

EDITORIAL

Disease Severity and Blood Group Typing in SARS-CoV2 Pandemic

Since the global outbreak of severe acute respiratory syndrome caused by corona virus, the researchers from different field of clinical, paraclinical and public health sector persuaded vigorous search to correlate different factors in disease severity. As everybody has a blood type, and everybody is worried about COVID-19 associated manifestations during pandemic, which explain why recent research into possible links between blood type and COVID-19 has been widely reported. A genom-based study of critically ill COVID-19 patients revealed that patients with blood group A had a higher risk of severe disease, while blood group O had a protective effect¹. But a Danish study revealed ABO blood group as a risk factor for COVID-19 infection although not for mortality of hospitalization².

Again a group of scientists from Europe and Australia spurred a study comparing genome data from 1610 patients with severe COVID-19 and 2205 healthy blood donor from Italy or Spain and gene variants in 2 regions of the human genome were associated with severe COVID-19 and a greater risk of dying from it. The study also found that, compared with people with other blood types, type A had a 45% higher risk of developing severe COVID-19 if infected, whereas type O had a 35% lower risk³. However, observations from Boston, Massachussets, and New York, New York, did not confirm any specific associations between ABO blood group and disease. The controversy raised by these contrasting reports led to further research in different races and regions including Bangladesh.

Besides a retrospective cross-sectional study conducted among 771 patients in the intensive care unit (ICU) of a tertiary-level COVID-dedicated hospital in Dhaka city, very few studies were conducted to explore association and outcome of COVID-19 patients admitted in hospitals. One of those keen studies were done in Holy Family Red Crescent Medical College Hospital, which was one of the prime dedicated hospital for COVID patients. The results of that study revealed that COVID-19 patients with blood groups A and B were are at increased risk of disease severity with the highest number of co-morbidities and symptoms compared with patients with blood group O or AB, among 294 patients.

Though the underlying mechanisms were unclear, it was assumed that the ABO blood type features polymorphisms within the ABO gene. This ABO gene is related to the risk factors for COVID-19 morbidity

and mortality. Moreover, some researchers showed ABO blood type has an association with the activity of the angiotensin-converting enzyme, red blood cell count, hematocrit and hemoglobin concentration, and blood glycoproteins like von Willebrand factor, ischemic stroke, myocardial infarction, coronary artery disease, type-II diabetes, and venous thrombo-embolism. These conditions are also relevant for COVID-19. Like ABO, the Rh type might also be responsible for type compatibility and immune response.

Dr. Morshed Nasir

Professor and Head

Department of Pharmacology

Holy Family Red Crescent Medical College

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