[Downloaded free from http://www.gjtmonline.com on Tuesday, July 6, 2021, IP: 47.74.33.231]

Short Article

Impact of COVID-19 Outbreak in Blood Transfusion Services in India: Experience from Tertiary Care Blood Centres in Kerala: A Short Review

Vinu Rajendran, Sanooja Pinki[1]

Department of Immunohematology and Blood Transfusion, Kasturba Medical College, Manipal, Manipal Academy of Higher Education, Karnataka, [1]Department of Transfusion Medicine, Kerala Institute of Medical Sciences, Thiruvananthapuram, Kerala, India

ABSTRACT

Blood Transfusion Service (BTS) in India faced numerous challenges during the COVID-19 outbreak and the following imposed country lockdown. We aim to identify the challenges faced by selected blood centers and explore the mitigation strategies implemented during the COVID 19 pandemic and subsequent lockdown. Diminished donor inflow, lack of uniform donor selection criteria during the initial period, fear of COVID-19 spread to blood donors and staff personnel, shortage of available blood units, staff personnel transportation, handling of medical records, and concerns about transfusion-transmitted COVID-19 were the major challenges faced in our blood centers. Personal invitation of donors, public announcements, and in-house donation drives were implemented to improve donor inflow. Institute level donor selection protocol was developed and followed before the national guidelines were established. Restricted donor entry, stringent donor selection, and adequate sanitization strategies were the key steps adopted to ensure the safety of donors and staffs. In the interim, there was a reduction in blood unit requirement due to reduced patient inflow. Staff duty pattern was allocated on a rotation basis. The novel standard operating procedure was developed and implemented for handling COVID-19 positive or suspected blood samples. BTS should always be vigilant to adopt new practices even before guidelines are set by regulatory authorities and are liable to follow the guidelines. Restrictive blood transfusion strategies need to be emphasized in the country.

KEYWORDS: *Blood center, blood transfusion service, COVID-19, Kerala, lockdown*

Submitted: 24-Apr-2020.
Revised: 17-Jul-2020.
Accepted: 19-Sep-2020.
Published: 13-Nov-2020.

INTRODUCTION

COVID-19 is a devastating, emergent, and highly contagious disease caused by severe acute respiratory syndrome coronavirus 2 from the family *Coronaviridae*.[1] It was first identified in December 2019 in Wuhan, China, and later spread globally.[2] On March 11, 2020, the World Health Organization characterized COVID-19 as a pandemic.[3] Globally, there are now (April 23, 2020, 17:30 GMT + 5:30) 2,549,632 confirmed cases, 175,825 confirmed deaths and 213 countries, areas or territories affected with this disease (April 23, 2020, 17:30 GMT + 5:30).[4] In India, as of now (April 24, 2020, 08:00 GMT + 5:30) there are 23,076 confirmed cases and 718 confirmed deaths.[5] A national lockdown was imposed in the country on March 24, 2020, by the Government of India to contain virus spread.[6] Following this, most of the services have come to a standstill except essential services such as the health sector.

Blood Transfusion Services (BTS) being an essential medical service, shall cater patient needs and should remain uninterrupted amidst of outbreak. However, during the disease outbreak and country lockdown, BTS faced numerous challenges to maintain the sustainability in service provision.

Aims and objectives

We intend to identify the challenges faced by two blood centers in Kerala during COVID-19 outbreak and the following imposed national lockdown. Experiences of authors who are medical officers in respective blood centers were examined and noted.

Address for correspondence:
Dr. Sanooja Pinki, E-mail: sanoojapinki001@gmail.com

Access this article online

Quick Response Code:

Website: www.gjtmonline.com

DOI: 10.4103/GJTM.GJTM_36_20

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow_reprints@wolterskluwer.com

How to cite this article: Rajendran V, Pinki S. Impact of COVID-19 outbreak in blood transfusion services in India: Experience from tertiary care blood centres in Kerala: A short review. Glob J Transfus Med 2020;5:215-7.

[Downloaded free from http://www.gjtmonline.com on Tuesday, July 6, 2021, IP: 47.74.33.231]

Source of data

An exploration of recent studies and newspaper articles were conducted using search terms "COVID-19", "blood transfusion service", "Kerala" and "national lockdown" on web based search engines Google, Google Scholar and Pubmed to identify materials about the topic or homologous to it.

