

SAFE BLOOD TRANSFUSION AND ETHICAL ISSUES IN TRANSFUSION MEDICINE

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Abstract:

Transfusion of blood and blood components, as a specialized modality of patient management, saves millions of lives worldwide. Transfusion Medicine is an integral and indispensable part of the healthcare system now. This topic that has been selected is intended to assist the transfusion physician or other specialist physician in acquiring the sense of responsibility for transfusion services. The section includes best practices in handling and administering blood for transfusion, blood management, risks (infectious and non-infectious diseases) of blood components. This topic has been intended to serve in a manner that this little supplement on the state-of-the-practice will facilitate safe patient transfusions, when transfusions are indicated, or minimize or avoid transfusions as appropriate in institutions of all sizes. The 'four principles' approach- autonomy, beneficence, non-maleficence, and justice- offers a common, basic moral analytical framework and a common, basic moral language to think about ethical issues in any field of health care services.

Key words: Transfusion medicine, blood transfusion services, safe blood transfusion, voluntary blood donation, ethical issues.

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Introduction:

Transfusion of blood and blood components, as a specialized modality of patient management, saves millions of lives worldwide each year. Recent concept of blood transfusion emphasizes on the transfusion of component therapy instead of transfusing whole blood¹. Throughout the world blood services aim to provide a life-saving service by ensuring an adequate supply of safe blood. However, across the world blood services are at very different levels of development. Hence, the actions taken in one country or region would not be appropriate in another². The blood supply is usually insufficient in some regions of the world i.e. none of the least developed countries (LDCs) and 9% of the developing countries (DGCs) collect 30 units or more per 1,000 of the population annually. Blood donor systems are totally voluntary and non-remunerated in 15% DGCs and 7% LDCs; 80% DGCs and 93% LDCs

rely totally or partially on replacement donors and 25% of both groups on paid donations. The proportion of repeat donors is low (medians: 47% in DGCs, 20% in LDCs), and discard rates for collected blood are often high (up to 33%)³. The proportion of safe donors is highest in systems where all donors are voluntary and non-remunerated conditions that exist in 85% of developed countries but only 15% of developing and 7% of less developed countries^{3,4}. Almost 90% blood comes from professional blood donors (PBDs) for transfusion purposes in our country. Given the lack of mandatory screening, the safety of blood is largely dependent on the lifestyles of the PBDs⁵. Routine transfusions for the patients with anaemia, haemoglobinopathies, elective surgeries, trauma and burn as well as in special needs for the neonates and geriatric patients are provided in hospital transfusion services of all sizes⁶. In Bangladesh, there are specialized

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physician in transfusion medicine in some tertiary hospitals, who provide hands-on consultative services to their colleagues, whereas in other facilities like district hospitals, the technical specialists (including blood bank technicians) shoulder much of the burden of providing these services. Still there are some drawbacks in 'safe blood transfusion' movement as well as maintaining the ethical values in transfusion medicine. This article is an effort to explore the ethical concerns as well as the current scenario of blood transfusion in Bangladesh and build an insight into the physicians about ethical guideline in day to day practice.

Ethical issues in Transfusion Medicine:

Ethics is a dynamic process in relation to the state of scientific knowledge, public awareness and the local laws, at any given time and place. The practice of transfusion medicine involves a number of ethical issues because blood comes from human beings and is a precious resource with a limited shelf life⁷. In 1980, the International Society of Blood Transfusion (ISBT) endorsed its first formal code of ethics, which was adopted by the World Health Organization (WHO) and the League of Red Cross and Red Crescent Societies. A revised code of ethics for donation and transfusion was endorsed in 2000^{8,9}. The first and foremost principle is that when transfusion is required, the patient should be advised of the current risks of receiving blood components, based on the type of component and its attendant risks. Both the noninfectious and infectious risks should be correctly and completely discussed with any patient before administration of a blood transfusion¹⁰. Ethical principles of autonomy, beneficence, non-maleficence and justice provide a rational basis for decision-making when a new blood management programme is instituted^{10,11}. By proactively considering the ethical dilemmas posed by the juxtaposition of patient needs with clinical judgement at the outset, institutions may devise workable programmes that improve patient safety and quality outcomes¹¹.

