

## **Evaluation of clinical and laboratory findings in Asthmatic patients with COVID-19 admitted to the Ardabil Imam Khomeini Hospital from April to September 2020**

Abstract

**Background:** Given the coronavirus pandemic, the role of underlying diseases in the severity of COVID-19 disease seems to be significant. One of the underlying diseases in COVID-19 disease is asthma, which due to the similar nature of the two diseases, is thought to have affected the severity of COVID-19 disease.

**Aim:** The aim of this study was to evaluate clinical and laboratory findings in patients with asthma associated with COVID-19 and comparison between recovered patients and the deceased in Ardabil Imam Khomeini Hospital.

**Material and mtehods:** This study is a retrospective cross-sectional study that was performed from the beginning of April to September 2020 in all asthma patients with COVID-19 admitted to Ardabil Imam Khomeini Hospital. The inclusion criteria were all patients with asthma who tested positive for Covid-19 Real-Time PCR test or those who were diagnosed based on CT scan findings based on national guidelines. For all subjects, a checklist including demographic characteristics, clinical, and laboratory findings was completed. Questionnaire information was collected and after entering it in SPSSV 21 software, the results were analyzed using Fisher's exact test with  $P < 0.05$ .

**Results:** Eighty two asthmatic patients with COVID-19 were included in the study with a mean age of  $54.67 \pm 17.13$  years, of which 37 were male (45.7%) and 44 were female (54.3%). The results of the current study revealed that 72 patients (88.9%) recovered and 9 patients (11.1%) died. The most common comorbidities in asthmatic patients with COVID-19 were hypertension (24.7%), diabetes (12.3%), cardiovascular disease (7.4%), and myocardial infarction (4.9%), respectively. Analysis of laboratory results based on disease outcome revealed that neutrophil counts ( $p < 0.001$ ), PTT ( $p < 0.05$ ), INR ( $p < 0.05$ ), AST ( $p < 0.05$ ), LDH ( $p < 0.001$ ), Ferritin ( $p < 0.001$ ), BS ( $p < 0.001$ ), and Urea ( $p < 0.001$ ) in asthmatic deceased individuals were higher than those recovered patients.

**Conclusion:** Changes in inflammatory markers , metabolic and liver disorders in asthmatic patients with COVID-19 affect the outcome of the disease and require more attention and treatment.

**Keywords:** Asthma, COVID-19, Clinical findings, Laboratory results, Comorbidity