Ethics and blood donation: A marriage of convenience

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Summary

Quality, safety, risks and risk management are currently the leading words in transfusion medicine, and several approaches are necessary to correctly evaluate the fundamental basis of blood transfusion. Ethics is probably the most focused approach with which to examine the inconsistencies and conflicts of interest of the various stakeholders involved in the transfusion medicine field. In this short review, the authors will present some aspects of ethics related to blood transfusion, particularly those involving blood donation.

Introduction

Ethics and transfusion medicine are at the crossroad of medicine and philosophy (or humanities), notably because blood is full of myths and symbols [1,2]. Several questions emerge when transfusion medicine is evoked; the scandals of contaminated blood are indeed still embedded in memories and have definitively changed our appreciation of dangers. Blood safety is based on five pillars:

- infection-related safety based on epidemiology and monitoring of infectious risk;
- immunological safety based on individualized or personalized transfusion medicine;
- safety in procurement, to ensure a robust blood component inventory;
- patient-focused blood management that aims to evaluate the needs of each individual patient;
- ethics [3].

In this context, it is important to discuss the various ethical issues that the transfusion medicine community must face, because many different representations are associated with blood, blood components, and transfusion [1]. Many ethical aspects of transfusion medicine had already been...
addressed in the medical literature 40 years ago, notably the concerns of the Jehovah’s witnesses’ refusal of blood transfusion, the issue of religious faith versus medical ethics, voluntary and unpaid blood versus compensation or remunerated plasma donation in several countries, the concept of altruism (is it pure or is it based on some unsaid expectations? [4]), the sacred blood gift, blood doping and misuses of blood, and problems related to gift, exchange, and political economies of health care (should blood be bought and sold) [5-8].

History and development

The idea of taking blood from one individual to infuse it into another was developed in ancient Egypt. The word “transfusion” stems from the ancient Latin *transfundere*, which initially meant “to pour from one vessel to another”. Early on, it generally acknowledged meaning is included two different notions: the corruption of a population by mixture with foreigners, with sexual and bread connotations; and the transfer of a debt [2]. Hence, the concept of transfusion as the transfer of the vital spirit or an idea was present before the definition of transfusion as the transfer of blood between two individuals. Before transfusion of blood between different individuals, bloodletting was a common practice, and is still performed under very strict conditions [9] in patients suffering notably hemochromatosis [10], in some forms of porphyria [11] or polycythaemia vera, which may be present in some blood donors [12]. Nowadays, discarded blood is traced all along the procedure and destroyed following regulatory requirements. In some very strict cases, bloodletting in patients presenting with hemochromatosis can be converted into regular blood donation provided that the patient – turning to become a donor – volunteers and meets eligibility blood donation criteria [13,14]. At the present time, some investigators further suggest that bloodletting may prove useful to prevent type 2 diabetes in individual with high ferritin level, associated or not with hemochromatosis [15]. Bloodletting thus stands as a therapy in a limited number of medical disorders [16], and is no longer – by all means – proposed in mental disorders as it used to be in ancient times.

Blood donations are generally intended for transfusion into another individual which normally occurs in a context of mutual anonymity. However, these days, whole blood is no longer transfused; only blood components such as plasma, platelet concentrates or erythrocyte concentrates are transfused to patients. Paradoxically, “reconstituted” whole blood (high-volume administration of fresh frozen plasma, platelet concentrates, and red blood cells) is delivered in trauma patients [17]. A donor may also predeposit blood or blood products to cover his or her own prospective needs, notably for elective surgery. A third possibility is so-called “directed donation”, in which a donor gives blood to a particular recipient, notably when immunized patients need “rare” compatible blood.

An alternative to this not-for-profit policy is “compensated donation”, often used in Africa, in which a recipient receives blood under the condition that one or several of his or her relatives make(s) donation(s) to compensate for the blood component being issued. Laws in most Western countries prohibit this type of donation because it does not respect the voluntary and anonymous basis of donation and is often considered as an impingement to solidarity. In addition, and particularly if “rare” blood groups are needed, direct donation is organized between family members (most frequently brothers and/or sisters).

The main concerns of national health authorities regarding blood and blood components are to maintain an adequate blood and plasma supply for patients requiring transfusion, to ensure the appropriate use and warrant the safety of blood products, and to prevent the transmission of infectious pathogens [5]. Epidemiological studies performed in the Western world have shown that blood obtained from voluntary non-remunerated repeat donors carries fewer infectious agents – as deduced from biological markers – than blood from paid donors. However, this finding does not necessarily have universal or eternal value [18]. Data on the safety profiles of donors in Africa, Asia as well as from Latin America show that the prevalence of infectious diseases is different when compared to that of the Western and Northern part of Europe and the USA/Canada, plus Australia and New-Zealand. In addition, blood groups are very different in various ethnic populations [19,20]. Thus, and taking into account that blood donation must be though in an era of a globalized movement of people, ethics of blood donations certainly will be challenged in the next near future. Therefore, one should ask which value is to be prioritized between securing non-paid blood donations and providing blood to patients in sufficient quantity. Ethical judgment includes the balancing of two values (which, in a given context, may be conflicting) and the duty to evaluate the practical consequences of a choice. While respectable, the philosophical substrate intended by the concept of “solidarity” is linked to one’s culture and is not necessarily universal (even the best intentions can lead to catastrophic events, in some cases). If prohibition of family donations (e.g., in Africa) does not lead to a better and safer blood supply, but paradoxically worsens already existing shortages, then the ethical consequences of such a strategy also merit consideration [21,22].

Obligations and ethical considerations

In addition to the legislative straitjacket in place in most countries [23], in addition to the numerous documents edited by various scientific or governmental agencies describing all aspects involved in the different procedures to collect, prepare, secure, test, control, qualify, deliver and survey (vigilances) blood components, several organisms, notably WHO, as have prepared guidelines to delimit ethical procedures involved in
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