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THE voluntary BLOOD DONATION JOURNAL
2020 | 55
Promoting Voluntary Blood Donation

# CONVALESCENT PLASMA THERAPY: AN UPCOMING HOPE TO FIGHT AGAINST COVID-19


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## An introduction to SARS-CoV-2

Coronavirus disease 2019 (COVID-19) is an infectious disease caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). SARS-CoV-2 closely resembles to the original SARS-CoV which is an enveloped RNA virus that belongs to the family of Coronaviridae. The disease was first identified in December 2019 in Wuhan province of China, and has spread globally leading to the 2019–20 coronavirus pandemic. As of 1 May 2020, more than 3.27 million cases have been reported across the globe that resulted in more than 233,000 deaths. Approximately, around 1.02 million people have already recovered from the disease.

## How SARS-CoV-2 virus does affect human body?

The lung is the organ which is mostly affected by COVID 19 virus because the virus accesses host cells via the enzyme angiotensin-converting enzyme 2 (ACE2), which is most abundant in type II alveolar cells of the respiratory epithelium. The virus makes use of a special surface glycoprotein called a "Spike" (peplomer) protein to connect to ACE2 and enter the host cell. As the alveolar disease progresses, respiratory failure may develop and ultimately death will occur. The density of ACE2 in each tissue correlates with the severity of the disease in that tissue. In addition to the respiratory system, the virus can also affect gastro-intestinal system and in some cases neurological manifestations were also reported.

## What is the role of Convalescent plasma therapy in COVID-19 patients?

Currently, there are no universally accepted treatment modalities either in the form of an approved vaccine or a specific antiviral therapy. Management of COVID-19 involves isolation, treatment of symptoms, supportive care and experimental measures. The FDA has granted temporary authorization to convalescent plasma therapy as an experimental treatment in severe or acute life threatening cases of COVID-19. The American Association of Blood Banks (AABB) has set up a web page so that people recovered from COVID-19 can find out where to donate blood.

In India, Indian Council of Medical research (ICMR) has taken initiative to begin convalescent plasma therapy clinical trials for COVID-19 patients. Being forefront in COVID care and management, Kerala is the first state in India to get enrolled into this ICMR initiative. Our state functioned well efficiently in a timely manner to control the active spread of corona infection from the very beginning itself and now it is the time to treat the already infected cases.

Convalescent plasma therapy involves the collection of blood plasma from the COVID-19 survivors to treat acutely ill COVID-19 patients. The concept of convalescent plasma therapy is not new as it was previously also been tried in cases of Middle East Respiratory Syndrome, Severe Acute Respiratory Syndrome (SARS), Chikungunya, Ebola and Zika. The possible presence of anti-COVID-19 antibodies in the plasma of individuals who have completely recovered from the disease is the scientific logic behind the use of convalescent plasma therapy. Anti-COVID-19 antibodies from a recovered individual can be passively infused into the body of a COVID-19 patient who is unable to produce antibodies in an effective manner.

The response to convalescent plasma therapy can be varying among patients. But, there are case reports of patients who have recovered with convalescent plasma therapy. There may be numerous reasons that can affect the response to treatment. These reasons could be the age of the patient, the overall clinical condition, the stage of progression of the disease.

## Who can donate Convalescent plasma?

The individuals who have recovered from corona virus infection can thereby become potential plasma donors to treat COVID-19. Those recovered individuals who meet the blood donor selection eligibility criteria can donate their plasma to treat the affected patients. The recovered individuals can donate plasma after 14 days of complete recovery with 2 successively negative COVID-19 RT-PCR (Real Time-Polymerised Chain Reaction) reports or after 28 days of complete recovery with no signs or symptoms of infection.

Donor should have a complete clearance of anti-COVD-19 IgM antibodies and should only have IgG antibodies against COVID-19 at the time of donation. As per clinical trial

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protocol version 1.4 of ICMR dated 22nd April 2020, the desired titers for IgG antibody is 1:1024 and for neutralizing antibody is 1:40. As per US FDA, the recommended neutralizing antibody titre should be of at least 1:160 and a titre of 1:80 may be considered acceptable if an alternative matched unit is not available.

## How to collect and store Convalescent plasma from potential donors?

The convalescent plasma can be easily collected by means of plasmapheresis procedure that selectively collects the plasma component of blood and returns back all other blood constituents back to the donor. The volume collected from a donor should not exceed 500 ml per sitting as per Drugs and Cosmetics Rules, 2020 (Second Amendment). Throughout the procedure the extracorporeal volume (ECV) of blood in the apheresis circuit will never exceed >15% of the total blood volume of the donor. The volume of plasma collected will depend upon the body weight and the total blood volume of the eligible blood donors. The convalescent plasma collected can be made in 200 ml aliquots each for transfusion purpose and can be stored up to one year at <-40$^{o}$C.

