



BLOOD DONOR DEFERRALS DURING COVID PANDEMIC- A RETROSPECTIVE OBSERVATIONAL STUDY.

Medical Education

Dr Ankit Sharma Senior Resident. IHTM, SMS Medical College, Jaipur

Dr Bheem Singh Meena HOD, IHTM, SMS Medical College, Jaipur

Dr Muskan Chaudhary* Resident Doctor, IHTM, SMS Medical College, Jaipur *Corresponding Author

ABSTRACT

Background and Objectives Blood donor deferral has been an essential tool for blood safety. The COVID-19 pandemic has affected blood transfusion services mainly its impact on donor deferral rate, donations considerably compromised due to the non availability of blood donors. **Materials and Methods** The retrospective observational study was done based on our annual collection of 2021- 2022 .All the deferred donors were divided into different categories: (1) medical causes, (2) surgical causes, (3) drugs and vaccination, (4) risk of transfusion-transmitted diseases, (5) miscellaneous causes and (6) flu-like symptoms covering COVID-related deferrals, donor demography were analysed by SPSS software version 25. **Results** The donor deferral rate was 12.84% during COVID periods. During the pre-COVID period, Category 1 and 3 deferrals and during COVID period, Category 6 deferrals were significantly higher. Category 1 deferral was more in middle-aged adults as compared to young and old adults ($p < 0.05$). **Conclusion** COVID-19 significantly affected the donor pool changing the pattern of donor deferral. The study helped in identifying targeted donor populations and planning donor recruitment strategies in future pandemic crises.

KEYWORDS

Blood donor deferral, blood donor management, blood supply, coronavirus disease, blood safety, retrospective study

INTRODUCTION

Coronavirus disease caused by novel severe acute respiratory syndrome coronavirus 2 (SARSCoV2) virus was first detected at Wuhan, China, on 31 December 2019 and was Declared as a global pandemic on 11 March 2020, by World Health Organization has resulted in a worldwide blood crisis.

This retrospective study was planned to see the impact of COVID-19 on deferral patterns among the blood donors and its impact. The disease has affected 213 countries and territories around the world which has an estimated average of 2138 laboratory-confirmed patients and 84 deaths per one million populations. However, only limited data have shown that viral RNA can be detected in plasma or serum of COVID-19 patients. The COVID-19 pandemic has adversely affected blood transfusion services all over the India and world.

OBJECTIVE

Our retrospective study analyses the frequency as well as reasons for donor deferral, including COVID vaccination, post and pre COVID period with other deferral criteria's of donors from January 2021 to January 2022 and were analysed.

MATERIALS AND METHODS

The retrospective observational study was done based on our annual collection of 2021- 2022 (63000 per year with respect to SMS Blood Centre not including attached blood centres) before the Covid-19 pandemic with a 95% confidence interval and 5% margin of error.

We selected the blood donors as per the Drugs and Cosmetic Acts and Rule 1945 (with recent amendment) covering national guidance to blood transfusion services in light of the Covid-19 pandemic issued by the national blood transfusion council.

Study Period

Data for blood donation indoors within SMS blood bank over 12 months from January 2021 to January 2022 were analysed retrospectively. Institutional review board approval was obtained to assess changes in blood use and blood donation as well as its deferral including its causes.

The patient blood management database with clinical outcomes covering the period from January 2021 to January 2022, a retrospective observational study was done. All the deferred donors were divided into **six different categories**: (1) medical causes (2) surgical causes (3) drugs and vaccination (4) risk of transfusion-transmitted diseases (5) miscellaneous (6) flu-like symptoms.

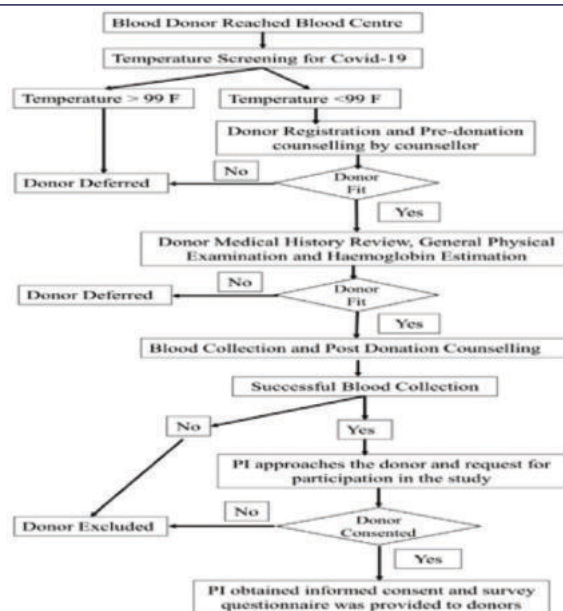


Chart-1

Donor deferral policy NBTC deferral guidelines were followed during the pre-COVID period. A 28-day deferral period was implemented for the following cases-

- I- Having a fever and symptoms of a respiratory illness in the past 28 days; whether or not symptoms were associated with COVID19 disease
- II- Having a family member in the house with a fever along with respiratory symptoms in the past 28 days
- III- Having a close contact with someone who is diagnosed with confirmed COVID-19 in the past 28 days
- IV- Having a travel record to highly prevalent COVID-19 areas in the past 28 days
- V- The volunteers who have been diagnosed with COVID-19 (after recovery and the resolution of symptoms)

Donors from containment zone/red-zone/hot spot as declared by the Government of Rajasthan(as our Institute is under the Rajasthan State of Jurisdiction) were deferred for 28 days.

