

## **Characteristics and prognosis of COVID-19 in patients with COPD**

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### **Abstract-**

**Patients with COPD have a higher prevalence of coronary ischemia and other factors that put them at risk for COVID-19-related complications. We aimed to explore the impact of COVID-19 in a large population-based sample of patients with COPD in Castilla-La Mancha, Spain. We analyzed clinical data in electronic health records from January 1st to May 10th, 2020 by using Natural Language Processing through the SAVANA Manager®; clinical platform. Out of 31,633 COPD patients, 793 had a diagnosis of COVID-19. The proportion of patients with COVID-19 in the COPD population (2,51%; CI95% 2,33 - 2,68) was significantly higher than in the general population aged > 40 years (1,16%; 95%CI 1,14 - 1,18); P < .001. Compared with COPD-free individuals, COPD patients with COVID-19 showed significantly poorer disease prognosis, as evaluated by hospitalizations (31,1 % vs 39,8%: OR 1,57; 95%CI 1,14 - 1,18) and mortality (3,4% vs 9,3%: OR 2,93; 95%CI 2,27 - 3,79). Patients with COPD and COVID-19 were significantly older (75 vs. 66 years), predominantly male (83% vs 17%), smoked more frequently, and had more comorbidities than their non-COPD counterparts. Pneumonia was the most common diagnosis among COPD patients hospitalized due to COVID-19 (59%); 19% of patients showed pulmonary infiltrates suggestive of pneumonia and heart failure. Mortality in COPD patients with COVID-19 was associated with older age and prevalence of heart failure (P<0.05). COPD patients with COVID-19 showed higher rates of hospitalization and mortality, mainly associated with pneumonia. This clinical profile is different from exacerbations caused by other respiratory viruses in the winter season.**

**Index Terms- COPD; COVID-19; prevalence; prognosis**

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