## What is the current status of Convalescent plasma therapy?

Convalescent plasma therapy is still under experimental phase and has not undergone enough clinical studies to prove that to be a safe and effective modality of treatment. As with all the present treatment modalities that are attempted, this also might take a lot of research and testing to validate for general use.

# BLOOD DONATION CAMP AS PART OF INTERNATIONAL WOMEN'S DAY

As part of the International Women's Day celebrations Terumo Penpol in association with Prathidhwani and TEJUS organized two blood donation camps at Technopark camps one at Nila building and another at Tejaswini.

The technical support for these camps was given by Sree Ramakrishna Mission Ashrama Hospital and SCTIMST.

Mr. Sanjay Kumar IPS, Commissioner of Police inaugurated the camps. The camps were a huge success as techies especially women participated in the camp enthusiastically.

International Women's Day is a time for resolutions. Get healthy, give blood toward a worthy cause. What if there were a way to really give of yourself and save lives, without having to spend a dime? There is a way to do just that--blood donation.
In fact, a single donation can potentially help more than one person in need. One unit of blood can be separated into up to four main usable components: red blood cells, which help carry oxygen to vital organs; platelets, which form some of the building blocks of clots; plasma, the liquid part of blood that also contains clotting factors and cryoprecipitate that is made up of concentrated clotting factors that help stop bleeding.

The entire donation process, from arrival to completion takes about an hour and 15 minutes and includes health screening, paperwork processing and recovery period, with a snack. The actual time for the donation lasts only 8-10 minutes for a whole blood donation, but could be longer if you choose to donate only a part of the blood, such as plasma or platelets. Single blood components may be donated through a process called apheresis. Only individuals who pass an initial screening process and are healthy enough to do so may donate, and the process itself is not as painful as one might think. All blood is tested.

Who benefits from receiving a transfusion? Anyone who has excessive bleeding or severe anemia. This may include people who have medical conditions that make it difficult to form blood clots, people who undergo surgery, pregnant women and even some fetuses with anemia need a transfusion before birth .

Although as doctors and surgeons continue to work to identify patients at risk for bleeding, to stop or control bleeding quickly as well looking for ways to safely avoid or minimize the need for transfusion, there is currently no substitute for blood when it is truly needed.

So, what are you waiting for? You don't have to be a doctor to save a life, you just must be willing to give a little bit of your time, and a little bit of yourself. Donate today.

# TERUMO BCT'S MIRASOL REDUCES THE VIRUS CAUSING COVID-19 BELOW THE LIMIT OF DETECTION IN PLASMA AND PLATELETS

• A study published today in peer-reviewed Vox Sanguinis shows Terumo BCT's Mirasol Pathogen Reduction Technology (PRT) System effectively reduced the titer of SARS-CoV-2 in both plasma and platelet products to undetectable levels.
• Mirasol is designed to add an extra layer of safety to the blood supply.
• In some parts of the world, where Mirasol is approved for use, the device is used to treat convalescent plasma for COVID-19 patients.1

LAKEWOOD, CO. USA - April 23, 2020 - Today, Vox Sanguinis, a peer-reviewed medical journal, published results from a Terumo BCT study conducted in collaboration with top researchers at Colorado State University. The study examined how well the Mirasol system treated platelets and plasma against the virus causing COVID-19.

The results showed that Mirasol is effective against SARS-CoV-2, the virus causing COVID-19, when high virus levels are present in human plasma and platelets.

**Study Results**
In the Terumo BCT study, the measured titer of SARS-CoV-2 was below the limit of detection in tissue culture following treatment with riboflavin and ultraviolet light on the Mirasol system. The mean log reductions in the viral titers were ≥ 3.40 and ≥ 4.53 for the plasma units and platelet units, respectively.
Mirasol effectively reduced the titer of SARS-CoV-2 in both plasma and platelets to undetectable levels. The data suggest that the process would be effective in reducing the theoretical risk of transfusion-transmitted SARS-CoV-2.

**Changing World = Emerging Pathogens**
Pathogen reduction with Mirasol is a method to address emerging and evolving pathogens as the rate of epidemics increases, people travel more and the global climate warms.

"Mirasol adds a layer of safety to blood products by reducing the risk of transfusion transmission of both known and emerging pathogens," says Shawn D. Keil, Scientific Affairs, Terumo BCT, and lead author of the publication. "SARS-CoV-2 won't be the last novel virus to emerge. Using the Mirasol PRT system is a proactive approach to protecting the foundation of healthcare, blood."

Dr. Louis Katz, MD, Chief Medical Officer, Mississippi Valley Regional Blood Center, Davenport, Iowa, U.S.A., said: "Once more, in the aftermath of HIV and HCV [the hepatitis C virus], we are reminded that a proactive intervention like pathogen reduction could be of value in urgent and emergent circumstances like the current pandemic."

