BRIEF COMMUNICATION

Obstetrics

ABO blood group and COVID-19 in pregnant women: A case–control study

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In some countries, coronavirus disease 2019 (COVID-19) is the leading cause of death in pregnant women.1 The risk factors for severe COVID-19 are similar to those identified for the general population. The effects of ABO blood groups and COVID-19 are unclear. Among pregnant women, this association has been identified in the United Kingdom, with women with blood group A showing a higher risk of developing COVID-19.2

A retrospective case–control study was performed. The population included all pregnant women who attended the emergency department for respiratory symptoms (suspected cases of COVID-19) at a single center between May 14, 2020, and October 9, 2021. The cases were pregnant women with positive polymerase chain reaction results for severe acute respiratory syndrome coronavirus (SARS-CoV-2) (designated COVID-19+), and controls were women with negative polymerase chain reaction results for SARS-CoV-2 (designated COVID-19−) in a 1:1 ratio. The blood group was determined by the column agglutination method. Pearson χ² test was used to analyze the association between the blood group and the probability of having COVID-19.

Two hundred patients who met the selection criteria were included. The Table 1 shows the characteristics of both groups of patients. The blood group did not influence susceptibility to COVID-19 (P = 0.754). A difference was observed in age and susceptibility to COVID-19 (P = 0.034). The mortality rate was higher in the COVID-19+ group than in the COVID-19− group (4% vs. 0%, respectively; P = 0.043), but the blood group did not influence mortality (P = 0.059). COVID-19 was a risk factor for maternal mortality (odds ratio [OR], 2.04; 95% confidence interval [CI], 1.77–2.35). In pregnant women with COVID-19, the infection had a median of 29 gestational weeks. Moderate–severe COVID-19 was observed in 74 (74%) patients and occurred mainly in the third trimester (44 of 74). No differences were observed between the ABO blood group and disease severity (P = 0.965).

The four pregnant women who died had blood group O, three patients who died had a history of obesity, and three had advanced maternal ages (older than 35 years). The frequencies of the blood groups depend on the geographical regions. In Turkey, a country with a high prevalence of blood group A, this blood group increased the susceptibility to COVID-19 (OR, 2.1; 95% CI, 1.5–2.9).6 Pregnant asymptomatic women were not included. However, it has been described that up to two-thirds of pregnant women with COVID-19 are asymptomatic.7

This study found no association between blood group and COVID-19 susceptibility, severity, or death in pregnant women. Similar to other research, two risk factors were identified in pregnant women with COVID-19: age and obesity.

AUTHORS CONTRIBUTIONS
The authors assume responsibility for conducting the trial and ensuring data integrity, analysis, and protocol adherence. C.G.T.A.: This is an open access article under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made. © 2022 The Authors. International Journal of Gynecology & Obstetrics published by John Wiley & Sons Ltd on behalf of International Federation of Gynecology and Obstetrics.
designed the protocol and drafted the original manuscript. O.D.C.G. and C.S.L.: acquisition of data. C.S.L.: preparation of Tables. C.G.T.A.: analysis or interpretation of data. R.M.A.: substantively revised the manuscript. All authors contributed to the critical review of the paper and approved the final version of the manuscript.

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CONFLICT OF INTEREST
The authors have no conflicts of interest.

DATA AVAILABILITY STATEMENT
Data available on request due to privacy/ethical restrictions.

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