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Review Article

Impact of Social Distancing due to COVID-19 on Blood Donation in India

Paramjit Singh Dhot[1], Sana Mir[2], Tarundeep Dhot[3], Priyanka Gulati[4], Mayurika Tyagi[5], Pratika Uniyal[6], Trupti Barot[7], Shruti Grover[8], Rohini Srivastava[9]

[1]Professor, Pathology, Saraswati Institute of Medical Sciences, Hapur, UP, India.
[2]Index Medical College, Hospital and Research Centre, Nemawara Road, Indore, MP, India.
[3]Associate Partner, Artificial Intelligence, IBM, Toronto, Canada.
[4]Assistant Professor Pathology, G S Medical College, Pilkhua, UP, India.
[5,7]Assistant Professor, Santosh Medical College, Ghaziabad, UP, India.
[6]Consultant Pathology Dr Lal Path Lab, Chakrabarti Road, Dehradun, UK, India.
[7]Consultant Transfusion Medicine, Pratham Blood Bank, Ahmedabad, Gujarat, India.
[8]Consultant Pathology, Supreme Hospital, Charmwood Village, Faridabad, U P, India.
[9]Consultant Pathology, Path Lab, Kanpur, UP, India.

ABSTRACT

To mitigate and slow the spread of COVID-19, many countries have adopted unprecedented physical distancing policies, including India. An estimate of COVID-19 positive cases is being done because of social distancing and lockdown as non-pharmacological intervention methods. The social distancing measures adopted by the Indian public have substantially reduced contact levels and will likely lead to a substantial impact and a decline in cases in the coming weeks.

There is an increase in blood shortage all over the world including India. Most of the blood banks in India are running on reserves, risking another crisis. As per the American Association of Blood banks (AABB), there is no reported or suspected cases of transfusion transmitted COVID-19. Similarly, in India there is no reported case of transfusion transmission. Social distancing of blood donors is of paramount importance for blood donors while blood collection. Similarly organizing of blood donation camps by organisers and blood bank staff should ensure the same. Facilities for hand washing for blood donors and use of mask will be ensured. Blood donors with travel history should be deferred for 28 days.

Keywords: COVID-19, Social Distancing, Blood Safety, Blood Shortage.

***Correspondence to:**

Dr. Paramjit Singh Dhot,
Professor,
Department of Pathology,
Saraswati Institute of Medical Sciences,
Hapur, UP, India.

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INTRODUCTION

As of September 23rd, 2020, there are 32,082,948 confirmed cases reported and 981,217 deaths from COVID-19 have been recorded from 188 countries. In an attempt to mitigate the COVID-19 pandemic, many countries have adopted unprecedented physical distancing policies.[1,2] On May 27, with just 158,086 confirmed cases, the Indian Government implemented strict social distancing measures instructing individuals to stay at home and avoid leaving their house except to buy essential items such as food and medicines. This followed the closure of sporting events, schools, restaurants, bars, gyms and other leisure or hospitality-related businesses the previous week[3] and an increase in social distancing among the population that had been taking place for several days before the announcement.[4]

Efficient and safe vaccination is not available and passive immunisation using the plasma of recovered COVID 19 donors could offer a suitable therapeutic strategy. Blood is the elixir of life. Blood is an essential medicine, and it relies on donation from healthy donors in the community. There is a common myth that will I get infection during blood donation. Despite COVID-19, blood is still needed for different groups of patients. From short lived platelets to red cells and plasma continuous and non-interrupted blood supply is crucial. Scheduled appointments and scheduled blood drives are mostly canceled It results in significant pressure on the blood service to supply blood products to hospitals. A new question arises, will get COVID-19 at blood centre as we are advised to stay home as far as possible.

SOCIAL DISTANCING

Social distancing interventions attempt to reduce contacts relevant to infectious disease spread between individuals. Multiple surveys have been instigated on the uptake of different physical distancing measures during this current pandemic, but these have not explicitly measured contacts between people.[5–7] To make accurate predictions on the impact of these measures, quantitative data on relevant contact patterns is required.[8–11] Only one previous survey conducted in two Chinese cities, Wuhan and Shanghai, in February 2020 ,quantified the impact of these measures on individuals' contact patterns during the COVID-19 pandemic.[12] In the present paper, we discuss the impact of social distancing due to COVID-19 pandemic on blood donations and availability of blood.

BLOOD BANKS

The total number of blood banks in India are 3,023. Approximately 1.1543 million blood donations are done annually in India. Voluntary blood donations constitute 78% of all blood donations in India.

Blood banks in various hospitals in India have raised concerns at the decreasing blood reserves even as the country continues to report fresh COVID-19 positive patients. The ongoing 63-day stay at home and social distancing policy affecting the movement of blood donors across India has led to shortage in availability of blood for patients, dependent on transfusion as a life saving measure. The Health Ministry, Government of India (GOI), issued an advisory calling for voluntary blood donation. The Director of National Blood Transfusion Council communicated to the blood banks across the country that since there continues to be a demand for blood and blood components, especially for Thalassemia patients, it is essential that supplies of safe blood be maintained at licenced blood centers in the country. As per the GOI data available, the total blood availability has dropped from 38,189 units in February 2020 to 26,741 units in March 2020. Further, only 3,037 units have been received in the first 10 days of April 2020 (Figure 1).

