

## The Association between ABO-Rh Blood Groups and the Risk of COVID-19 Infection

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**Abstract :** Background: Coronavirus disease 2019 (COVID-19) as an alarming attack broke out in China and spread rapidly worldwide. Objectives: Based on a theory indicating the correlation between some viral diseases and blood types, we investigated the relationship between blood groups and coronavirus infection risk in Guilan Province, Iran. Methods: Retrospectively, all the files of the admitted patients with suspected COVID-19, in peak conditions of the disease between March 1 and May 30, 2020, were reviewed using the Census method. The required data, including epidemiological and clinical information and outcomes, were obtained from electronic records. Results: A total of 249 cases were analyzed, of whom 109 were collected from governmental centers, and the rest were collected from private hospitals. The most common co-morbidity was diabetes with 71 (37.6%) cases and the main symptom at the admission time was dyspnea with 170 (24.5%) cases. Of the total patients, 155 (62.2%) were discharged, and the rest died. The most common blood group among our patients was O Rh-positive with 91 (36.5%) cases. No meaningful correlation was found between outcomes and blood groups in terms of ABO types ( $P = 0.89$ ) or Rh factor ( $P = 0.456$ ). The Rh-positive proportion was significantly higher in the COVID-19 cases than in the general population ( $P = 0.038$ ). Conclusions: We found that the Rh-positive proportion was significantly higher in the COVID-19 cases than in the healthy individuals. However, no correlation was observed between the groups regarding ABO typing.

**Keywords :** ABO blood group, COVID 19, association, personal protection

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