Comparison of total deferral, different categories of deferral between pre-COVID and COVID periods (chi-square test) with respect to SMS Blood Centre only.

Table1

	Pre-COVID	COVID
Total Registration	63000	30000
Total Deferral	11320	8022
CAT 1	4256	3033
CAT 2	1090	1001
CAT 3	2080	1098
CAT 4	1694	1205
CAT 5	1458	788
CAT 6	742	897

CAT 1, CAT 2, CAT 3, CAT 4, CAT 5 and CAT 6 represents deferral due to medical causes, surgical causes, drugs and vaccination, transfusion transmitted infections, miscellaneous causes and flu-like symptoms, respectively.

Table-2

	Odd ratio	P-value
CAT 1	.88	.165
CAT 2	1.2	.572
CAT 3	.65	<0.05
CAT 4	.88	.390
CAT 5	.77	.095
CAT 6	4.5	<0.05

Table-3

CAT 1	Odd RATIO 0.78–1.05
CAT 2	0.80–1.58
CAT 3	0.49–0.77
CAT 4	0.71–1.20
CAT 5	0.61–1.06
CAT 6	4.01–6.59

RESULTS:

As per the World Blood Donor Day Slogan of 2020- "Safe blood saves lives," recruitment of safe and healthy blood donors amidst the COVID-19 pandemic remains the primary challenge of blood centers. The donor deferral rate was 12.84% during COVID periods. During the pre-COVID period, Category 1 and 3 deferrals and during COVID period, Category 6 deferrals were significantly higher. A reversal in pattern with increased blood pressure (40.3% vs. 24.05%) over-riding low haemoglobin (34.87% vs. 55.6%) was noted in the Category 1 deferral during the COVID period. Category 1 deferral was more in middle-aged adults as compared to young and old adults ($p < 0.05$). Among middle-aged adults, deferral due to flu-like symptoms was also significantly more during the COVID period ($p < 0.05$).

CONCLUSION:

COVID-19 has affected the donor pool and did change the pattern of donor deferral. Studying the donor deferral patterns helped in identifying targeted donor populations and planning donor recruitment strategies in any future pandemic crises. Blood donation at our center during the pandemic year was mainly of blood donors aged 24 to 40 years due to non-availability of student donors mainly for reasons-the lockdown, quarantine including restriction in holding outdoor blood donation drives. In addition led us to recruit regular blood donors from our donor registry and motivate healthcare care personnel of our tertiary care hospital. It highlights the medical causes as the most predominant one for deferrals during both pre-COVID and COVID periods. The reduction of blood donation was mostly due to a decrease in the number of volunteers. The national policies to manage the outbreak like job closure, the social or physical restriction and social distance advice were possibly the main reasons for the shortage.

REFERENCES:

- Podder D, Paul B, Dasgupta A, Bandyopadhyay L, Pal A, Roy S (2019) Community perception and risk reduction practices toward malaria and dengue: a mixed-method study in slums of Chetla, Kolkata Indian J Public Health 63(3):178–185.
- Zucoloto ML, González T, Menezes NP, McFarland W, Custer B, Martinez EZ. Fear of blood, injections, and fainting as barriers to blood donation in Brazil. Vox Sang. 2019;114:38–46.
- Stanworth SJ, New HV, Apolseth TO, Brunskill S, Cardigan R, Doree C, et al. Effects of the COVID-19 pandemic on supply and use of blood for transfusion. Lancet Haematol. 2020;7:e756–64.

- Kwon SY, Kim EJ, Jung YS, et al. Post-donation COVID-19 identification in blood donors. Vox Sang 2020;(April (2)). <https://doi.org/10.1111/vox.12925>.
- Wang Y, Han W, Pan L, Wang C, Liu Y, Hu W et al (2020) Impact of COVID-19 on blood centres in Zhejiang province China. Vox Sang 115(6):502–506.
- Dhiman Y, Coshic P, Pandey HC, Khatriwada B, Singh J, Mehta V et al (2021) Deterrents in recruitment of COVID-19 convalescent plasma donors: Experience from a hospital-based blood centre in India. Transfus Med 31(3):149–154.