

COVID-19 Infection and Patient Blood Group: What is the Co-Relation?

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Since the time the COVID-19 pandemic has gripped the entire world, a certain co-relation between COVID-19 infection and patient blood groups has emerged.

A strong co-relation has been observed between severe COVID-19 infection and blood group A, while patients with type O blood group have a relatively lower risk of developing severe COVID-19 infection, especially females.

Peng, *et al.* [1] studied the ABO blood group and gender distribution in severe COVID-19 infections, mild COVID-19 infections and in non-COVID-19 patients.

Their results showed a significant difference in severity between type O and non-type O COVID-19 patients ($p < 0.05$). The study showed that patients with blood group O had a lower risk of developing severe COVID-19 infection, and females with blood group O had the least risk of deteriorating into a severe COVID-19 infection. Hence, from this study [1] they concluded that COVID-19 infection in non-type O blood groups is more concerning and all measures should be implemented to prevent such patients from deteriorating into a severe infection, once they contract the disease.

Another case study [2] found that patients with a type O blood group were not only less likely to develop severe COVID-19 symptoms but were also less likely to develop severe cardiovascular complications. This study also found that patients who were type A blood group along with cardiovascular co-morbidities such as hypertension, were more likely to develop severe COVID-19 infection, once infected with the virus.

It is believed that the type O blood group has a protective effect against the development of severe COVID-19 infection with cardiovascular complications, as it is associated with a lower angiotensin-converting enzyme (ACE) level and higher ACE2 activity. Type A blood group is believed to be associated with a greater risk of severe COVID-19 infection and severe cardiovascular complications because of its positive association with ACE activity and the attachment of adhesion molecules on the vascular wall that increases inflammation and decreases blood circulation [2].

However, it should be noted that though Group A blood type is prognostic of severe COVID-19 infection in patients who contract the infection, it does not predispose to the risk of contracting the SARS-CoV-2 infection per se.

Bibliography

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