Challenges Faced and Mitigation Strategies during COVID-19 Outbreak

Reduced donor inflow

Currently, there is a significant gradual reduction in donor inflow to the blood centers. Concerns of being infected through hospital contact, lack of public transport facilities, travel restrictions imposed by the police department, and nonavailability of medical student donors in the hospital setting were the main attributing factors. In addition, there were restrictions for conducting outdoor voluntary blood donation camps during the period.

The following steps were adopted to extenuate reduced donor inflow. The registered donors were personally invited for blood donation over the phone. We promoted in-house donation drives. Any announcements on blood requirement were made within the hospital and through social media platforms. Further, we requested the patient bystanders to donate blood. Frequent communication regarding blood requirement was maintained with blood donation organizers. To resolve the difficulties associated with travel restrictions, a donor appointment letter from the blood center was issued to donors through E-mail and WhatsApp messenger. Furthermore, a donation certificate was issued after donor registration. State regulatory authorities adopted measures which include the promotion of mobile blood donation vehicle and public request to citizens to come forward for blood donation through mass media.[7]

Protocol for donor selection

Initially, there were no uniform guidelines or protocols for donor selection in view of COVID-19 outbreak. On understanding the necessity of the situation, an institutional level protocol was developed, approved, and followed. On March 25, 2020, the National Blood Transfusion Council (NBTC) put forward the National guidelines for blood donor selection in light of COVID-19 pandemic. Our blood centers are currently following the NBTC guidelines on blood donor selection.[8]

Precautions adopted for the safety of donor and blood center staff

To cope with the safety concerns in view of COVID-19, we adopted certain practices. To avoid deferral following the registration, the suitability of donors coming through appointments were assessed over the phone. Donors were allowed to enter the hospital premise only after body temperature screening. Maximum three donors were permitted at a time in the waiting area maintaining social distancing. Bystanders of the patients and donors were not allowed to enter the waiting room. Walk-in donors were initially screened for any COVID-19 related symptoms, travel, or contact history before entering the waiting room. Donors were required to sanitize their hands and wear masks before entering the blood center. Chairs were separated to maintain adequate distance and donors were instructed to sit on alternate chairs. Donor counseling was done with ample distance maintained between the donor and counselor. Door handles, writing board, pen, chairs, devices, instruments for medical examination, donor couch, and hand rest were cleansed after each donation. Squeeze balls were either avoided or was given with separate plastic cases so that it can be changed after each donation. Micropore plaster used for fixing the needle and tubings of blood bag were discarded after each procedure. Donors were instructed to read predonation and postdonation instruction pamphlets without contact. Disposable paper plates were used for providing refreshments. Donors were encouraged to receive a donation certificate through E-mail. All staff personnel, especially those in the phlebotomy room were strictly instructed to use masks, gloves, and hand sanitization after attending each donor and the same was followed without fail. Counselor was also encouraged to wear gloves and masks while attending the donors. Figure 1 represents the images of various precautionary measures adopted for blood donors at blood center.

Blood unit shortage

There was a significant shortage in blood units as a reflection of reduced donor inflow. Our blood centers faced a shortage of platelet concentrate and fresh packed red blood cells units for neonates and cardiac surgery. There was no option of a bulk transfer of blood units from neighboring blood centers as almost all of them were facing the same problem. Blood stock maintenance for anticipated COVID-19 disaster management as a part of preparatory phase was another challenge faced.

Blood unit requirement

In the interim, there was a gradual reduction in blood requirements. Most of the noncritical patients were discharged considering the criticality of the situation. All elective surgical cases of the hospitals were cancelled and only emergency cases were taken up followed by the instruction from hospital administration. In our blood centers, there was a considerable decrement in trauma cases, including road traffic accidents following the imposed travel restriction by the government.

Logistics

There was a delay in receiving test kits, reagents, and blood bags from the distributor company to the store of the institute, but was adjusted by the surplus stock in the central store. Initially, there was a hospital-wide shortage of masks and sanitizers which was later resolved after the state government intervened with the production and distribution of the same. Moving further, there can be an excessive requirement of logistics, including masks, gloves, plastic cover, micropore plaster, and disinfectant which need to be anticipated and resolved.