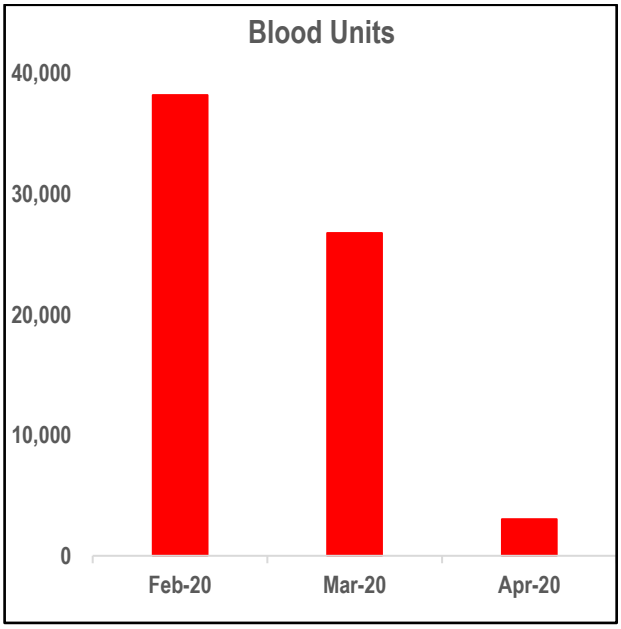

Figure 1: Impact of Social Distancing on Blood Donation in India

The number of blood donation camps has also come down from 473 in February 2020 to 46 in April 2020. The voluntary blood donations have gone down by almost 100%. Even in-house replacement donations have also reduced by approximately 50%. For instance, in New Delhi, approximately 2,500-3,000 replacement blood units are received monthly as in-house donation but presently only 1,500 replacement blood units are being received. Due to this, hospitals presently are conducting fewer surgeries. With approximately 1.5Million cancer patients in the country, the requirement, despite the reduced demand is still high.

According to WHO standards, a country requires blood units equal to 1% of its population. Experts believe that as per these standards, India is already far behind, but the lockdown and the imposed social distancing norm has further worsened the problem.

Most of the government run programs for pre-natal care have been cancelled during the lockdown period leading to more risk among women who under normal conditions receive care in these camps. More than half of the women in India are anemic and most maternal deaths in the country are due to haemorrhage which makes blood a critical component.

The only recourse left is to take blood directly from the donor and transfer it to the patient. This procedure is called unbanked directed blood transfusion (UDBT) which is an illegal practice in India under the Drugs and Cosmetic rules enacted in 1945. Many countries including USA allow UDBT where family members can directly donate blood to their patients without needing to store it first.

Till date, no cases of COVID-19 transmission by blood transfusion have been reported. Therefore, no action is being recommended by American Association of Blood Banks, US Food and Drug Authority and Center for Disease Control because no data is available to suggest risk of transfusion of COVID-19. Since respiratory viruses do not transmit by blood transfusion and individuals are not at risk of contracting COVID-19 through the process of blood donation or blood transfusion.

To maintain safe and adequate supply of blood and blood components, it is recommended that blood donation may be carried out within the premises of the blood bank or by organizing blood donation camps keeping in mind social distancing norms, guidelines on infection control and biomedical waste disposal rules. The staff of the blood bank and the organizers of the blood donation camp will ensure safety of the potential blood donors and any other associated agency.

Presently no guidelines are available from FDA. Deferrals for travel to China may be used by blood banks before collection of blood from blood donors. Recommendations by AABB's Transfusion Transmitted recommendations include:

1) **Voluntary Implementation of Travel deferrals:** Blood banks must have their own SOP for donor deferral.
   - Donor history questionnaire (DHQ) to identify individuals who have traveled to China in the past 28 days.
   - A 28 day deferral covers twice the maximum incubation period of 2019- nCoV .
   - A donor deferral strategy can be implemented using the current travel deferral policy.

COMBINATION OF DEFERRALS RELATED TO ILLNESS AND CONTACT AND ENHANCED EDUCATION

SOP should include combination of donor education, travel deferrals, deferrals for contact with SARS and for a diagnosis of SARS. Guidelines are being prepared by AABB along with Donor deferral task force.

The impact of COVID-19 on transfusion medicine and blood safety is that COVID-19 patients seem to be infectious during the asymptomatic period. Hence, blood donors must be carefully evaluated to prevent a potential blood borne transmission. The Italian National Blood Center recommends donor deferral in the 14 days prior to donation who had fever more than 37.5C, respiratory tract symptoms (cough, shortness of breath, sore throat, running nose) or who had contact with suspected or confirmed case of COVID-19. The importance of SOP to collect post donor information for all donors was emphasized. Preliminary data indicated that viremia is present in 15% of patients although with low RNA concentration, thereby indicating in principle that risk of transmitting the virus through blood transfusion cannot be excluded. Convalescent plasma therapy has been used in China for COVID-19 patients.[11, 18, 19, 20, 21, 22, 23.]