Ethical issues related to donors:

Donating blood should be considered as a gift. The WHO recommends that national blood services should be based on voluntary, non-remunerated blood donation. No one should be forced to donate, for family or economic or any other reason. The trade of human blood and body parts is unethical. Though non-remunerated blood donation is considered a gift, the blood centre has a right to accept or defer it, if unacceptable. Donor deferral might appear as discrimination and a violation of a human right, but the patient's right to safer blood is more important here, as blood centres are made to help the patients and not the donors¹².

Donor consent and confidentiality are important issues. Personal information disclosed by the blood donor during the course of a pre-donation interview and information obtained from the various tests performed on the donated component, are expected to be held in confidence by the blood bank authority¹². Donor screening and testing are to be simple. Today's donors are asked intimate questions about their lifestyles and put through a laboratory screening. This has got a significant repercussion for the relationships between blood centres, blood donors, physicians and patients⁷.

The donor room personnel and the donor may have misunderstandings about confidentiality. There is often a tension in donor centres between the need to keep the donor information confidential and the need to disclose relevant information to third parties such as family members, employers, public health authorities and police officers⁷.

Blood safety depends partly on the information provided by the donor and it is also the donor's moral duty to provide truthful information. It is very unethical for a donor to willfully conceal information about his/her high-risk behaviour or medical history¹³.

Ethical issues related to patients:

Ethical issues related to patients include access to risk-free safe blood, free of charge or need of replacement, informed consent for

transfusion, the right to refuse the transfusion, and the right to be informed, if there is any harm⁷.

Consent for transfusion has to be informed consent. The patient should be informed of the known risks and benefits of transfusion, and alternative therapies such as autologous transfusion or erythropoietin. Only then should the consent be documented. If the patient is unable to give prior informed consent, the basis of treatment by transfusion should be in the best interests of the patient¹³.

The patient's right to refuse blood transfusion should be respected¹⁴. Some religious sects such as Jehovah's Witnesses do not accept blood transfusions¹⁵.

If the patient has been transfused blood and components that were not intended for him/her, whether there was any harm or not, he/she has the right to be informed^{14,16}. Similarly a patient who has inadvertently received blood positive for a transfusion transmissible marker has a right to be informed and given due compensation¹⁷.

There are also some ethical principles for blood establishments such as profit motive should not be the basis of establishing and running blood transfusion services¹⁸. Wastage should be avoided to safeguard the interests of all potential donors and recipients¹⁹.

Blood transfusion services: Bangladesh perspective

Blood Transfusion Service (BTS) is an integral and indispensable part of the healthcare system now. The priority objective of BTS is to ensure safety, adequacy, accessibility and efficiency of blood supply at all levels². With the rising awareness of ethical issues in every field of medical care and research in the world, awareness is growing in the field of transfusion medicine as well⁸. However, in Bangladesh, we are still to adopt and maintain the code of ethics in different fields of medical science. BTS in Bangladesh started in 1950 at the Dhaka Medical College Hospital. In the year 1968, three more blood transfusion centers were opened at Mitford Hospital, Dhaka; Chittagong Medical College Hospital, Chittagong; and

Rajshahi Medical College Hospital, Rajshahi²⁰. Later, blood transfusion departments became operational in different medical college hospitals and district hospitals. In 1976, the "Bangladesh Council of Blood Transfusion Service" was established to supervise and monitor improvement of BTS in the country²¹. In the year 1992, the government constituted a committee called "Blood Transfusion Committee" to offer advice on the introduction of donor selection criteria, matters relating to blood safety and introduction of various tests and other technical issues. As an integral part of the healthcare system, the objective of BTS of Bangladesh is to ensure safety, adequacy, accessibility and efficiency of blood supply at all levels^{22,23}. To reach this goal, the Government of the People's Republic of Bangladesh passed '*Safe Blood Transfusion Act, 2002*' and '*Safe Blood Transfusion Regulations, 2008*' in the Parliament. These are a regulatory laws for setting up blood transfusion centres, management, blood collection, blood storage, blood testing and transfusion to prevent unauthorized practices of human blood transfusion. Establishment of private blood banks, operation, licensing system, inspection committee and punishment for violation of rules etc. is clearly stated in the law²⁴. Moreover, The High Court gave directions for enforcement of the *Bangladesh Red Crescent Society Order, 1973*, the *Safe Blood Transfusion Act, 2002*, and *Safe Blood Transfusion Regulations, 2008*, to ensure the right to health, which they argued was envisaged by the right to life as guaranteed by Article 32 of the Constitution²⁵.

