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Donor Notification and Counseling: Evaluation of Response of Reactive Donors - A Tertiary Care Hospital Study

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ABSTRACT

Background: Blood transfusion is a lifesaving intervention but the risk of transmitting transfusion transmissible infections (TTI) still remains even after use of sensitive techniques in TTI screening of blood units. Donor's notification and counseling is an important and efficient method of preventing TTI transmission.

Aim: The present study was undertaken to determine the response rate and attitude of the reactive blood donors to post-donation notification and counseling.

Materials and methods: This a retrospective study conducted in the Department of Blood Transfusion, in a Tertiary Care Hospital, Haryana, India over a period of one year. A total annual blood donation of 8354 units were collected and were subjected to routine TTI screening during the study period.

Results: Among these, 251 (3%) donors were found to be seroreactive for TTI diseases. 11 (0.13%) donors were HIV positive, 79 (0.94) donors were reactive for HBsAg, 105 (1.26%) donors were HCV positive, 51 (0.61%)were VDRL positive and 5 (0.06%) donors showed co-infection, (3 HbsAg+HCV,1 HIV+VDRL, 1 HIV+HCV). No blood donors were found positive for malaria parasite. All the 251 TTI reactive donors were informed telephonically and by letters, out of which 174 (69.3 %) were contacted and 77 donors (30.7%) could not be contacted. Out of 174 informed donors 108 responded by attending the counseling in the blood bank, i.e., response rate of 62.06%.

Discussion: In present study the main reasons for non-responding donors include wrong or incomplete phone numbers and postal addresses, lack of awareness and already known reactive status. National guidelines for notification of reactive donors need to be formulated and trained and efficient counselors should be appointed to improve the donors' understanding about the TTI and importance of correct and complete demographic data to achieve 100% response rate of contacted reactive donors.

Keywords: Reactive donor, Notification, Counseling, Transfusion Transmitted infections

INTRODUCTION

Blood transfusion plays an essential role in patient management in both routine and emergency situations and is a life-saving intervention in which millions of lives are saved each year globally through this procedure [1]. However, blood transfusion is also associated with the potential risk of transmitting transfusion-transmitted infections (TTIs) and imposes serious challenges to the medical personnel to ensure availability of safe blood products. According to the National AIDS Control Organization (NACO) guidelines it is mandatory to screen donated blood for HIV 1 and 2, hepatitis B, hepatitis C, syphilis and malaria [2]. Many blood donors are asymptomatic carriers of TTIs, and blood donation by such infected donors during the window period further increases the risk of TTI transmission [3]. TTI disease transmission can also be prevented by another tool of donors' notification and post donation counseling about the status of TTI reactivity and thus preventing them from donating blood in future. The main responsibility of Blood banks is to provide safe blood to the recipient, but in addition they also have a responsibility towards donor safety by means of donor notification and counseling. But it is not a universal

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procedure of communicating the positive test results to blood donors [4]. In India, until December 2004, disclosure of viral TTI reactivity to the blood donor was not permitted; at that time, the National Blood Transfusion Council, Government of India, formulated a strategy for the same and advocated the disclosure of TTI results to blood donors [5]. One of the objectives of action plan for blood safety is awareness program for donor information, education and motivation to ensure adequate availability of safe blood. Under this donors are counseled about TTIs prior to donation and are given the option of knowing their infective status and a written consent has to be taken by the blood banks on the donor questionnaire and consent form at the time of donation [6]. If the blood sample of a donor is found to be reactive, that blood unit is discarded in accordance with the existing procedure and blood donors with reactive screening test results are informed by letters and telephone calls and are requested to visit blood bank for counseling and repeat testing. Blood banks have to refer donors who tested HIV reactive to the designated Integrated Counseling and Testing Centers (ICTC), donors reactive to hepatitis B or hepatitis C need to be referred to a gastroenterologist for further workup and management while donors reactive for malaria and syphilis should be referred to physician and sexually transmitted diseases (STD) clinic respectively [7]. Post donation counseling not only involves informing the reactive donors about their serological status but should also include the dangers of transmitting the infection to other people, providing emotional support, behavior and lifestyle modifications, and then referral for treatment and follow-up. Counseling, testing and notification together form the vital link between the donor and safe blood [8]. However most of the reactive donors either do not respond at all or do not follow-up or continue to donate blood despite being notified about the infectious disease test results. Therefore, this study is carried out to know the response rate and attitude of the reactive blood donors to post donation notification and counseling and to propose useful recommendations that could probably increase the response rate so that the blood banks can improve their role in providing safe blood to the needy patients by preventing reactive donors from donating blood. This will also help in spreading the importance of self-deferral.

