

Mobile Blood Collection During COVID-19

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ABSTRACT

COVID-19 is a positive-sense single-stranded RNA virus that infects human and individual animals. That enters its host cell by binding to the angiotensin covering enzyme 2 receptor. Covid -19 is highly contagious with the possibility of causing severe respiratory disease. Purpose of the study was to discuss the challenge's requirement and importance of blood collection, during Corona outbreak. A well-equipped mobile blood bank van with all Staff of blood bank conducted a blood donation camp in and around Vijayapur district by maintaining the social distancing. A pre-camp awareness program was conducted to all the donors and made them mentally fit by giving them awareness, and removing fear, anxiety, about Coronavirus. Total three camps were conducted and collected ninety whole blood bags. Most of the blood bags were issued to pregnant women during pandemic outbreak. Blood collection is necessary during COVID -19 emergency to the patients of pregnant women, accident cases, Surgery, Thalassemia, Hemophilia and severely anaemic patients.

Keywords: Blood and Blood Components; Coronavirus; Mobile van.

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INTRODUCTION

Blood is an essential component in this situation, so many patients suffering from lack of Blood & blood components in all over India. Blood & Blood components are every essential to anaemic patients, Accident cases, Surgery, Thalassemia, Hemophilia & pregnant woman, delivery, trauma and cancers[1]. The WHO recommends that, for any country to meet the minimum demand for Blood, the collection should be at least 1% of the population. Blood transfusion and plasma therapy are often cited as a major medical advancement of the First World War and Corona war. A blood transfusion service is an essential element of a healthcare system, and individuals who donate their blood provides a unique contribution to saving lives and improving patient health[2]. With the centre, declaring blood services as essential services, Karnataka State Blood Safety Department was started mobile blood collection unit with experienced Staff including all essential equipment in Vijayapur district civil hospital Blood Bank. They are conducting regular blood donation camps by sending mobile blood collection van to various localities across Vijayapur District. State blood safety department inspect all infection control and social distancing measures such as two couch instead of the van earlier practice of two to draw Blood. There will be a three-meter gap in between the two couches, and at one time, there will be no more than two donors allowed in the blood collection van. The van is being disinfected with disinfectants after receiving Blood from donor then after we are taking new donor.

Aims & Objectives

To study the mobile blood collection van conducted camps, collected units & Blood & blood components supply in this outbreak Pandemic COVID-19

MATERIALS AND METHODS

The camp was conducted in three villages near Vijayapur district Karnataka state India. Camps were started from 06 March 2020 to 15 May 2020. The total period of 10 days. We followed the State AIDS Control Society and State Blood Transfusion Council guidelines and conducted the camps accordingly. During COVID -19 pandemic we restricted age limit to 18- 48 years. Well-equipped mobile blood van was used for the blood camps; the van was architected with registration counter, 2 donor couches, 2 no. donor bed, Blood bag sealing counter, Blood bag refrigerators. Equipment storage cabinet. Amenities: Engine driven air conditioner, Split unit air conditioner generator inverter for back power, O2 Cylinder with accessories Public address system, , Branding, Coach fans, LED roof lights, Vinyl floor, Curtains, Storage below the beds (Figure1). Donors were screened for physical checkups like blood pressure, thermal scanner for body temperature respiratory rate, and haemoglobin percentage. During blood donation camp in Covid-19 lockdown period, donors list had prepared & contacted them before the camp and thought them awareness about the COVID -19 pandemic. We followed the government rules for high risk and high touch areas of the spread of COVID -19 by social distancing, regular cleaning of the hands with sanitizer, gloves, masks, PPE etc.

