

Pattern of requests for interspousal donation and transfusion in university of Maiduguri teaching hospital

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Abstract

Background: The cases of 66 female patients who needed transfusion and requested for interspousal directed blood donations from their husbands at the UMTB Blood Bank from 1997 to 2001 were reviewed. The patients required blood for elective procedures, and wanted to be transfused with the blood of their husbands (interspousal transfusion) in order to avoid the risk of HIV infection, believing in the safety of their husband's blood but unaware of the remote immunological and clinical consequences of such transfusions, including haemolytic disease of the newborn in subsequent pregnancies.

Method: The patients were assessed with respect to age, educational status and past history of transfusion with husbands' blood. The patients were appropriately counseled regarding the risks associated with such transfusions.

Result: Out of the 66 patients studied, 51 (77%) were within the ages of 30-39 years while the remaining 15 (23%) patients were aged 20-29 years. Up to 58 (88%) of the patients had post secondary school education while the remaining 8 (12%) patients had secondary school education only. After counseling, 62 (94%) patients relinquished their earlier request for interspousal transfusions and opted for screened non-directed homologous donor blood while the remaining 4 (6%) patients opted for autologous donation. However, 3 (5%) patients had positive history of previous interspousal transfusion.

Conclusion: Counseling efforts must be intensified against this apparently safe but undesirable and dangerous form of transfusion.

Key words: Blood donation, directed, interspousal

Introduction

In accordance with the recommendations of the World Health Organization (WHO)

and the International Society of Blood Transfusion (ISBT) blood donation shall in all cases be absolutely voluntary and there should be no financial motivations

either for the donor or those collecting the donations.¹ The motivation must be purely altruistic towards helping the unknown recipient.² When an individual donates blood for the purpose of transfusing a defined recipient known to the donor such donations are referred to as directed donations.³ This type of donations is often a response to the hazard of transfusion transmissible infections, in particular the risk of human immunodeficiency virus (HIV) infection.^{3,4} Such donations are usually solicited from among family members and close friends whom the recipient strongly believes are in good health and are not engaged in high-risk behaviors.^{3,4} However, there is no evidence to indicate that directed donations are better or safer than the non-directed volunteer donations.^{3,4}

In our centre at the University of Maiduguri Teaching Hospital (UMTH) we have in the past few years noted increasing tendency among women to request for directed donations from their husbands (interspousal directed donations) in an attempt to avoid the risk of acquiring transfusion associated HIV infection. In this paper we intend to evaluate the pattern of such requests as well as review their clinical implications.

Patients and methods

The requests for interspousal directed donations from 66 female patients who required transfusions for anaemia and for elective general, gynaecological or obstetric surgical procedures were prospectively studied during a 5-year period (1997-2001). All requests were presented at the UMTH blood bank and were specifically aimed at avoiding the risk of acquiring HIV infection, with the patients strongly believing in the safety of their husband's blood. All patients were appropriately counseled. In this study we evaluate the nature of these requests by determining the number of cases during

the period of study, the educational status and age of the patients, any previous history of such transfusion as well as the outcome of counseling.

Results

A total of 66 requests for directed donations were received from female patients who wished to be transfused with the blood of their husbands during a 5-year period (1997-2001). Three (3) requests were made in 1997, 7 in 1998, 15 in 1999, 20 in 2000 and 21 in 2001. The patients were educated up to secondary school level in 8 (12%) cases, while the remaining 58 (88%) patients had post secondary school education as shown on Table 2. All of the patients were premenopausal women, 51 (77%) of them were within the ages of 30-39 and the remaining 15 (23%) were in the age range of 20-29 years. After counseling, 62 (94%) patients accepted screened non-directed homologous donor blood and the remaining 4 (6%) patients opted for autologous donations. The counseling revealed positive history of previous transfusion with husband blood in 3 (5%) patients, but no such history was elicited in the remaining 63 (95%).