**Pathogen Reduction and Convalescent Plasma**
People who have recovered from COVID-19 have antibodies to the disease in their blood. Some healthcare providers are using convalescent plasma for patients with severe COVID-19 to boost their ability to fight the virus.3 Others are considering using convalescent plasma to provide passive immunity to healthcare workers, such as doctors and nurses who have been exposed to the virus but are not showing symptoms. Mirasol may add an extra layer of safety to convalescent plasma, even though there is no evidence that SARS-CoV-2 can be transmitted through transfusion.

"The proactive value of pathogen reduction providing blood safety in the event of unknown pathogen outbreaks is shown in this awful COVID-19 pandemic. The riboflavin technology inactivates the SARS-CoV-2, the causative agent of COVID-19, so it should be especially helpful in the treatment of COVID-19 convalescent plasma and to provide additional safety for standard blood products," Dr. Jeffrey McCullough, MD, Professor Emeritus, University of Minnesota Medical School.*

**About Mirasol**
Using riboflavin (vitamin B2) and ultraviolet light, Mirasol is designed to reduce the pathogen load of various disease-causing agents such as viruses, parasites and bacteria in blood products before they are transfused to patients. Mirasol also inactivates white blood cells to help reduce certain transfusion reactions.

Mirasol is CE marked for platelets, plasma and whole blood and is in routine use in more than 20 countries throughout Europe, the Middle East, Africa, Asia and Latin America. The system is not approved for sale in the U.S. and Canada.

There are no approved devices or therapies for specific treatment of COVID-19.

www.terumobct.com/mirasol

1Study funded by Terumo BCT and conducted at Colorado State University, Fort Collins, Colo.
Authors: From Terumo BCT: Shawn D. Keil, Susan Yonemura and Nicole K. Dart. From CSU's Department of Biomedical Sciences, Fort Collins, Colo.: Izabela Ragan and Richard Bowen. From CSU's Infectious Disease Research Center, Fort Collins, Colo.: Lindsay Hartson.

2Read the full article, Inactivation of severe acute respiratory syndrome coronavirus 2 in plasma and platelet products using a riboflavin and ultraviolet light-based photochemical treatment, here.

3The International Society for Blood Transfusion (ISBT) Global Blood Safety Working Party recommends, where feasible, pathogen inactivation of plasma to control residual risks of transfusion-transmitted infectious diseases and to alleviate concern about possible superinfections with SARS-CoV-2, the virus that causes COVID-19. Jay Epstein and Thierry Burnouf, on behalf of the ISBT Working Party on Global Blood Safety. Points to consider in the preparation and transfusion of COVID-19 convalescent plasma. Details here.

*Dr. McCullough serves as an advisor to Terumo BCT and is the Principal Investigator on a clinical trial that involves the use of Mirasol in the treatment of platelets for transfusion.

# 4 CRITICAL CORONAVIRUS PATIENTS RECOVER AFTER PLASMA THERAPY IN INDORE

4 Critical Coronavirus Patients Recover After Plasma Therapy In Indore

Last week, amid a surge of hope brought in by the first successful test in Delhi, the central government had said plasma therapy for coronavirus is still in an experimental stage.

Four critically ill COVID-19 patients in Indore have tested negative for coronavirus following successful plasma therapy at the Sri Aurobindo Institute of Medical Sciences (SAIMS) hospital amid the debate over efficacy of the treatment among medical practitioners.

One of the discharged patients told NDTV, "The plasma therapy has saved my life. I want to donate plasma for saving lives of other critical COVID-19 patients after successfully completing the 14-day home quarantine period."

Indore district's Chief Medical and Health Officer (CMHO), Praveen Jadia, said, "At SAIMS, the use of plasma therapy was done on some COVID-19 patients and according to the doctors there, it helped them in the recovery. Plasma therapy would also be used on some coronavirus positive patients at a government-run hospital in Indore soon. We hope that it will help the patients in their recovery."

Dr Vinod Bhandari chairman of Aurobindo Hospital said, "Four patients were admitted to our hospital. They were in critical condition. We gave them all possible treatment but the condition deteriorated. Then we decided to give them plasma therapy. The plasma therapy was administered since April 26 to all four who were on oxygen support due to coronavirus-triggered Acute Respiratory Distress Syndrome (ARDS). Two of them, were most critical as their lungs were infected and impaired up to 60 per cent but after giving plasma in just two-three days we stopped the extra oxygen. Their X-Ray results showed improvement and now they are discharged."

Last week, amid a surge of hope brought in by the first successful test in Delhi, the central government had said plasma therapy for coronavirus is still in an experimental stage and can even prove "life threatening" for a patient.

Delhi had reported the country's first plasma therapy success story last month. The patient was a 49-year-old man who got treatment at a private hospital.

Plasma Therapy involves transfusion of plasma from a convalescent coronavirus patient to a critical patient. The blood of a convalescent patient is rich in antibodies that are expected to help the critical patient recover.

Doctors have said one donor can donate 400ml of plasma which can save two lives.

