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New Practices and Procedures for Blood Collection During Covid Pandemic in The Tertiary Care Centre of North India- A Herculean Task

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Abstract:

Introduction: COVID-19 is declared a global pandemic by World Health Organization (WHO) on March 11, 2020. [1] Blood needs to be continually replenished as it has limited shelf life. Healthy individuals should come forward for voluntary blood donation to ensure adequate supply of blood.

Material and Method: We performed an observational study on pattern of blood donation during COVID-19 pandemic and compared it with non pandemic period. Blood Collection was done as per time to time guidelines issued by National Blood Transfusion Council (NBTC).

Results: Data of In house and outdoor collection of 2019 (non COVID-19 period) and 2020 (COVID-19 period) are compared. From March onwards, there is shift from outdoor to in house collection in year 2020. In year 2020, indoor collection is 63.8% as compared to year 2019 (22.6%).Total collection is also decreased in year 2020(15959) as compared to year 2019 (19772).

Discussion: In COVID-19 pandemic, blood centers have to devise new strategies to cope up the demand of blood during this unforeseen situation.

Introduction

COVID-19 outbreak is reported a public health emergency by World Health Organization (WHO) on January 30, 2020 and is declared a global pandemic on March 11, 2020.[1] To contain the spread of COVID-19 a nationwide lockdown was imposed by Government of India.[2] This unforeseen situation posed a challenge in terms of blood collection to suffice demand of blood and blood components and ensure the safety of donors as well as patients.[3,4]. During this pandemic, Voluntary Blood Donation should continue in order to avoid shortage of blood supply in hospitals. It is the collective responsibility of the Society and the Blood Transfusion services to jointly face this challenge in order to ensure adequate availability of blood stocks, to timely supply blood/blood components to patients during this critical phase. Blood needs to be continually replenished as it has limited shelf life.

Material and Method

Study design and setting: We performed a cross-sectional, observational study on the pattern of blood collection and strategies to ensure adequate availability of blood to the patients. As per the National Blood Transfusion Council (NBTC) guidelines, our blood center continues to make necessary changes in the policy on donor recruitment, selection and inventory management as the pandemic evolves. [5]

National Blood Transfusion Council, Ministry of Health and Family Welfare, Government of India has issued 1st guidelines on 25th March 2020 followed by a revised guidelines on 25th June 2020.[5]

- Potential donors, both first time or repeat (after a gap of 90 days from previous donation) above 18 years of age were requested to donate blood at our blood center
- Communication with blood donors was established by camp organizers through convenient social media stating that individuals (including their close contacts and family members) who had history of international travel must refrain from blood donation for at least 28 days if asymptomatic and 28 days after complete recovery if they had symptoms

of COVID-19.

- The recruitment of potential blood donors among the healthcare personnel of our hospital was done, and reminder calls were given to eligible donors about the completion of their donation interval period.
- The donor history questionnaire form was modified to elicit additional history on COVID-19 to promote the selection of the safe and healthy donors.

Results

Challenges of Voluntary Blood Donation during Pandemic

Recruitment of safe and healthy blood donors amidst the COVID-19 pandemic remains the primary challenge of blood centers globally.

- Fear factor: In India, the motivation and willingness to donate blood among the general population is very low, in a pandemic situation where there was considerable uncertainty regarding the safety of blood donation. There was fear of going to Hospital based Blood Center; Parents of donors were more worried.
- Closure of Establishments: Curfew was imposed in Punjab from 25th of March 2020 to 30th of May 2020. People were mainly confined to their houses . Lockdown and Curfew became a hindrance factor for regular voluntary blood donors, even if they wished to donate
- Lack of Transportation: During the lockdown period travel arrangements were made for the donors to reach the blood centre safely;
- Social Distancing: Social Gatherings were restricted. Voluntary Blood Donation Camps were less during first wave because of curfew.
- Media hype

Blood Donation

- Medical Officer, Counselor and Publicity Assistant supervised the venue for adequate facilities for conduction of camp, discussed about maintenance of social distancing with the organizer.
- The Blood Collection Team was instructed to arrive at the venue of the camp well before the time given to donors.
- Strict restrictions were enforced to limit the number of people attending the blood donation premise at same time- SOCIAL DISTANCING. Less than 5 Blood donors were allowed to enter the donation premise at a time.
- Blood Collection Team comprised of minimum number of staff.
- All donors coming for donation were asked to compulsorily wear mask covering mouth and nose.
- Donors were directed to wash hands or asked to sanitize his/ her hands with sanitizer.
- Temperature of donors was checked. If below 98oF, they were given the donor form with the COVID checklist and asked to fill up.
- All the staff members used to wear, including gloves, goggles/ face shield, apron and N95 mask/ surgical masks.
- After each donation, the donor couch was wiped with 1% hypochlorite solution.
- Special care was taken to avoid blood spills and needle injury.

