

## Surgical Patients' Knowledge and Acceptance of Autologous Blood Transfusion.

Olaitan PB<sup>1</sup>; Adekanle DA<sup>2</sup>; Olatoke SA; Olakulehin OA; and <sup>3</sup>Morhason-Bello IO

### ABSTRACT

**Background:** Homologous blood transfusion carries a well-documented array of risks especially in an HIV endemic environment like Nigeria. It is therefore imperative to consider other forms of restoring blood volume in surgical patients. Autologous blood transfusion (ABT) is one of the ways the problem of HIV transmission can be reduced among surgical patients. The knowledge and acceptability of ABT among surgical patients about ABT, especially pre-donated ABT were assessed.

It also assessed whether or not surgeons inform elective surgical patients about this alternative

### Materials And Methods

Questionnaires were distributed among elective surgical patients that presented during the study period. The knowledge, willingness and the factors influencing the willingness of the patients to participate in ABT were investigated. The data were analyzed with SPSS Version10.

### Results

Of the 116 patients [71 males; 45 females] interviewed, 29 (25.0 %) had heard about ABT, 80 (69.0 %) patients had never heard about ABT while 7 (6.1 %) were not sure. Of the 29 respondents who had heard about ABT, only 2 had had ABT. Of the 48 patients who needed blood for current surgical problems, only 4 (9.3 %) would have ABT. There was a significant difference in the number of respondents who believed that ABT is better than homologous transfusion ( $\chi^2 = 69.11$ ,  $p < 0.001$ ).

### Conclusion

The knowledge of ABT is low among our surgical patients and surgeons should present this alternative to their patients. The acceptance of ABT may also help in reducing or eliminating HIV transmission via blood transfusion.

Key words: homologous, hepatitis, surgical procedures, blood volume.



Various detrimental effects of homologous blood transfusion have been documented<sup>1</sup>. Annually, donor blood is responsible for 300,000 cases of hepatitis and 15,000 cases of cirrhosis<sup>2</sup>. Three percent of the documented AIDS cases in the United States have been linked to the contaminated blood donor.

Departments of <sup>1</sup>Surgery, and <sup>2</sup>Obstetrics & Gynaecology, Lautech Teaching Hospital, Osogbo, Osun State, Nigeria.

<sup>3</sup>Department of Obstetrics and Gynaecology, University College Hospital, Ibadan, Oyo state, Nigeria.

### correspondence

Dr. P.B. Olaitan Department of Surgery, Lautech Teaching Hospital, Osogbo, Osun State, Nigeria.  
E-MAIL: emiolaitan@yahoo.com

Using the patient's own blood eliminate the risk of the patient contracting hepatitis, AIDS, cirrhosis or other infections through contaminated homologous blood transfusion<sup>3</sup>. Apart from this, homologous blood transfusion is a finite resource and in Nigeria blood transfusion is associated with chronic blood shortage because Nigerians are unwilling to donate voluntarily. Autologous blood may therefore be a saving grace to many elective patients. But do our patients know about this alternative? Are they willing to accept it?. What are their fears concerning this method of transfusion? These are the questions this paper is set to answer.

### Materials And Method

A prospective study was carried out to assess the knowledge of, and willingness of elective surgical patients to accept autologous blood. questionnaires were distributed among surgical patients who presented to the surgical outpatient clinic and those admitted to have elective surgical procedures at the Ladoke Akintola University of Technology Teaching hospital, Osogbo, Osun State, Nigeria. Ethical clearance and consent of the patient were obtained. The biodemographic data were collected. Other information collected included the clinical diagnosis in each patient. The patients were then asked of their knowledge about blood transfusion,

autologous blood transfusion and whether or not they would accept this method of transfusion. The data were collated and then analyzed using descriptive analysis on SPSS Version 10.

### Results

A total of 116 patients from various surgical specialties took part in this study. There were 71 (61.2%) males. Their ages ranged between 14 and 75 years with a mean ( $\pm$ SD) of 38.85 ( $\pm$ 16.87) years. The specialties were shown in table 1 with Orthopaedic surgery contributing the highest percentage of 28 (27.2%), followed by 27 (26.2%) from general surgery, and the least 3 (2.9%) being from Urology.