*Source: NDTV*

# CORONAVIRUS (COVID-19) UPDATE:

## FDA ENCOURAGES RECOVERED PATIENTS TO DONATE PLASMA FOR DEVELOPMENT OF BLOOD-RELATED THERAPIES

**Statement From: Stephen M. Hahn M.D, Commissioner of Food and Drugs - Food and Drug Administration**

As part of the all-of-America approach to fighting the COVID-19 pandemic, the U.S. Food and Drug Administration has been working with partners across the U.S. government, academia and industry to expedite the development and availability of critical medical products to treat this novel virus. Today, we are providing an update on one potential treatment called convalescent plasma and encouraging those who have recovered from COVID-19 to donate plasma to help others fight this disease.

Convalescent plasma is an antibody-rich product made from blood donated by people who have recovered from the disease caused by the virus. Prior experience with respiratory viruses and limited data that have emerged from China suggest that convalescent plasma has the potential to lessen the severity or shorten the length of illness caused by COVID-19. It is important that we evaluate this potential therapy in the context of clinical trials, through expanded access, as well as facilitate emergency access for individual patients, as appropriate.

The response to the agency's recently announced national efforts to facilitate the development of and access to convalescent plasma has been tremendous. More than 1,040 sites and 950 physician investigators nationwide have signed on to participate in the Mayo Clinic-ledExternal Link Disclaimer expanded access protocol. A number of clinical trials are also taking place to evaluate the safety and efficacy of convalescent plasma and the FDA has granted numerous single patient emergency investigational new drug (eIND) applications as well.

As this work moves forward, the key to ensuring the availability of convalescent plasma to those in greatest need is getting recovered COVID-19 patients to donate plasma. The FDA has launched a new webpage to guide recovered COVID-19 patients to local blood or plasma collection centers to discuss their eligibility and potentially schedule an appointment to donate. The webpage also provides information for those interested in participating in the expanded access protocol, conducting clinical trials or submitting eIND applications. The American Red Cross has also set up a website for interested donors (www.redcross.org/plasma4covidExternal Link Disclaimer) and the FDA continues to work with others in this area to help encourage additional donations.

During this challenging time, many people are asking what they can do to contribute to the COVID-19 response. Those individuals who have recovered from COVID-19 could have an immediate impact in helping others who are severely ill. In fact, one donation has the potential to help up to four patients. Convalescent plasma can also be used to manufacture a biological product called hyperimmune globulin, which can similarly be used to treat patients with COVID-19.

People who have fully recovered from COVID-19 for at least two weeks can contact their local blood or plasma collection center today to schedule an appointment. We encourage individuals to consider donating and hope this information will serve as a helpful resource to facilitate this important act of kindness.

The FDA, an agency within the U.S. Department of Health and Human Services, protects the public health by assuring the safety, effectiveness, and security of human and veterinary drugs, vaccines and other biological products for human use, and medical devices. The agency also is responsible for the safety and security of our nation's food supply, cosmetics, dietary supplements, products that give off electronic radiation, and for regulating tobacco products.

# THE CENTRAL DRUG REGULATOR HAS GIVEN ITS GO-AHEAD TO A PROPOSAL BY THE INDIAN COUNCIL OF MEDICAL RESEARCH (ICMR) FOR THE CLINICAL TRIAL OF CONVALESCENT PLASMA IN COVID-19 PATIENTS, AS PER THE PROTOCOL DEVELOPED BY THE TOP MEDICAL BODY.

The Drug Controller General of India (DGCI) said ICMR has submitted a list of institutes, which have shown an interest in the trial, to the Central Drugs Standard Control Organisation (CDSCO) and they may do so in consultation with the health research body.

"It is to inform that in light of public interest the proposal of ICMR for conducting the said trial has been reviewed through the Subject Expert Committee in its meeting held on April 13 under accelerated approval process in light of the current prevailing situation of COVID-19 and based on the recommendation of the committee.

"The CDSCO has conveyed its no objection for conduct of the clinical trial subject to certain amendments in the protocol and various conditions under the Drugs and Clinical Trial Rules 2019," the central drug regulator said in a notice.

The notice underlined that ICMR has developed a protocol for a controlled clinical trial with convalescent plasma in moderate COVID-19 patients which has been reviewed by the committee and the same may also be considered by the applicants as appropriate.

In convalescent plasma therapy, antibodies from the blood of patients who have recovered from COVID-19 are used to treat severely infected patients.

The study is aimed at assessing the efficacy of convalescent plasma to limit complications in COVID-19 patients and to evaluate the safety of treatment with anti SARS-CoV-2 plasma in coronavirus-infected patients.

The death toll due to COVID-19 rose to 480 and the number of cases in the country climbed to 14,378 on Saturday, according to the Union Health Ministry.

The ICMR has already sought participation in a phase-II randomised controlled trial to assess the safety and efficacy of convalescent plasma.

