

Evaluation of clinical and laboratory findings in COPD patients with COVID-19 in Imam Khomeini Hospital of Ardabil

Abstract:

With the outbreak of the Covid 19 virus in December 2019, the role of COPD as a lung disease and one of the most common chronic diseases in the severity of Covid 19 infection is significant. One of the most perilous consequences in COPD patients is COPD Exacerbation, which occurs mainly following bacterial and viral respiratory infections. These exacerbations are one of the main causes of hospitalization in COPD patients and lead to poor prognosis and increased mortality rate in these patients.

Aim:

Evaluation of clinical and laboratory findings in COPD patients with COVID-19 in Imam Khomeini Hospital of Ardabil from March to September 2020

Methods and Materials:

This study is a retrospective descriptive-analytical study that was performed from early March to late September 2020 in all COPD patients with Covid 19 admitted to Imam Khomeini Hospital in Ardabil. The inclusion criteria were all patients with COPD whose Real-time PCR test was positive for Covid 19 disease or those who were diagnosed with Covid 19 based on the findings of CT scan, based on national guidelines. For all subjects, a questionnaire including demographic characteristics, clinical findings, and laboratory findings was designed. The data of the questionnaire were collected and after entering it into SPSS version 21 software, the analysis of the results was reported using Fisher's exact test with the criterion of $P < 0.05$.

Findings:

According to this study, 159 COPD patients infected with COVID 19, including 55 females (34.6%) and 104 males (65.4%) were studied. Of these, 126 patients (79.2%) were admitted to the general ward and 33 patients (20.8%) were admitted to the ICU. Out of 159 hospitalized patients, 38 (23.9%) died. Among the 38 patients who died, 15 (39.5%) were

admitted to the general ward and 23 (60.5%) were admitted to the ICU, which was statistically significant. ($P<0.001$)

The most common clinical symptoms were shortness of breath occurring in 141 patients (91.8%), cough in 115 patients (72.3%), and fatigue in 91 patients (59.1%), respectively. The most common underlying diseases were hypertension 87 (54.7%), a history of cardiovascular disease 48 (30.2%), and diabetes 46 (28.9%), respectively. On the other hand, a history of previous CVA is strongly associated with mortality. ($P<0.05$)

Analysis of laboratory results based on the outcome of the disease revealed neutrophil count with ($p<0.001$), monocyte count with ($p<0.001$), leukocyte count with ($p<0.001$), eosinophil count with ($p<0.05$), PTT with ($p<0.05$), PT with ($p<0.05$), AST with ($p<0.001$), Troponin with ($p<0.05$), lactate dehydrogenase with ($p<0.001$), BUN with ($p<0.001$), Ferritin with ($p<0.001$) and CK-MB with ($p<0.05$), were more statistically significant in patients with COPD who died with hospitalizations due to Covid 19 disease than those who recovered.

Conclusion:

In this study, 159 COPD patients, infected with Covid-19, most of whom were elderly and male were included. Out of 159 patients, 38 died, and most of them were admitted to ICU. Significantly, the hospitalization of women in the ICU was more than men. Previous CVA history is strongly associated with mortality. On the other hand, leukocyte, monocyte, urea, troponin, PTT, AST, and LDH levels in deceased patients are significantly higher than in cured patients.

Keywords:

COPD, COVID-19, COPD Exacerbation