Required Staff

Medical officer:

The Doctor's responsibilities should be clearly defined in institutional regulations, rules or bylaws, and these should be made known to the entire Staff. Doctors may delegate certain responsibilities to designees, but remain responsible for all activities like direction and operation of the blood bank, compliance with all applicable regulations and requirements, establishment and implementation of written standard operating procedures[3],

Counsellor:

Counsellor plays responsible role in success of the blood donation camp during Covid -19 pandemic to convert the healthy mind sets in volunteer donor. This includes preparation and motivation of the donor predonation during and post donation of the camp. Pre donation requires confidential interview for health assessment. Motivate the donor at high risk to test for HIV. Create awareness among donors on HIV & TTI's Post donation counselling include results of blood investigation to be notified to the donor in confidential manner. The counselling of blood donors is an essential means of promoting healthy lifestyles and makes an essential contribution to individual and community health.

Lab Technologist:

Blood bank technicians also called phlebotomy technicians, work in a lab under the guidance of a medical or clinical laboratory technologist or manager. Technicians collect, label and prepare Blood, plasma and other components for transfusions. In addition, blood bank technicians consistently interact with the public, conducting interviews, and testing samples to screen potential donors. Blood bank technicians properly store Blood draws and maintain documentation and records. Technicians work with patients, making them comfortable during the procedure and monitoring vital signs.

Staff nurse:

Nurses who work in blood bank centers play a crucial role in selection and encouraging of blood donor. Nurse provides advice relating to the more complicated and travel issues this advice convert healthy environment in donors. There is a need to identify and analyze donor motivations and effective nursing interventions. This will help the donor to pleasant experience after donation and gives positive impact on commitment in new donors.

Class D:

Class D role is also crucial in COVID-19, they have to sanitize the floor and high risk area pre and post donation of every blood donor with disinfectant.

RESULTS

During COVID -19 lockdown period total ninety blood bags were collected (Table-1) and whole Blood was screened for blood grouping, markers for TTI, including HIV, hepatitis B (HBV), hepatitis C (HCV) and syphilis. Total 49 bags were issued out of which A positive -09 B-positive

-17 O positive -12, AB positive -10 and AB negative- 01 bags issued.

Table 1. Showing the village name and no of blood units collected during COVID-19

Date	Village Name	No. of Units collected
06 May 2020	Benal RC	30 Units
07 May 2020	Vadavadagi	30 Units
08 May 2020	Benal NH	30 Units

Table 3. Showing Issued blood bags to patients during Covid-19

Sl No	Blood Bags Issued to	Total Issued
01	Pregnant Woman's	34
02	Surgery	08
03	Thalassemia	03
04	Haemophilia	02
05	Anemic	2

Table 2. Showing Issued blood bags during Covid-19

Date	Issued Blood							
	A +ve	A -ve	B +ve	B-ve	O +ve	O-ve	AB +ve	AB-ve
6th May 2020	0	0	0	0	0	0	01	0
7th May 2020	01	0	0	0	0	0	01	0
8th May 2020	0	0	0	0	04	0	01	0
9th May 2020	01	0	02	0	0	0	0	0
10th May 2020	01	0	03	0	01	0	01	0
11th May 2020	0	0	01	0	02	0	0	0
12th May 2020	02	0	0	0	01	0	0	0
13 May 2020	01	0	07	0	01	0	04	0
14th May 2020	0	0	03	0	01	0	02	01
15th May 2020	03	0	01	0	02	0	0	0



Figure 1. showing mobile donation camps organized around Vijayapur district during COVID- 19 outbreak

