

# The Role of Smoking and Gender in Combined Pulmonary Fibrosis and Emphysema Syndrome Patients

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## Abstract

**Background:** Recently, the co-occurrence of idiopathic pulmonary fibrosis (IPF) and pulmonary emphysema in the same patient has been recognized by the term "combined pulmonary fibrosis syndrome with emphysema" (CPFE), which distinguishes it from pulmonary fibrosis without emphysema. Smoking and male gender has been shown to be the greatest risk factor for IPF and CPFE syndrome also.

**Aims:** The aim of our study was to evaluate the role of smoking and gender in patients with non-inflammatory pulmonary fibrosis (idiopathic pulmonary fibrosis and pulmonary fibrosis due to connective tissue diseases) with concomitant pulmonary emphysema. We also reviewed the relevant literature to understand the current

information and how it correlates with our findings.

**Methods:** This is a retrospective cohort and case-control study in which the association between different factors (variables) in a group of patients with CPFE syndrome was evaluated. The study was conducted at University Hospital of Lung Disease "Shefqet Ndroqi" and the American Hospital in Tirana, Albania, from the period 2012-2018. We collected medical records of patients with a discharged diagnosis of non-inflammatory pulmonary fibrosis (IPF with emphysema and pulmonary fibrosis due to connective tissue diseases) with emphysema who were over a 50-years of age. A total of 28 patients participated in the study. Of these, 24 had IPF

with pulmonary emphysema and the remaining 4 had pulmonary fibrosis due to connective tissue disease (CTD) and current pulmonary emphysema (CPFE-CTD). Demographic data are presented as mean  $\pm$  SD or median (range) depending on distribution. Multivariate analysis expresses the relationship between several variables using simple or complex regression and analysis of variance. A p value  $< 0.05$  was considered statistically significant. The variables "gender" and "cancer" were found to be very important determinants of mortality (HR 41.8,  $p=0.03$ , HR 15.2 and  $p=0.007$ , respectively).

**Conclusion:** From the results we can say that smoking is considered a major risk factor for both CPFE and IPF, but CPFE patients tend to have higher UPY values than IPF patients. The male gender was more predisposed and at higher risk for mortality in subjects with CPFE syndrome. Patients should be advised to stop smoking as soon as possible in order to improve their survival and to low mortality.

**Keywords:** interstitial lung diseases, idiopathic pulmonary fibrosis, pulmonary emphysema