Blood transfusion is an essential part of modern day treatment procedure and most of the time being a life saving one. Maintaining a constant reserve of safe and sufficient blood all the time is a big challenge for most of the Transfusion centers. Many workshops, campaigns and seminars are organized by both Govt. and Non Govt. Organizations (NGO) from time to time to create awareness about voluntary blood donation but the outcome remains same. Still many of us have some beliefs contrary to the facts. ‘’Is it ok if I pay money for blood as I do not have donors for replacement”, ‘’no no I cannot donate blood because I am a daily laborer”, “why to donate voluntarily, what benefit I will get” “The donation process is painful as the needle is too big” these are some common perceptions that most of us have. This is also worth mentioning that people do come and donate blood for their relatives whenever they need, but for voluntary donation, there is a tendency of making a safe distance. But whatever reserve stock we have, is it sufficient? Actually what is requirement?

Requirement of blood transfusion:

According to World Health Organization (WHO), for any country, the total requirement of blood units per year is 1-3% of its total population. In a country like India, the yearly requirement is 120 million units, but the actual donation is only 90 million. That means we are still having deficit of 25%.

In India, blood transfusion is required for about 234 million major operations, 63 million post traumatic surgeries, 31 million cancer related surgeries and 10 million pregnancy related surgeries every year. Apart from these we have cases of sickle cell Anemia, Thelasemia, Hemophilia etc where the only life saving therapy is repeated blood transfusion. According to WHO data, in India 3-4% of total population suffers from Thelasemic disease. In certain Indian communities like Assamese, Bengali, Gujarati, Maharastrian, Marwari and Punjabi, it is even on higher side. Without blood transfusion, 85% of Thelasemic children do not survive more than 5 years of age. They require initially on monthly basis and then every 2-4 weeks. On top of that we have to be ready with sufficient supply of blood for situations of mass casualties like earthquake, serial bomb blasts, flood, landslides, train accidents etc where the requirement mounts high within short span of time. According to many studies, Road traffic accident is the second most important cause of death for 5-29 years old. In India one major road accident occurs every minute, and 1214 every day resulting in 377 deaths per day.

Who can donate blood?

Any healthy person between 18-65 years of age can donate blood if he/she has ≥12.5 gm/dl of hemoglobin and body weight ≥45 kg. Those between 45-60 kg body weights can donate

350 ml and people having more than 60 kg body can donate 450 ml of blood without any problem.

Responsibility of a donor:

Though blood transfusion is a life saving procedure, it has its many unwanted complications like transmission of life threatening diseases like HIV, Hepatitis B and Hepatitis C. Donated blood is routinely tested for these diseases in every blood bank and when found completely safe then only used for transfusion to patients. But the currently available ELISA methods of blood testing, fails to detect evidences of these infection in the initial period of infection which is known as *Window Period* (period from the infection to appearance of first antibody- usually 12 weeks). So predonation counseling of donors and self deferral are the most important tools for getting safe blood especially in the window period. Honest answering to the questions asked during counseling is very important. If the donor has high risk behaviors like having multiple sex partners, unprotected sex, visiting commercial sex worker, sharing needles during drug abuse, making tattoo from street vendors etc in the recent past, he/she should not donate blood. This self deferral is possible only in case of voluntary non remunerated donors and not in professional blood sellers. Therefore to maintain maximum safety in blood transfusion services, more importance has been given on voluntary donations and not on replacement. Donation by profession blood seller is considered as a criminal offence.

Benefits of blood donations:

We all think that a blood donation benefits the patient only. But contrary to our common belief, it has much beneficial side for the donor as well. The common benefits are

- According to many established studies, regular blood donation reduces rate of Heart Attack and Stroke by 83%.
- Regular blood donation reduces the overloading of iron in our body as result of which iron induced free radical injury decreases. This in turn reduces chances of cancer arising from liver, lungs, intestines and neck.
- Regular blood donation reduces obesity. A donation of 450 ml blood burns approximately 650 calorie.
- A mini health check up at free of cost. Suitable donors are selected after a mini health check up by medical officer and donated blood samples are tested for HIV, Hepatitis B, Hepatitis C, Malaria and Syphilis which is completely free.
- Finally the satisfaction of doing something great.

Recent trend:

National Blood Transfusion Council, NBTC has recently come up with many innovative initiatives to maximize the safety, minimize the wastes of blood and to make it easily available at hand. Information of all Blood Banks in India along with their available stock is made available in the website of National Health Portal (NHP). They have also designed one Mobile App available in android phone. It shows the nearby blood banks with their details. The only thing that every Blood Bank has to do is to update their stock on a daily basis.

India has 2760 licensed blood banks, 981 Govt and 1564 in private. But most of them do not have the facility for separating the blood into various components. To make proper utilization of this limited resource, more emphasis is given on 100% component separation and utilization. The concept of using whole blood is almost out dated now days.

Recent advance in blood transfusion service is the use of Nucleic Acid Testing Method (NAT) which is a highly sensitive and advanced molecular technique for screening of donated blood to reduce the risk of transfusion transmitted infections (TTI). It reduces the window period of HBV to 10.34 days, HCV to 1.34 days and HIV to 2.93 days. It is very costly and needs high expertise. But few centers in India have already started using this technology providing more safety in transfusion services.

The trend of achieving blood bank accreditation for its quality services by NABH (National accreditation agency under Quality Council of India) has already been started. 68 blood banks in India have already achieved this certification of excellent quality service and many are on the line.

Summary:

The hematological legend Prof. Wintrobe said “The alternative of blood transfusion is the transfusion of blood”. The search for alternative of blood is more 300 years old and the process was even more intensified after 1914, World War-I. We all remember the development of acute shortage of blood in Assam during 2009 serial bomb blasts. Also not to forget the Mangaloidoi incident of HIV transmission through blood transfusion. The Maintaining adequate stock from non enumerated voluntary donors and testing it through most advance technology are two big issues for which all of us has a role to play. It cannot be manufactured like any other drugs. The only source is through exchange from one donor to another. It is a very simple, quick and scientific procedure done under the subversion of a very expert team. It doesn’t make anyone feel weak. People can resume normal routine duty after 2-3 hours of rest. Every moment at some place someone needs blood. So come and join

hands in this noble work and save at least three lives by voluntarily donating one unit of blood. The person who needs it may be your near and dear one, you never know.

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