Currently, there are no approved treatments for COVID-19. The management plan is supportive care with supplemental oxygen and mechanical ventilation.

Multiple trials are being done across the globe to assess the efficacy of various treatment strategies, the ICMR said.

The WHO initiated the "solidarity trial" in several countries to compare the effectiveness of the following regimens against COVID-19: Remdesivir, Lopinavir/Ritonavir, Lopinavir/Ritonavir with interferon beta, and Hydroxychloroquine.

In a clinical trial, Lopinavir/Ritonavir did not demonstrate any benefit over standard of care.

The US FDA recently approved convalescent plasma from patients recovered from COVID-19 for the treatment of severe or life-threatening coronavirus infections.

In a small case series, five critically ill novel coronavirus-infected patients with Acute Respiratory Distress Syndrome (ARDS) were treated with convalescent plasma containing neutralizing antibodies.

Infusion of plasma was followed by improvement in clinical status in all five patients, with no deaths and the study reported that three patients were discharged, whilst two continued to be stable on mechanical ventilation.

In another small case series of four patients, including one pregnant woman, it was seen that all four recovered eventually, the ICMR said.

In another feasibility study of convalescent plasma therapy, 10 severely-ill patients were transfused with 200 ml of convalescent plasma and clinical symptoms rapidly improved in three days.

Historically, it has been used in viral diseases such as poliomyelitis, measles, mumps and influenza before vaccines became available, the research body said.

A meta-analysis of 1,703 patients with H1N1 influenza during the Spanish Flu of 1918 suggested that patients who received convalescent plasma had lower mortality. Furthermore, 84 patients with Ebola virus disease who were transfused with convalescent plasma without known levels of neutralizing antibodies did not have a survival benefit.

Convalescent plasma was also studied during the previous coronavirus outbreak of SARS in 2002-2004. In a retrospective study of 80 patients, it was observed that patients who received convalescent plasma before day 14 of illness had better outcomes, defined as early hospital discharge, compared to patients who received it after day 14 of illness.

"Considering the lack of efficacious treatments for COVID-19 and the epidemic situation with high mortality rate, the US FDA has approved convalescent plasma for COVID-19 for clinical trials, expanded access and single patient emergency investigational new drugs," the ICMR said.

A majority of the adverse effects associated with plasma transfusion are non-lethal.

"We hypothesize that the use of convalescent plasma will improve the clinical outcomes in patients with moderate COVID-19 infection. We designed this phase II, open label, randomized clinical trial with the primary objective to assess the safety and efficacy of the convalescent plasma to limit complications in COVID-19 patients," the ICMR said.

*Source: The Hindu*

# WHAT IS CONVALESCENT PLASMA? IS IT A COVID-19 TREATMENT ?

**Michael J. Joyner, M.D,, Mayo Clinic.**

Researchers are testing the use of donated blood as a treatment for people with severe coronavirus disease 2019 (COVID-19). People who've recovered from COVID-19 have antibodies to the disease in their blood. Doctors call this convalescent plasma. Researchers hope that convalescent plasma can be given to people with severe COVID-19 to boost their ability to fight the virus.

The U.S. Food and Drug Administration has outlined the requirements that individuals must meet to donate blood for this research. Before donated blood can be used, it must be tested for safety. It then goes through a process to separate out blood cells so that all that's left is plasma with antibodies.

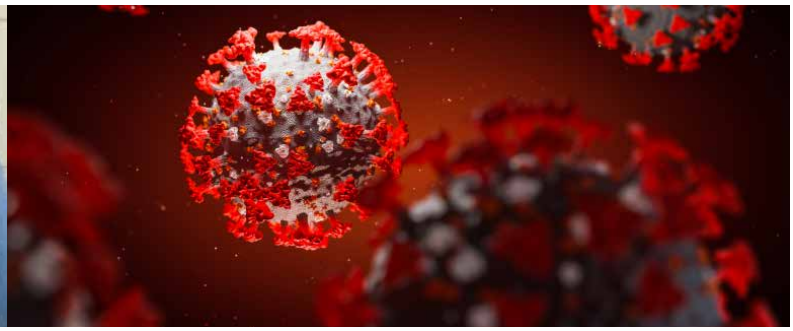
The immediate goal of this research is to determine if convalescent plasma can improve the chance of recovery for people with the most severe disease. A second goal is to test whether convalescent plasma can help keep people who are moderately sick from getting sicker.

Such a treatment would be a boon for people at high risk — such as with underlying medical conditions, as well as family members and health care workers who have been exposed.

In addition, learning more about the use of convalescent plasma now will help health care workers be better prepared if a second wave of disease occurs, as has happened with past viral outbreaks.

To find out if you may be eligible for this treatment, talk with your doctor.

If you've had and recovered from COVID-19, consider donating blood through the American Red Cross or your local donation center. They can provide information about the donation process.