DISCUSSION

Blood is an essential component in emergencies and considered as drug to save the lives. But a collection of this emergent medicine is difficult to conduct the camps in Covid-19 pandemic situation. The District Surgeon, District AIDS control program officer, Blood bank Medical Office staff made untiring effort to convert the donor's mindset into a voluntary donation. Blood components are very essential to anaemic patients, Accident cases, Surgery, Thalassemia, Hemophilia & pregnant woman, delivery, trauma and cancers. Novel nature of SARS-CoV-2 restricted the regular activities of the blood bank voluntary donors hesitate to donate Blood during an emergency. Since the outbreak of Corona disease (COVID-19), country has to monitor this pandemic in public health, to prepare blood centers potential for further spread of the disease. Blood bank should encourage healthy eligible donors to donate to maintain an adequate blood supply for the patient[.]. If the Corona outbreak continues to spread additional challenges may arise and this potentially decreases the number of eligible donor. The healthy individuals are not at risk of contracting COVID-19 through the blood transfusion or via a blood donation process since respiratory viruses are generally not known to be transmitted by donation or transfusion of blood[.]. Till date there are no cases of transfusion-transmitted COVID-19. During routine blood donor screening measures we counselled additional travel history which was included with these points: 1. if any donor presents history of migration from one place to other place. 2. if patient had a new cough, shortness of breath, fever, chills, muscle pain, a new loss of sense of taste or smell, headache, sore throat, extreme fatigue, or other unexplained symptoms in the past 14 days. 3. If donor in close contact with someone diagnosed with or suspected of having COVID-19 in the past 14 days. 4. If any donor diagnosed with or suspected of having COVID-19, and they have had any symptoms in the past 28 days. 5. If any donor healthcare worker directly caring for hospitalized COVID-19 patients in the past 28 days.

Timely availability of this emergent medicine in emergent health sectors is important for the survival of the patient. Every year about 300,000 infants born with thalassemia and sickle cell anemia which requires regular blood transfusion[.]. In some countries, plasma therapy from people who have previously been infected with SARS-CoV-2 Coronavirus and who have recovered from Covid-19 disease is currently used as a therapeutic therapy for Covid-19 patients[.]. Virus-specific neutralizing antibody, which are present in the plasma could accelerate virus clearance and prevent entry into target cells, serves as the main mechanism for the

inactivation and clearance of the viruses by the host. Human coronaviruses can maintain their viability outside the host for as long as 9 days, which greatly increases transmission risk through fomites[.]. So, in this pandemic outbreak blood camps are essential to play a major role in the survival of patient death in emergency.

CONCLUSION

The pandemic outbreak of severe acute respiratory syndrome coronavirus 2 interrupting blood donation exercises. Blood and blood components are at high demand in public emergencies as a life-saving measure voluntary blood donation from healthy individuals is needed to save the life of humankind.

REFERENCES

1. WHO. 2009b. GDBS Summary Report 2009: WHO Global Database on Blood Safety (GDBS) and Blood Safety Indicators. Geneva: World Health Organization.
2. WHO. 2016. Global Status Report on Blood Safety and Availability 2016. Geneva: World Health Organization 2017.
3. WHO. 2010a. Towards 100% voluntary blood donation: A global framework for action. Geneva: World Health Organization.
4. Debas HT, et al. Surgery. In: Jameson DT, et al., editors. Disease control priorities in developing countries. 2nd edition. Washington DC: World Bank/Oxford University Press; 2006.
5. Weiser TG, et al. An estimation of the global volume of Surgery: a modelling strategy based on available data. *Lancet*. 2008; 372:139–144.
6. Maternal mortality in 2005. Estimates developed by WHO, UNICEF, UNFPA and The World Bank. Geneva: World Health Organization; 2007.
7. Thalassemia and other haemoglobinopathies. Report by the Secretariat; Executive Board EB118/5, 118th Session; 11 May 2006; Geneva: World Health Organization; 2006.
8. Rajendran K, Krishnasamy N, Rangarajan J, Rathinam J, Natarajan M, Ramachandran A. Convalescent plasma transfusion for the treatment of COVID-19: Systematic review [published online ahead of print, 2020 May 1]. *J Med Virol*. 2020;10.1002/jmv.25961. doi:10.1002/jmv.25961.
9. Bagoji I B, & Bharatha A. COVID -19 and Robotics-creativities spark in the adverse. *South East Asia Journal of Medical Sciences*. 2020;4(1):1.