

# PRIMARY RESULTS ON PLASMA TESTING FROM BLOOD DONORS TO THE PRESENCE OF ANTI-SARS-CoV-2 FOR THE TREATMENT OF COVID-19 PATIENTS

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Many options for treating COVID-19 are currently being explored. These include new drugs specifically designed to target SARS-CoV-2, as well as existing drugs designed to treat other diseases. By far, the oldest treatment tested is convalescent plasma. This involves the use of blood plasma from people who have been cured of COVID-19 and its administration to patients who currently have the disease. Plasma transfused to patients who are in severe and extremely severe condition provides a boost to the immune system, thus favoring the acceleration of the recovery process. The use of convalescent plasma involves the transfer of antibodies from donors who already have an immune response, thus providing immediate (but transient) protection to the recipient.

In this context, the results of the study on the investigation of plasma from blood donors, after the clinical recovery of COVID-19 to the presence of anti-SARS-CoV-2, depending on the place of residence, age and form of clinical manifestation, are of particular scientific-practical interest.

119 donors were examined from patients - males, aged 18-60 years, with a history of COVID-19 disease, confirmed case, cured (complete resolution of symptoms) and negative result for COVID-19 in a PCR test and at least 14 days after clinical recovery.

Out of 119 donors of freshly frozen convalescent plasma, 104 (87.4%) demonstrated the presence of anti-SARS-CoV-2, IgG class identified by immunoenzymatic analysis, and the absence of antibodies was found in 15 (12.6%) donors.

Donors identified positive for the presence of antibodies by age were distributed as follows: (18-25 years) - 12.5%; (26-35 years) - 37.5%; (36-45 years) - 28.8%; (46-60 years) - 21.2%. The share of donors depending on the form of clinical manifestation of COVID-19 infection, tested positive for the presence of anti-SARS-CoV-2 was as follows: pathologies with mild clinical forms (acute viral respiratory infections) - 63 (60.6%); the average clinical form (acute laryngotracheitis, acute bronchitis, acute rhinopharyngitis) - 31 (29.8%) and severe pathologies (bilateral pneumonia) - 10 (9.6%) donors. Depending on the place of residence, the plasma donors identified positively at the presence of anti-SARS-CoV-2 were as follows: urban - 78 (75%) and rural - 26 (25.0%).

It is important to mention that in the plasma donors tested negatively for the presence of anti-SAR-CoV-2 out of the 15 (12.6%), those with severe clinical manifestations were not found, only those with mild and medium severity clinical forms were identified of COVID-19 infection.

It is worth noting the data showing that in 40 freshly frozen convalescent plasma donors who donated repeatedly, it was found that the indices of reference values in some donors decreased compared to the first donation, and in others being absent.

## Conclusions

1. The data obtained show that practically 87.4% of plasma donors responded to COVID-19 infection by anti-SARS-COV-2 IgG expression with a predominance in the age group 26-35 years.
2. Most donors made mild and moderate clinical forms, which can be explained by the presentation of potentially healthy plasma donors without chronic disease concomitant with COVID-19. No link was identified



between the degree of moderate or mild clinical manifestation of the disease and the presence or absence of anti-SARS-CoV-2.

3. It is important to note that all serious clinical forms of COVID-19 infection were accompanied by the formation of anti-SARS-CoV-2 IgG.

4. The urban living environment predominates (75%) in convalescent plasma donors, which indicates that they are better informed by Public Medical Institutions, have access to various Mass-Media sources and public transport to travel to donation points.

5. The study shows that blood donors, males aged 18-60 years with a history of COVID-19 disease, etiologically confirmed, subsequently cured; with a negative result (PCR) at least 14 days after clinical recovery can serve the source of fresh plasma used for the treatment of COVID-19 patients, especially with severe (severe) forms of clinical manifestation of the disease.