# WHEN BLOOD RUNS COLD: COVID-19 LOCKDOWN DEEPENS PROBLEMS FOR THOUSANDS OF THALASSAEMIA PATIENTS

As the country is under lockdown for at least three weeks to prevent the spread of the novel coronavirus, the thalassaemia patients are not getting blood donors and are also unable to easily travel for treatment and therapy.

New Delhi: The nationwide lockdown to stem the COVID-19 outbreak has spelt trouble for thousands of thalassaemia patients in the country who need regular blood transfusion and a special therapy to survive.

“I need two units of blood every two weeks. I get it done in Sanjay Gandhi PGI in Lucknow. Since there is lockdown everywhere, it is not possible to travel and nearly impossible to get (blood) donors,” says 24-year-old Snigdha Chatterjee, who is a scholar at Gorakhpur University.

Apart from blood transfusion, thalassaemia patients like Snigdha have to regularly undergo iron chelation to extract the extra iron deposited in the body.

Thalassaemia is a genetic blood disorder in which the body makes an abnormal form of haemoglobin.

This causes excessive destruction of red blood cells, which leads to anaemia – a condition where the human body doesn’t have enough normal, healthy red blood cells.

Kurshid Khan, 11, another thalassaemia patient who lives in a village near Basti in Uttar Pradesh, is also fighting for his life as he cannot travel to hospital due to the lockdown and poor economic condition.
“Lucknow is almost 200 kilometres from our village. How will I take my son to hospital in these conditions? I don’t know whether he will survive if this lockdown continues,” Khurshid’s mother Shahnaz told News 18.
India is considered the thalassaemia capital of the world. Every year, more than ten thousand children are born with ‘thalassaemia major’ – the worst form of this condition.

The disease is transferred from parents to the child. If one of the parents is a carrier of thalassaemia, the child may inherit ‘thalassemia minor’ where symptoms may not show and the patient can lead a normal life. But if both parents are carriers of this disease, there is a greater chance of inheriting the more serious form.

Snigdha (right) with Dhiksha (left) looking into a phone in the hospital.

According to data available, there are more than 3.5 crore carriers of thalassaemia in our country. It is estimated that every month almost one lakh patients undergo blood transfusion to battle this ailment and more than two lakh units of blood is required in India for the treatment of thalassaemia patients.

Government medical facilities are very limited for regular treatment of this condition. More than 90% of treatment expenses are out of pocket and a patient spends around one lakh rupees every year for survival.

“I don't have enough money to meet my daily expenses. So, I wanted to take him (Khurshid) to Mumbai as one of my relatives had promised cheaper treatment there. But now trains are also not running and I am stuck here,” Shahnaz said.

Sanjay Gandhi PGI of Lucknow receives patients not only from Uttar Pradesh but also from several other parts of India.“I am a regular visitor at SGPGI. Besides Uttar Pradesh, patients come from other states like Bihar and Jharkhand as well. Many of these patients are very poor and cannot even bear the expenditure of travel,” Snigdha told News 18.

As the country is under lockdown for at least three weeks to prevent the spread of the novel coronavirus, the thalassaemia patients are not getting blood donors and it will be a difficult period for them. Blood donation camps are not being organised and there is hardly any available in blood banks.

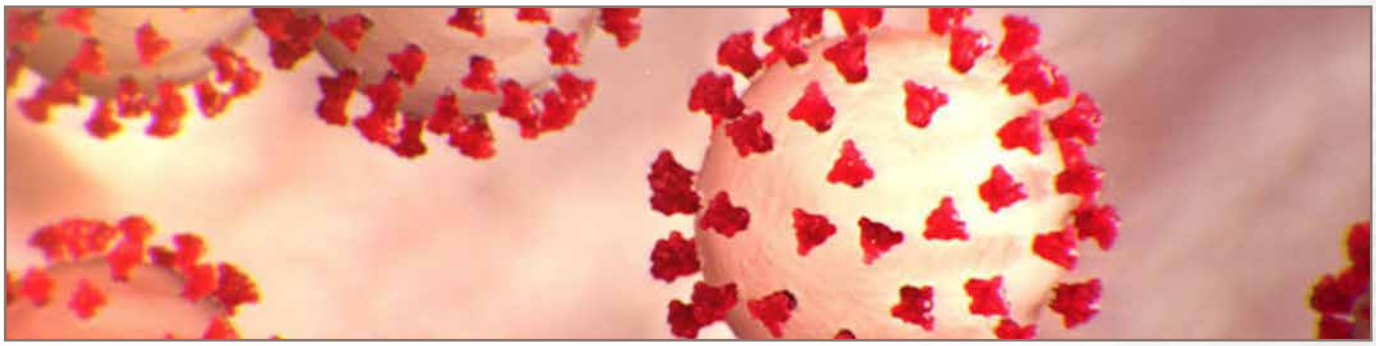
The Indian Red Cross Society (IRCS) tweeted last week, “To contain the spread of COVID2019, mass gatherings have been cancelled. Keeping in line with this directive, IRCS NHQ has cancelled its scheduled blood donation camps, leading to an acute shortage of blood at IRCS NHQ blood bank.”