MATERIALS AND METHODS

It was a retrospective study conducted at Blood Transfusion Department, in a tertiary care hospital, Haryana, North India, over a period of one year to evaluate the response of TTI reactive donors after notification of their abnormal test results during the year 2018. All the donations were screened for transfusion transmissible infections namely human immunodeficiency virus (HIV 1 and 2) by 4th generation Enzyme-Linked Immunosorbent Assay (ELISA) (Merilisa), Hepatitis B (HBV) and Hepatitis C (HCV) by third generation (ELISA) (Merilisa), malaria by rapid test kit (Meril) and Syphilis by rapid test strip for TPHA (Meriscreen Syphiline). If the results were found to be positive, blood unit was discarded as per hospital standard operating procedures and reactive donors were called by the blood bank counselor telephonically to report to the blood bank for repeat sampling, one-to-one counseling and referral to the appropriate center for further management. At least three telephonic calls were made, and for those who could not be contacted on phone, letters were posted thrice on the donors' given addresses by the department. Reactive donors reporting to the blood bank were retested using fresh sample, informed about their status, counseled and were referred to the respective department. HBV or HCV reactive donors were referred to the gastroenterologist and malaria reactive donors to the medicine OPD, syphilis reactive to the Dermatology and venereal diseases OPD and HIV reactive to the integrated counseling and testing center.

RESULTS

A total annual blood donation of 8354 units were collected and subjected to routine TTI screening during the study period (January 2018-December 2018). Among these, 251 (3%) donors were found to be seroreactive for TTI diseases. 11 (0.13%) donors were HIV positive, 79 (0.94%) donors were reactive for HBsAg, 105 (1.26%) donors were HCV positive, 51 (0.61%)were VDRL positive and 5 (0.06%) donors showed co-infection, (3 HbsAg+HCV, 1 HIV+VDRL, 1 HIV+HCV) **(Table 1)**. Prevalence of hepatitis C infection (1.26%) formed the majority of the total TTI's over the study period **(Figure 1)**. No blood donors were found positive for malaria parasite. In our study out of the reactive donors 251 were males and only 2 were females. Seroreactive donors were classified into donors who could be contacted and donors who could not be contacted, donors who were contacted were again divided into donors who responded/returned back and donors who did not respond or return back. All the 251 TTI reactive donors were informed telephonically and by letters, out of which 174 (69.3%) were contacted and 77 donors (30.7%) could not be contacted **(Table 2)** as either their number could not be reached or switched off or incorrect address. Out of 174 informed donors 108 responded by attending the counseling in the blood bank and 66 donors were non responders as some of them attended the call but did not report to blood bank, some already knew their status and were undergoing treatment and others were not interested in getting tested again. Overall response rate of the communicated donors was 62.06% **(Table 3)**. Response rate for HIV, HBV, HCV, syphilis and co-infections were 77.8, 60.9%, 58.1%, 69.4% and 50%, respectively **(Figure 2)**.

Table 1. TTI seropositivity among donors.

TTI markers	No. of seropositive donors	TTI seropositive rate (%)
HIV	11/8354	0.13(%)
HBsAg	79/8354	0.94(%)
HCV	105/8354	1.26(%)
Syphilis	51/8354	0.61(%)
Co-infection	5/8354	0.06(%)
Total	251/8354	3(%)