Table 1. Association between specialty and willingness to participate in ABT.

Patients Specialty		Willingness to have ABT		
		Yes	No	Not sure
General surgery	27(26.2%)	14(51.9%)	7(25.9%)	6(22.2%)
Plastic surgery.	13(12.6%).	11(84.6%)	1(7.7%)	1(7.7%)
Ortho..Surg.	28(27.2%).	11(39.3%)	6(21.4%)	11(39.3)
Neurosurgery	6(5.8%)	3(50%)	2(33.3)	1(16.7%)
ENT	4(3.9%)	4(100%)	--	--
Urology	3(2.9%)	1(37.3)	--	2(66.7%)
Ophthalmology	5(4.9%)	2(40.0%)	--	3(60.0%)
Gynaecology	9(8.7%)	6(66.7%)	2(22.2%)	1(11.1%)
Others	21(18.1%)	5(23.8%)	3(14.3%)	13(61.9%)
TOTAL	116(100%)	57(49.1%)	21(18.1%)	25(21.6%)

$\chi^2=23.83$ , P value =0.093

One hundred and two (87.9%) of the patients had heard about blood transfusion before, with 13(1.2%) who had however heard and 1(0.9%) who was not sure. Only 29(25.0%) of the respondents had however heard about ABT before while 80(69.0%) of the patients had never heard and 7(6.1%) were not sure. Thirty-nine (33.6%) of the patients had had blood transfusion before, while 77(66.4%) had never been transfused. Of the 39 patients who had had blood transfusion, only 2(1.7%) had ABT, 9(7.8%) and 16 (13.8%) had their spouses and siblings respectively donating for them, 2(1.7%) had their fathers donating for them, 1(0.9%) had his child donating for him while 9(7.7%) were transfused with blood from donors who were neither related to them nor known to them. For their current clinical problems, 48(41.4%) of them had been told they needed blood for

the procedures while 54(46.6%) did not need blood and 5(4.3%) were not sure they would need blood transfusion at the time of the interview. Of the 48 patients who needed blood for their current Surgical problems, 4(9.3%) would have autologous blood, 7(16.3%) would have blood donated to them by their spouses while 21(48.8%) and 17(39.5%) of the patients respectively would have blood donated by their siblings and unknown donors.

Significant number of the respondents, 73(62.9%) agreed that ABT is better and 54(74.0%) of these were willing to pre donate compared to 14(13.6%) who felt ABT is not as good as homologous blood; 11(10.7%) of who were not willing to peronate. This is statistically significant ( $\chi^2 = 69.11$ ,  $p = 0.001$ )(Table 2).

Table 2. Association between knowledge that “own blood” is better and willingness to have ABT

Knowledge that own blood is better		Willingness to have ABT		
		Yes	No	Not sure
Yes	73(62.9%)	54(74.0%)	7(9.6%)	12(16.4%)
No	14(12.1%)	--	11(8.6%)	12(16.4%)
Not sure	29(25.0%)	3(10.3%)	3(10.3%)	23(79.3%)
TOTAL	116(100%)	57(49.1%)	21(18.1%)	38(21.6%)

$\chi^2 = 69.11$ ,  $P = 0.005$

Fifty-nine (50.9%) of the respondents would want to have if told by their surgeons they needed it, thirty one (26.7%) would not, while 26. (22.4%) were not sure they would. Appreciable number of the patients agreed to participate in ABT with the highest among ENT patients 4 (100%), followed by plastic surgery, 11(84.6%) and least among urology

patients with 1(37.3%), though this is not statistically significant ( $\chi^2 = 23.83$ ,  $p = 0.093$ ). When asked for the advantages of Autologous blood compared to homologous blood, 25(21.6%) of the respondents felt there would be reduced risk of infections, 12(10.3%) reduction in transfusion reaction, 2(1.7%) patients felt it was cheaper, 8(6.9%) felt it was psychologically more gratifying while

one(0.9%)patient felt it would hasten the time to have the elective surgery done. Many, 49(48.5%) of the respondents felt that predonation of blood is not hazardous and 43(87%) were willing to pre-donate, compared to only 7(33.3%) of the 12(57.1%) who believed it was hazardous and were not willing to take part in ABT. This is statistically significant (Chi2=63.01,P=0.001) (Table 3).

