardiography

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