Discussion

The impressive feature of our data is the steadiness with which the number of requests for interspousal donations had risen from only 3 in 1997 when the first of such request was received at our blood bank, to 21 in the year 2001. This trend is interpreted to suggest increasing level of awareness about the risk of HIV transmission over time and correlates directly with the educational status of our patients, the majority of who had attained post secondary school levels. In fact, a similar rise in the frequency of directed donations was experienced in north

America at the onset of the HIV epidemic in the mid 80s.³ However, our situation in this study is peculiar in the sense that the selected directed donors were the husbands of the patients destined to receive the blood. It suffices to mention that directed donation in general is unethical because it contravenes the basic principle of blood donation in which the donation should be completely anonymous and for altruistic cause.¹ Further more, interspousal directed donation, which is aimed at transfusing a female patient with the blood of her husband must be specially avoided not only on ethical ground but also due to clinical considerations. From the immunological viewpoint, transfusing a female patient with the blood of the husband would immunize such patient against a wide range of antigens on the erythrocytes, leucocytes and platelets present in husband's blood. Half of these paternal antigens will be inherited and expressed by the fetus of such couple. Therefore, alloantibodies formed against such antigens by the mother are a potential cause of clinical syndromes of fetomaternal incompatibilities including haemolytic disease of the newborn as well as alloimmune neonatal neutropenia and thrombocytopenia in subsequent pregnancies.⁵ The risk of these adverse effects occurring is high even if the husband and wife are ABO and RhD antigens compatible, because many other red cell antigens such as E, c, Kell, Duffy, Kidd and MNS as well as leucocytes and platelet antigens are capable of inducing alloantibodies that can cause haemolytic disease of the newborn as well as alloimmune neonatal neutropenia and thrombocytopenia.^{5,6} With reference to our patients, the risk is particularly serious because all of the patients were premenopausal within a reproductive age group of 20-39 years.

In order to avert these risks, we offered counseling sessions in which the clinical implications of such transfusions

were highlighted to all patients (in the company of their husbands) at the instance of their request for the directed donations. The counseling protocol addressed the general aspects of transfusion transmissible infections, immunological perspectives with regards alloimmunization of recipients by donor blood or fetomaternal haemorrhage, and the mechanisms involved in the development of fetomaternal incompatibilities and how to prevent them as well as the ethical issues regarding blood donations and advantages/disadvantages of different types of donations. Eventually, the patients were presented with the alternative options of either accepting screened non-directed homologous donations⁷ or, for those who were eligible, undergo the autologous donation program that requires no screening and is the best way of avoiding all forms of immunological and infectious risks associated with transfusion.^{8,9} The overall result was a change of mind in all patients, 94% of who agreed to accept screened non-directed homologous donation from the general blood bank pool and the remaining 6% opted for predeposit autologous donations. Initially about half of the patients studied in this report opted for autologous donation and transfusion after counseling, however, the figure was reduced to 6% as many were disqualified on the basis of pre-existing anaemia, presence of malignancy, advanced pregnancy or a combination of some of these factors that would be contra-indicative of autologous donations;¹⁰ all of such disqualified patients subsequently opted for accept screened non-directed homologous donations. Therefore, disqualifications on medical grounds were the main reasons for the relatively small percentage of our patients that opted for autologous donation despite the enormous advantage it has over homologous donations by completely eliminating the risks associated with

disease transmission and alloimmunization.^{8,9}

Unfortunately direct questioning during counseling sessions revealed that 3 (5%) patients had a previous history of interspousal directed transfusion with the blood of her husband, which took place years ago at private health facilities. Although these patients experienced no immediate adverse effects or reactions at the time of such transfusions, there is the possibility that primary sensitization against a number of their husbands' blood cell antigens might have occurred.⁵ However, in subsequent pregnancies; secondary immune response may then be triggered any fetomaternal haemorrhage that could lead to the development of syndromes of fetomaternal incompatibilities, which would be detrimental to their fetuses.⁵ Therefore, these patients were offered additional counseling regarding possible immunological complications in future pregnancies for which they will need detailed serological evaluations and closer observation during the antenatal periods.

Conclusion

Interspousal directed donation is an emerging form of directed donation requested by educated female patients in response to the current HIV epidemic. Blood bank consultants and other clinicians must offer effective counseling in all such cases in order to highlight the potential adverse effect of interspousal transfusion and offer advice on alternative sources of safe blood.

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