The possible hazards outlined by the patients that could result from Autologous blood include blood shortage /shock, 15(12.9%)

delayed recovery in 3(2.6%), 3(2.6%) felt they would develop some sicknesses while one (0.9%) felt it could lead to death.

Of 31 patients who would not like autologous blood, only 9(12.7) gave reasons and they include 5(7.0%) who felt their blood may not be sufficient; 2(2.8%) believed predonating may cause ill health, 1(1.4%) felt other option of homologous blood is better, 1(1.4%) was of opinion he might lose much blood during surgery and would therefore not want to donate.

Table 3. Suggestion that ABT is hazardous and willingness to have ABT

ABT is hazardous		Willingness to have ABT		
		Yes	No	Not sure
Yes	21(20.8%)	7(33.3%)	2(57.1%)	2(9.5%)
No	49(48.5%)	43(87.7%)	3(6.1%)	3(6.1%)
Not sure	31(30.7%)	7(22.6%)	5(16.1%).	19(61.3%)

**Discussion**

Since the discovery of human blood groups by Landsteiner in 1900 major advances in transfusion medicine have occurred, making current blood supply safer and safer. However, the risk will never be zero<sup>4</sup>. The safest blood a person can receive is his own. Many microorganisms can be transmitted through transfusion <sup>5</sup>. Public fears of transfusion transmitted diseases, particularly the Human Immunodeficiency Virus (HIV), has prompted an increasing demand by patients for their own blood to be collected and stored for elective surgery, thus eliminating all risk of infection or immunization to donor antigens<sup>6</sup> The number of institutions offering these programs increased 16-fold from 1970 to 1981, according to an American Association of

Blood Banks (AABB) survey<sup>7</sup>. Acceptance by clinicians and patients has grown steadily

since then in America. Our patients in this part of the world do not know that this is a feasible alternative as only 29(87.9%) of our patients had heard about this alternative even though most, 102(87.9%) of the respondents had heard about blood transfusion generally. ABT had been observed to be capable of relieving blood crisis in the nation and that transfusion of the patient’s own blood is standard in many surgical procedures<sup>8</sup>. The most common form of ABT is where blood is donated in anticipation of elective surgery<sup>9</sup>. In our patients however, predonation of blood for elective surgery is not a common practice. This is evident in the fact that of the 48 patients who needed blood for their current clinical problems, only 4(9.3%) would have

autologous blood by pre donating while others would have homologous blood from the bank. Autologous blood has been used in several centres under varying circumstances.<sup>10-12</sup>

Only 48(41.4%) of the patients responded to suggest correct possible advantages of ABT. Although a large number, 62(53.4%), of the patients felt there was no significant risk in donating their own blood, not all of the respondents were willing to have ABT. However of 31 patients who would not like Autologous blood, only 9(12.7%) gave reasons which means that majority of the patients did not have any genuine reason(s) for rejecting Autologous blood.

It is obvious from this study that the practice of autologous blood transfusion in our environment is quite low and many of our patients don't know about autologous blood transfusion. Although only 29(25.0%) of the patients had heard about autologous blood transfusion, an increased number, 59(50.9%) of the respondents would like to have this alternative if given by their surgeons when they needed blood transfusion for surgery. It is obvious that the responses to the advantages and the disadvantages of Autologous blood transfusion were correct in listing some of these advantages and possible adverse effects of the procedure.

It is noted from the study that patients' knowledge that their own blood is better and the consciousness of hazards of homologous blood transfusion influence their willingness to pre donate and this was statistically significant ( $P < 0.001$ ) respectively.

Our conclusion is that surgeons need to inform patients about these alternatives in blood transfusion and their advantages. This will lead to an improved willingness on the part of our patients to choose autologous blood if and when the physicians inform and educate them on this. This practice will also go a long way towards preventing the current spate of HIV/AIDS among surgical patients

and will reduce the load currently placed on homologous blood. Improved education regarding transfusion alternatives, along with collaboration from all involved disciplines, will help achieve the goal of minimizing the need for allogenic blood transfusion.

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