

Investigating the association between allergic diseases and COVID-19 in 400 Iranian patients

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Abstract

Background: Allergic diseases may play a role as a predisposing factor for coronavirus disease 2019 (COVID-19). The aim of this study was to investigate the allergy comorbidity and their association with the patients with COVID-19. **Methods:** Demographic data, clinical symptoms, laboratory and radiologic findings and having underlying diseases of the patients were registered. Allergic diseases were identified by using the standard GA2LEN questionnaire. The severity of COVID-19 was assessed by visual analog scale (VAS) and ICU admission. **Results:** Of 400 COVID-19 patients, 158 (39.5%) had allergic diseases. And, there was a reversely association between an having allergy comorbidity and the severity of COVID-19 infection ($P = 0.005$, relative risk, 0.96; 95% CI, 0.77-1.19). The frequency of asthma, allergic rhinitis (AR), chronic rhinosinusitis, atopic dermatitis, chronic urticaria, and food or drug allergy was 7.3%, 16%, 1.8%, 5%, 10% and 13.3%, respectively. Importantly, only AR was reversely associated with the severity of COVID-19 ($P = 0.02$, relative risk, 0.96; 95% CI, 0.77-1.19). Additionally, 43% of the patients presented hypoxemia, and 93.5% had chest CT scan involvement. Interestingly, patients with allergic than non allergic diseases had significantly lower hypoxemia and chest CT involvement ($P = 0.002$ and $P = 0.003$, respectively). **Conclusion:** This study showed that allergic diseases were not found to be a predisposing factor for the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection. Importantly, the patients with AR developed mild symptoms of COVID-19 and they were admitted to ICU significantly less than the non-AR patients.

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