Table 1: Comparison of In house and outdoor collection of year 2019 (non COVID-19 period) and 2020 (COVID-19 period)

	In house Collection		Outdoor Collection		Total Collection	
Months	**2019**	**2020**	**2019**	**2020**	**2019**	**2020**
Jan	354	338	931	1005	1285	1343
Feb	318	543	1582	684	1900	1227
March	199	719	1179	724	1378	1443
April	237	1172	1360	--	1597	1172
May	646	1384	1397	59	2043	1443
June	367	829	1039	473	1406	1302
July	523	1106	1048	255	1571	1361
Aug	570	861	1104	260	1674	1121
Sep	232	925	1497	153	1729	1078
Oct	493	588	839	807	1332	1395
Nov	347	928	2027	465	2374	1393
Dec	190	795	1293	886	1483	1681
Total	**4476 (22.6%)**	**10188 (63.8%)**	**15296 (77.4%)**	**5771 (36.2%)**	**19772**	**15959**

Covid -19 pandemic was declared on 11.3.2020 and curfew was imposed on 25.3.2020 in Punjab. Data of In house and outdoor collection of 2019 and 2020 are compared in Table. From March onwards, there is shift from outdoor to in house collection in year 2020. In year 2020, indoor collection is 63.8% as compared to year 2019 (22.6%)Total collection is also decreased in year 2020(15959) as compared to year 2019 (19772).

Post Donation

- Disposable material was used to provide refreshment to the donor.
- If donor developed a reaction, utmost care was taken on the part of the hospital staff for personal protection.
- Donors were instructed to report back to blood center telephonically, in case of developing fever or related symptoms within 14 days of donation.
- Seven days after a camp, the counselor (through telephone) contacted each donor to assess the health status.

Discussion

With the outbreak of COVID-19, blood centers faced a huge challenge in balancing blood demand and supply and devising a preparedness plan to withstand the unforeseen situation. Blood centers continue to try very hard to provide uninterrupted blood supply to meet the ongoing demand of blood/blood components. Moreover, the recommendations by the WHO, NBTC, American Association of Blood Banks (AABB) and Centers for Disease Control and Prevention (CDC), made it easier to maintain the safe transfusion supply during the the pandemic.[5-8]

At our center, 9.16% reduction in whole blood collection was observed in pandemic period, year 2020 and more so in outdoor collection, with Wang et al. having reported a 67% drop in the whole blood donation in the Zhejiang Province of China, while the Canadian blood services have documented a drop of 30% in the donor attendance rate.[9-12] Factors, such as the lockdown, quarantine and restriction in holding outdoor blood donation camps further reduced the donor pool and led us to recruit regular blood donors from our donor registry and motivate healthcare care personnel of our hospital.

Thus, in-house and repeat donations during pandemic year 2020 were found to be higher than those in non-pandemic year 2019. Contrary to our findings, few similar studies have reported a higher percentage of first time donors [9] and a significant drop in the in-house site donation during the pandemic year.[13] This is probably due to the difference in the epidemiological and geographical factors and donor recruitment strategy of each blood centre.

Donor education and awareness played an crucial role in donor recruitment during the pandemic period.[14] Effective communication with blood donors on donor eligibility and the deferral period, especially regarding COVID-19 through social media, such as WhatsApp and Facebook, proved beneficial in lessening the deferral rate during the lockdown phase of the pandemic year

This coping strategy was used as a powerful tool for creating public awareness, the effectiveness of which was well appreciated by the blood centers across the globe during the pandemic crisis.[15-18] In pandemic deferral rate was reduced due to the inclusion of repeat blood donors, rather than first-time donors, who are well informed on the blood donation eligibility criteria and, thus, opted for self-deferral.

To confront the challenges posed by COVID-19, the strategy devised at our center consisted of incorporating the COVID-19 recommendation guidelines by various blood authorities and reviewing available literature helped us to overcome the challenges with confidence. [3,4,5,7,14] However, these strategies are subjected to revision, as and when the pandemic evolves.

Conclusion

This study highlights the catastrophic effects of the COVID-19 pandemic on blood transfusion services at our blood center especially donor recruitment, inventory and resource management. The maintenance of the donor registry, including the rare blood group donors and the platelet apheresis donors, is very crucial for a blood center to recruit donors at the time of disaster. This experience alerts us to have a preparedness plan to tackle such an unforeseen problem, if faced in the future.

Conflicts of Interest

None of the authors have any conflict of interest.

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