INFECTION CONTROL

1. **Social Distancing** measures should be followed in the blood donation site should be strictly adhered to as delineated by the authorities from time to time keeping in mind 1-meter physical distancing, no shaking of hands, embracing. Protocols of hand washing and ensuring proper cleanliness of the equipment required during the blood donation camp. No overcrowding should be permitted. The blood donation couches will be kept at a distance of minimum 1-meter of each other during the blood donation.
2. **Hand Hygiene:** This is appropriate for all modes of transmission including airborne, droplet and contact. When hands are visibly dirty or soiled with blood or other body fluids or after using the toilet washing with soap and water.
3. **Infection Control Measures:** The national and state communicable disease control guidelines for COVID-19 for communities is as follows -in blood banks, the hospital guidelines should be followed as the blood bank is not a medical care facility. The staff and blood donors should be educated by the organizers and blood bank staff for adhering to the infection control measures. Running water, soap, hand sanitizers, personal protective equipment and colour coded dustbins will be provided for waste disposal as per the waste disposal guidelines.
4. Use in hands are not visibly soiled and running water is not available.
5. Cough etiquette: appropriate for all modes of transmission, coughing into the elbow.
6. Avoid close contact with confirmed or suspected case of coronavirus disease.
7. Stay at home or self-defer if staff/donor are unwell or have contact with someone confirmed for COVID-19.
8. Safe disposal of used gloves, masks, caps and other soiled material.

CONCLUSION

Over the decades, there have been multiple instances of emergence of Corona viruses that have caused human and veterinary diseases, and this is expected to continue in the future due to their ability to recombine, mutate, and infect multiple people.

1. **Propensity to Jump Species:** The virus may jump species and must be vigilantly investigated.
2. **Protein Characterization:** Many of the proteins need to be characterised. More research is required to develop a vaccine and alleviate suffering of mankind.
3. Guidelines for blood banks have been issued by the Ministry of Health, GOI.
4. It is the responsibility of National Blood Transfusion Council, and State Blood Transfusion, to ensure safe and optimal supply of blood for the needy patients.
5. Blood Banks and blood donation camp organisers will ensure strict adherence to guidelines to ensure safety of blood donors, blood bank staff and blood donation camp organisers.
6. Social distancing is of paramount importance to ensure supply of safe blood to the needy patients.
7. Wide publicity should be given to blood donation drives and in-house blood donations to avoid shortage of blood in blood centers across the country.

Table 1: Current statistics for COVID-19 globally as of 23rd September 2020

Country	Total Cases	New Cases	Total Deaths	New Deaths	Total Recovered	Active Cases	Serious, Critical	Tot Cases/ 1M pop	Deaths/ 1M pop	Total Tests	Tests/ 1M pop
World	**32,082,948**	**312,877**	**981,217**	**6,262**	**23,657,313**	**7,444,418**	**62,402**	**4,116**	**126**		
USA	7,138,708	40,771	206,558	1,077	4,387,230	2,544,920	14,103	21,538	623	100,548,988	303,359
India	**5,730,184**	**89,688**	**91,173**	**1,152**	**4,671,850**	**967,161**	**8,944**	**4,143**	**66**	**66,279,462**	**47,920**
Brazil	4,627,780	32,445	139,065	906	3,992,886	495,829	8,318	21,736	653	17,900,000	84,074
Russia	1,122,241	6,431	19,799	150	923,699	178,743	2,300	7,689	136	43,600,000	298,734
Colombia	784,268	6,731	24,746	176	662,277	97,245	863	15,376	485	3,499,136	68,601
Peru	782,695	6,149	31,870	98	636,489	114,336	1,381	23,663	964	3,751,583	113,421
Mexico	705,263	4,683	74,348	651	506,732	124,183	2,672	5,457	575	1,604,845	12,417
Spain	693,556	11,289	31,034	130	N/A	N/A	1,436	14,833	664	11,820,505	252,796
South Africa	665,188	1,906	16,206	88	594,229	54,753	539	11,183	272	4,083,757	68,658
Argentina	664,799	12,625	14,376	424	525,486	124,937	3,511	14,678	317	1,815,738	40,090

Table 2: Current statistics for COVID-19 in India as of 23rd September 2020

Total Cases	5,730,184
Cases per Total Population	0.41%
Total Deaths	91,173
% Deaths per Total Cases	0.01%
Total Recovered	4,671,850
Recovery Rate	81.53%
Active Cases	967,161
Tot Cases/ 1M pop	4,143
Deaths/ 1M pop	66
Total Tests	66,279,462
Tests/ 1M pop	47,920

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