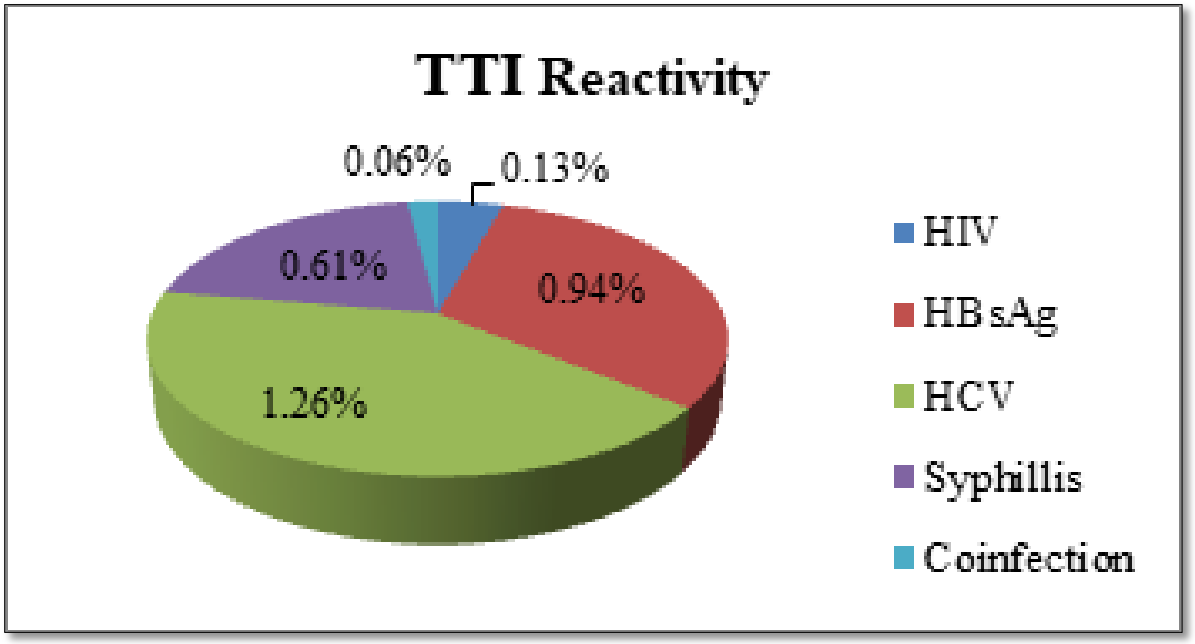

Figure 1. Percentage of donor reactivity for various TTIs.

Table 2. TTI reactive donors contacted.

	HIV	HBsAg	HCV	Syphilis	Co-infection	Total	%age
Total reactive donors	11	79	105	51	5	251	-
Contacted	9	46	81	36	2	174	69.3 (%)
Not contacted	2	33	24	15	3	77	30.7 (%)

Table 3. Response rate according to the TTI marker positivity.

Donors	HIV	HBsAg	HCV	Syphilis	Co-infection	Total
Contacted	9	46	81	36	2	174
Responded	7	28	47	25	1	108
%age	77.8 (%)	60.9 (%)	58.1 (%)	69.4 (%)	50 (%)	62.06 (%)

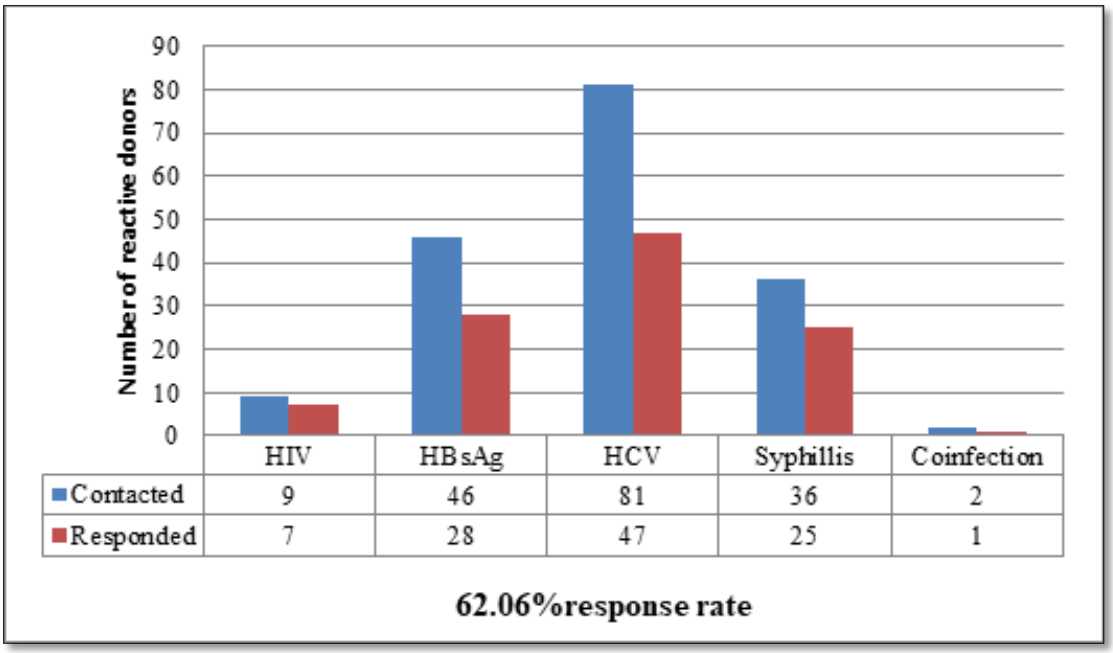

Figure 2. Response rate of contacted donors according to TTI marker positivity.