Lack of understanding of the issues related to a safe blood transfusion service has led to an emphasis on screening donor blood for infections as a means of ensuring safe blood transfusion. Basic licensing standards for blood banks with regard to space, and the quality and quantity of medical staff have remained unchanged over the past three decades. This compounds the problem and society pays the price⁴. The importance of ensuring blood safety as well as the inadequacy of the national blood supply is highlighted due to the emergence of HIV in the 1980s. The global burden of diseases

due to unsafe blood transfusion can be eliminated or substantially reduced by adopting an integrated strategy for blood safety²⁰. Government of the People's Republic of Bangladesh with the financial assistance of the United Nations Development Programme (UNDP) formed a Blood transfusion sub-committee (BTSC) under the auspice of National AIDS Committee (NAC) in 1997 with the aim of curbing the incidence of Transfusion Transmissible Infections (TTI) in this country. The 'Safe Blood Transfusion Programme' was launched through initially establishing 98 blood transfusion centres throughout the country from the districts towards the national level hospitals²². The general objective of the program was to provide safe blood and blood products countrywide. There were some specific objectives like capacity-building of institution and service providers, ensuring institutional facilities of screenings and enhancing the spirit of voluntary blood donation. The screening tests mandatorily performed in the blood transfusion centers were HBsAg, Anti-HCV, Anti-HIV ab 1 & 2, VDRL, Malarial Parasite^{20,22,26}. Since 2004, the programme had been continuing in this country with the assistance of World Health Organization (WHO) and the World Bank. Now the programme is being run as Health Nutrition Population Sector Programme (HNPS) under the Ministry of Health and Family Welfare of Bangladesh²⁷. A good management structure is the key for ensuring safe and adequate blood supply. According to WHO guideline, inefficient and poorly managed blood service not only misuses scarce blood supply, but also costs more in terms of the total national budget than a well-organized service²⁸.

A total of 1,687,390 donations under safe blood transfusion programme mainly from voluntary and directed (relatives) donors were screened throughout the country during a period of 8 years (2001-2008). 111 donors (0.0065%) were found to be positive for HIV ab 1 & 2. Overall HBsAg, anti-HCV and RPR were found positive in 0.96%, 0.15% and 0.15% donations respectively. The important feature of the programme is an increase in the number of voluntary donations and thus, an increasing

number of donations coming under screening programme²⁶.

To save people from the curse of impure blood, different social and cultural organisations are working across the country. The basic fact is that in this branch of medicine, society plays a direct role in the patient's well being. The trend should change from blood donation being not just a "gift of life" but also a "way of life", a social responsibility of every healthy human being who is eligible to donate blood. This attitudinal shift will also take us closer to setting up an infrastructure based on a more systematic and collective response to illness by society as a whole, rather than just on family obligation²⁹. Bangladesh Red Crescent Society and 'Sandhani' have been playing a leading role in the voluntary blood donation movement since 1973 and 1978 respectively. Organizations like 'Orka', 'Badhon' and 'Quantum' also conduct voluntary blood donation activities. However, safe blood transfusion and ethical practice in transfusion medicine are still found to be challenging in our country. It would help much, if government guidelines were used to set up a procedure for designating well-managed blood banks as regional blood transfusion centres and setting up multiple-tested blood storage centres to improve the quality and increase the accessibility of safe blood in all parts of the country, especially the rural areas²⁹.

Some propositions:

Some essential steps for safe blood transfusion service are being recommended here¹¹:

1. Formulation of a national policy for the blood transfusion service with time-bound programmes, which will encompass the ethical issues;
2. A centrally coordinated, structured and organized blood transfusion service for the country under a defined authority;
3. A blood transfusion service based on an organized voluntary blood donor programme.

Besides, some complementary measures can be taken such as strict monitoring of screening blood for transfusion-associated infections appropriate to the country's epidemic status,

rational use of available blood, and engaging qualified personnel to head and manage the blood transfusion service¹¹.

Last but not the least, the ‘four principles’ approach, developed in the United States, is based on four common, basic prima facie moral commitments - respect for autonomy, beneficence, non-maleficence, and justice - plus concern for their scopes of application. It offers a common, basic moral analytical framework and a common, basic moral language to think about ethical issues in health care³⁰.

Conclusion:

The practice of transfusion medicine involves a number of ethical issues because blood comes from human beings and is a precious resource with a limited shelf life. It involves a moral responsibility of the physicians and blood bank towards both the donors and the patients. Decisions must be based on four principles as mentioned earlier and of course, the Hippocrates’ principle of “Primum non nocere” (i.e. first do no harm).

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