In another tweet, IRCS wrote, “Thalassemic children, regular recipients of fresh blood at our blood bank are the worst affected. We request you to come forward & join hands with us in this critical time of need & give them 'The Gift of Life'! Donate blood today at IRCS NHQ, between 10 am to 6 pm. COVID2019.”

The relatives of patients have started a campaign over social media to solicit help and spread awareness.

“We are trying to flag the issue through social media posts and create awareness among people so that they come out for help and humanitarian agencies take initiative to collect blood by going door to door. There are volunteer donors and I am sure they will come out. The Residents' Welfare Societies (RWAs) can play an important role in this (blood collection) regard,” says Pankaj Mishra, uncle of Snigdha.

*Source: News 18*



# CONVALESCENT PLASMA'S SUCCESS AGAINST COVID-19 CONTINUES IN NEW STUDY

Researchers in China have been experimenting with using blood plasma from patients who have recovered from COVID-19 as a possible way to treat severely ill COVID-19 patients. In a new study published in the Proceedings of the National Academy of Science, clinicians reported that convalescent plasma therapy improved the outcomes of ten patients with severe cases of COVID-19.

"It's consistent with what I'm hearing from other places," Michael Joyner, a physiologist at Mayo Clinic who is leading a convalescent plasma clinical trial in the US and wasn't involved in the study from China, told The Wire Science.

In convalescent plasma therapy, a dose of antibody-containing plasma obtained from the blood of recovered individuals is transferred to persons with the disease in order to treat it. It's an experimental therapy going back a hundred years, having found use – to different efficacies – in the treatment of the Spanish flu as well as, more recently, the 2009 H1N1 influenza, SARS and MERS viruses.

Convalescent plasma could shorten the duration of a COVID-19 illness or render it less dangerous. The therapy can be administered at different stages: after exposure to a known carrier but before infection to boost immunity, and to critically and non-critically ill patients to improve their outcomes.

At the moment, while researchers are exploring a number of experimental therapies and drugs, regulatory bodies have not approved any specific antiviral agents to treat COVID-19. Convalescent plasma is one of three immune-based options that may be able to tackle COVID-19 (the other two are hyperimmune serums and intravenous immunoglobulin products, which comprise antibodies against other human coronaviruses that may respond against the SARS-CoV-2 virus as well). However, convalescent plasma is easier to give even at the level of a single institution compared to the other options, which may require assistance from pharmaceutical companies.

"This is the second encouraging case series in critically ill patients from China, but we definitively need phase 3 randomised controlled trials to assess the clinical benefit of convalescent plasma therapy," Daniele Focosi, a transfusion specialist at Pisa University Hospital, Italy, who is involved in a multi-centre clinical trial for convalescent plasma and was not associated with the Chinese study, told The Wire Science.

Yet another study published in the Journal of the American Medical Association reported that five patients who were receiving mechanical ventilation and were then administered convalescent plasma therapy had recovered from the disease. Compared to phase 3 clinical trials, phase 2 trials are conducted in smaller groups to check for efficacy and safety, and have already proven during "previous pandemics that convalescent plasma is safe and partially effective."

In the newest study, the researchers recruited ten patients – six male, four female – at three hospitals in China. At a median time of 16.5 days from the beginning of their respective infections, the patients were administered 200 ml of convalescent plasma obtained from former COVID-19 patients. In addition, all patients also received antiviral agents and supportive care.

The donors were tasked with supplying plasma four days after their discharge from hospital and the collected blood product was treated to ensure the absence of any virus. The very high titres of antibodies needed for convalescent plasma therapy can only be drawn from patients that have had a bad case of the condition soon after their discharge, Focosi added.

Within three days, the patients all showed robust improvements across several clinical symptoms, including cough, fever, shortness of breath and chest pain. Eight of the ten patients had been receiving some form of ventilation or oxygenation, and showed lower dependence post-transfusion. A number of immunological and other parameters also improved following transfusion.

Within seven days, radiological scans showed that lung damage was reduced to different extents in the patients. Moreover, the viral load in seven patients who had had viraemia, which is the presence of virus particles in blood, was imperceptible seven days after the transfusion even as the researchers recorded high levels of antibodies. Except for one patient, who developed a facial red spot, none displayed any adverse side effects either.

The team did compare their results in these 10 patients to a control group of 10 patients who had been matched for gender, age and the severity of their COVID-19 infection, but the antiviral and supportive care administered was not necessarily similar across patients or even within each of the two groups.

"In this sort of brief report, all you can try to do is match the controls you have to the cases," Joyner said. "When there are larger numbers [of participants], more extensive case control studies with better matching will be available and more insights about recovery will be available."