DISCUSSION

Although transfusion of blood and its components is lifesaving and plays a vital role in the management of many diseases, it always carries a risk of TTI transmission and many other adverse reactions. Proper pre donation counseling and TTI screening along with post donation counseling and notification to the TTI reactive donors are important pre-requisites in providing safe blood transfusion. The main aim is to protect and safeguard the health of both the donor and the recipient of blood and blood products. Post donation counseling and notification is beneficial to both society and the donor, as after confirmation of results, donor can take proper treatment and it also prevents reactive donors from donating blood again. The present study was done Blood Transfusion Department, in a tertiary care hospital, Haryana, North India, over a period of one year (January 2018-December 2018) to evaluate the response of TTI reactive donors after notification of their abnormal test results. In this study, a total annual blood donation of 8354 units were collected 251 donors were found to be seroreactive for TTI diseases. The seroreactivity rate of all five mandatory TTIs markers was 3% which is comparable to studies done by Kumari et al. [9] and Kotwal et al. [10], i.e., 2.81% and 3.02%, respectively. Whereas other studies in India done by Agarwal et al. [11], Leena et al. [12] and Singh et al. [13] showed lower TTI rates (0.87%, 1.35% and 1.7%, respectively). As our hospital is based in a rural area of Haryana, the reason behind higher rate of TTIs in our study could be due to rural donor population with lack of awareness, high risk sexual activities and endemicity of transmissible diseases among donor population. Out of the 251 TTI reactive donors who were informed telephonically and by letters, 174 (69.3%) could be contacted and 77 donors (30.7%) could not be contacted. Out of 174 informed donors 108 (62.06%) responded by attending the counseling in the blood bank for retesting and referring to ICTC or physicians and 66 (37.2%) donors were non responders. Similar response to the reactive donors notifications were also observed by Agarwal et al. [11] (59.8%). however low response rate was observed in studies by Mukherjee et al. [14] (34%). Other studies have reported higher responding rate of 98.2% and 88%, respectively [10,15]. In present study the main reasons for non-responding donors include lack of understanding as some of them attended the call but considered it unimportant did not report to blood bank, some already knew their status and were undergoing treatment and others were not interested in getting tested again. Response rate for HIV, HBV, HCV, syphilis and co infections were 77.8, 60.9%, 58.1%, 69.4% and 50%, respectively. Among all TTI response rate for HIV was highest 77.8%. Higher response rate for HIV was also noticed in other studies [9,16]. Higher response rates for HIV reactive donors might be due to the higher awareness and fear of HIV/AIDS among the general population [16]. In present study 30.7% of reactive donors could not be contacted, which is lower as compared to Kotwal et al. [10], i.e., 49.4% and Moyer et al., i.e., [17] 65.52%. In a study conducted by Kaur et al. [16], about 10.5% of the donors could not be contacted as either their phones were switched off or unavailable when contacted during the day time and due to wrong phone numbers and address were given by the donors. In present study, reasons for failure of communication with donors were due to wrong or incomplete phone numbers and postal addresses given by donors or donors do not pick calls even

after multiple attempts of calling. Donor's tendency to give false information reflects lack of awareness towards TTIs and its routes of transmission and possibility of known reactive status and donating blood just to cross check their reactivity by purposely giving wrong phone numbers and address in attempt to conceal their identity. Thus it is recommended to procure government provided I-cards from donors for their proper identification and to obtain correct address for communication. It is also recommended to lay emphasis on strict pre-donation screening and counseling by well trained and competent counselors with a special focus to increase the donors' awareness of TTI and routes of transmission. Privacy and confidentiality should be maintained to gain the donor confidence. It gives the opportunity of self-deferral to people having history of high-risk behavior and who are coming only for TTI testing (test seekers) [11]. However, proper pre-donation counseling is still a challenge due to limited number of staff and suitable facilities to assure privacy and confidentiality especially in the outdoor blood donation camps [14]. Therefore reactive donor notification and counseling for abnormal TTI test result is an important tool to prevent asymptomatic donors from considering blood donation again thus reducing the spread of TTI through blood transfusion. Information, education and awareness need to be created among the donors during both pre-donation and post donation counseling, so that they understand the importance of being called for TTI reactive status.

CONCLUSION

Donor notification and counseling is an important tool for curtailing TTI as counseled donors get inclined toward adaptation of healthy lifestyle and behavior and understand the importance of self-deferral and this also helps in promoting the development of healthy donor pool. But its limitations are failure of communication with the donors or false information provided by donors themselves to avoid social stigma and they continue to donate blood even after notification of reactive status resulting in persistent load of blood transmissible infectious risk. In this regard, it is recommended that government authorized valid identity card should be made mandatory for donor registration. National guidelines for notification of reactive donors need to be formulated and trained and efficient counselors should be appointed to improve the donors' understanding about the TTIs and its routes of transmission, screening tests done and importance of correct and complete demographic data for informing them the test results to achieve 100% response rate of contacted reactive donors.

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