Staff personnel

Transportation of technical staff was greatly affected as most of them relied upon public transport services. Staff duty

[Downloaded free from http://www.gjtmonline.com on Tuesday, July 6, 2021, IP: 47.74.33.231]



Figure 1: Images of the precautionary measures adopted for blood donors on various stages (Photos reproduced with permission)

pattern was modified as per the policy laid down by the hospital human resources department. Staffs were divided into two pools and a weekly rotation of each pool was practiced. The reserve pool was advised to follow a strict homestay. Housekeeping department staff were exhausted due to heavy workload.

Medical records

Handling of files, documents, forms, and the requests were another difficulty faced. Staff personnel were instructed to practice minimum handling and was briefed about the need of following hand sanitization after handling documents.

Laboratory section

To ensure safe blood sample handling and processing in the context of receival of COVID-19 positive/suspected samples, separate Standard Operating Procedure was developed and implemented.

Risk of transfusion transmitted COVID-19

There were concerns about the risk of COVID-19 transmission through transfusion. Another consternation was about the risk of staff acquiring COVID-19 infection from donors. Currently, there is no national policy to screen the collected blood for COVID-19. Moreover, none of the regulatory authorities demands the quarantine of collected blood. However, during counseling, donors were clearly instructed about the need of notifying the blood centre upon development of any symptoms or known exposure to confirmed cases. Although it was planned to release the blood components after contacting the blood donors 2 weeks postdonation, we could only partially proceed due to the shortage of blood units.

Conclusion

Being an essential service, BTS should cater with safety and adequacy without any interruption. The blood center team should always be prepared and vigilant to adapt and implement new practices even before guidelines are set by regulatory authorities and are bound to follow the guidelines. Blood centers shall always be updated with the changes advocated by the national and state regulatory authorities. Considering the critical shortage of blood units in the country, restrictive strategies of blood transfusion need to be emphasized.

Consent

The donor consent for publication and dissemination of data as well as photographs has been obtained.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Coronavirus disease 2019 (COVID-19)-Symptoms and causes. Mayo Clinic. Available from: https://www.mayoclinic.org/diseases-conditions/coronavirus/symptoms-causes/syc-20479963. [Last accessed on 2020 Apr 24].
2. Hui D, Azhar EI, Madani T, Ntoumi F, Kock R, Dar O, *et al*. The continuing 2019-nCoV epidemic threat of novel coronaviruses to global health – The latest 2019 novel coronavirus outbreak in Wuhan, China. Int J Infect Dis 2020;91:264-6. Available from: https://www.ijidonline.com/article/S1201-9712(20)30011-4/fulltext.[Last accessed on 2020 Apr 24].
3. WHO Director-General's Opening Remarks at the Media Briefing on COVID-19-11 March 2020. WHO.it; 2020. Available from: https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19-11-march-2020. [Last acessed on 2020 Apr 24].
4. Corona Virus Disease (COVD-9) Pandemic 2019. WHO.it; 2020. Available from: https://www.who.int/emergencies/diseases/novel-coronavirus-2019.[Last accessed on 2020 Apr 20].
5. IndiaFightsCorona COVID-19. MyGov.in; 2020. Available from: https://www.mygov.in/covid-19/. [Last accessed on 2020 Apr 20].
6. Gettleman J, Schultz K. Modi Orders 3-Week Total Lockdown for All 1.3 Billion Indians. The New York Times; 2020. Available from: https://www.nytimes.com/2020/03/24/world/asia/india-coronavirus-lockdown.html. [Last accessed on 2020 Apr 24].
7. Official Website of Chief Minister of Kerala Pinarayi Vijayan. Kerala COVID-19 Tracker; 2020. Available from: https://www.keralacm.gov.in/category/media-updates/press-release/page/2/. [Last accessed on 2020 Apr 20].
8. National Blood Transfusion Council, Ministry of Health and Family Welfare, Government of India. National Blood Transfusion Council, Ministry of Health and Family Welfare, Government of India; 2020. Available fro m: http://naco.gov.in/sites/default/files/NBTC%20GUIDANCE%20FOR%20COVID-19.pdf. [Last accessed on 2020 Apr 20].