While all patients showed significant recovery across the board, with three even being discharged (while the remaining seven were well on their way to full recoveries), researchers agreed that more extensive randomised controlled trials are needed to assess the efficacy of the therapy, and pave its way for widespread use. Such trials could also help lock down the best dosage and time of transfusion.

Currently, there are more than 20 clinical trials using convalescent plasma being conducted worldwide.

**Sukanya Charuchandrahas written for The Scientist, Johns Hopkins Magazine and Firstpost.**

# HOW DONATING BLOOD IMPACTS YOUR HEART

**Giving from the heart is good for your heart**

Giving blood is part of a heart-healthy lifestyle and donating on a regular basis has proven health benefits. In fact, studies have shown that donating blood can be good for your heart.

**How do blood donations impact your heart?**

OneBlood Medical Director, Dr. Richard Gammon, M.D., writes "There have been studies published that show blood donors enjoy better health (Transfusion 2007) and blood donation reduces blood pressure (Transfusion 2016) and cholesterol (Am J Epi 1998)."

High blood pressure or hypertension is one of the leading risks for heart attacks and there is evidence that regular blood donations may be beneficial. Being a regular donor may help with blood flow and reduce arterial blockages.

High iron stores can increase a person's risk of heart attacks. When you give blood it depletes your iron stores and helps your body to create new blood. About 500ml of whole blood is taken during each blood donation, which removes 225-250 mg of iron.

**Blood donors get a health and wellness check up**

Each time you donate you'll receive a free wellness checkup that includes:

- Blood Pressure Check
- Pulse
- Temperature
- Iron Count
- Cholesterol Reading

You can use the results of this checkup to determine your cardiovascular risk factor as well as other possible health conditions. As a OneBlood donor, you can track your wellness checkups with each donation through the donor login portal on our website.

Donating blood can be good for your heart and offers other health benefits as well.

**The wellness checkup can also reveal undetected health issues**

Jaime, was 16 and excited to give blood for the first time at her high school blood drive. During her wellness check, her blood pressure was extremely high and she was not able to donate.

She immediately told her mom and went to the family physician. After many tests, she discovered she had a narrowed renal artery, which impacted the growth of her kidney. She needed surgery right way. Jaime credits the health check with saving her life.

She says, "In the process of helping people, at the same time you are getting a health checkup. Who doesn't love that?"

*Be heart healthy: give blood every time you are eligible*

***Heather Georgoudiou,***
*Digital Marketing Manager at One Blood*

# Letters to the editor

*Hello Baby san,*

*Thank you, Baby-san, for always sharing information with us.*
*Please continue the blood donation activities of the voluntary as it is.*
*I hope that if even a small force continues, it will surely become a big wave someday.*

*Best regards,*

**Yoshihiro Kimura**
**Director, Audit/Supervisory Committee**
**Terumo Corporation**

*Sir,*
*In a blood donation camp, only Hb level is examined or the same is checked on observation by the Medical Officer of Blood Donation Camp. If the basic criteria is fulfilled, ,then the willing person is considered FIT for blood donation.*
*Suppose the other blood cell ( RBC, WBC, Platelet) counts of the person who is willing to donate blood are not within the normal level, then will he be considered FIT for blood donation at the camp. At the camp there is no procedure to verify the count of blood cells.The person may not be aware of his deficiency of his blood count.*
*Kindly offer views on the issue for knowing the matter for criteria of blood donation in case of deficiency of blood count.*

**Sitangsu Kumar Bhaduri**
**11A/2, Dr. P. N. Mukherjee Street,**
**Chatra, Setampore, Dist-Hooghly (W.B.)**
**Pin - 712204**

*Dear Ms Baby,*

*Can you please change my email id FROM alphonsek_2000@yahoo.com TO alphonsek.2000@gmail.com*
*Hope you are doing good and recollect my meeting you at your office few years back. Malayala Manorama (17th Jan 2010)had covered me on my work in the field of blood donation in Bangalore and Kerala editions too. Attaching the same*
*We too felicitated Joydeb at Bangalore on his cycle tour (Attaching 1 snaps)*
*By the way, can I share a small article(yet to be written on LionsBloodLine database and help extended at Bangalore? I am thinking of writing an article with aim of promoting the movement.*
*PLEASE REPLY to alphonsek.2000@gmail.com /mail@lionsbloodline.com Please remove yahoo id from the mailing list and replace with the changed gmail.id*

*Regards*
**Lion Alphonse Kurian Kamicheril**
**Lions Club of Bangalore Sanjaynagar**
**(M) 9448812330**

*Thanku for sending the bloodline journal.*

**Dr Marykutty Chacko ,**
**Blood bank medical officer**
**M.B.M.M.Hos,**
**Kothamangalam**



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niche PREMIUM DIGIT...PRINT HUB TRIVANDRUM Ph: +91 9562230001 www.nicheprinthub.com