ORIGINAL ARTICLE

Frequency of Hepatitis B, C & HIV among Blood Donors in Blood Bank of Lahore General Hospital, Lahore

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ABSTRACT

Background: Blood transfusions are linked with several risks that reason troublesome results. Among these, HBV (hepatitis B virus), HCV (hepatitis C virus) and HIV (human immunodeficiency virus) are obligatory tested globally among blood donors owing to potential grave constant clinical sequelae related to rapidly transmitted agents. Viral infections of Hep-B and C take place in Pakistan mostly as a result of blood transfusion without screening. Donated blood safety can be measured through checking the viral markers prevalence among blood donors.

Aim: To study the frequency of Hepatitis B, C and HIV among blood donors and their associated risk factors.

Method: It was cross-sectional descriptive study in which 190 blood donors at Blood Bank of Lahore General Hospital, Lahore were included. Data was collected through questionnaire from 01.01.2017 to 31.03.2017, which was entered in to computer using SPSS version 20.0.

Results: Out of 190 blood donors, 70% were more than thirty years old and 67.4% were married. 36.3% were treated by community quack. 54.2% visited community barber for shaving. Among these blood donors who were screened for HbsAg, Anti HCV and HIV-AIDS, 9(4.7%) were found positive. Study results further confirmed that among these positive cases, 3(33.3%) were positive for HbsAg while 6(66.7%) were Anti HCV positive.

Conclusion: Study concluded that no HIV positive case was detected while HbsAg was positive in three and Anti HCV was positive in six blood donors.

Keywords: HIV, Hepatitis B&C, blood donor, immunodeficiency virus

INTRODUCTION

Blood transfusion is believed most significant module of novel medicines that saves majority of lives daily. However, blood transfusions are linked with several risks that cause unfavorable outcomes[1]. Among these, HBV, HCV and HIV are obligatory tested globally among blood donors owing to potential grave constant clinical sequelae related to rapidly transmitted agents[2].

HBV and HCV are considered leading cause of acute morbidity and mortality. It is estimated that 2 billion individuals globally have HBV infection and above 360 million have chronic liver infections. Almost 62000 persons die each year caused by HBV infectivity. Approximately 150 million persons have chronic infectivity of HCV and above 350000 persons are expected to die each year owing to liver diseases associated with hepatitis C[3]. From the start of epidemic, above 70 million persons have been contaminated with HIV and almost 35 million persons have died due to HIV. Worldwide, 36.7 million persons were living with human immunodeficiency virus at end of the year 2015[4].

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Viral infections of Hep-B and C take place in Pakistan mostly as a result of blood transfusion without screening. In Pakistan, a national population survey was done by Medical Research Council to know the Hepatitis B and C actual prevalence. There was 2.5% prevalence for HBsAg and 4.8% for anti HCV, making a combined 7.6% infectivity rate, indicating a populace pool of approximately 13 million carriers of persistent Hep-B and C[5]. An estimation was made by UNAIDS Pakistan and National AIDS Control Programme that roughly 98000 cases of human immunodeficiency virus are available in Pakistan, with overall prevalence <0.05 percent in general population[6]. The reported prevalence among Pakistani blood donors is 2.33%, 3.78%, and 0.06% for HBV, HCV, and HIV, respectively[7].

There are several challenges to transfusion services comprise insufficient recruitment and selection of blood donors, inadequate national blood strategy, cost of blood screening kits, together with episodic need of reagents availability[8]. Simply continuous implementation and improvement in selection criteria of blood donors, proper screening and useful inactivation measures can provide guarantee for elimination or decrease in the chance of acquiring TTIs (transfusion transmitted infections)[9].

Infections due to HBV and HCV are public health issues worldwide. Donated blood safety can

be measured through checking the viral markers prevalence among blood donors[10]. Therefore, it is pertinent to perform a study about frequency of Hepatitis B, C and HIV among blood donors in Blood Bank of Lahore General Hospital, Lahore.

MATERIAL AND METHODS

It was a cross-sectional descriptive study in which 190 blood donors at Blood Bank of Lahore General Hospital, Lahore were included. Convenient sampling technique was used. Data was collected through questionnaire from 01.01.2017 to 31.03.2017, which was analyzed by using SPSS 20.0. All the data was presented in the form of graphs and tables by calculating the percentages and frequencies. From all the cases proper consent was taken and all the data confidentiality was ensured before data collection.

RESULTS

Table 1 provides socio-demographics information about blood donors and found that 57(30%) blood donors were upto 30 years old and significant majority 133(70%) was more than thirty years old. The mean age of the blood donors was 32.21±4.8 years.

Among these blood donors, only 14(7.4%) were uneducated while 57(30%) were under matric and majority 119(62.6%) studied upto matric and above. Likewise 62(32.6%) blood donors were single and 128(67.4%) were married blood donors.

Table 1: Blood donors' information

	Frequency	%age
Age		
≤30	57	30.0
>30	133	70.0
Total	190	100.0
Mean±SD	32.21±4.8	
Education		
Illiterate	14	7.4
Under matric	57	30.0
Matric & above	119	62.6
Total	190	100.0
Marital status		
Single	62	32.6
Married	128	67.4
Total	190	100.0

Table 2 describes the medical history of blood donors and found that 6(3.2%), 13(6.8%), 15(7.9%), 59(29.5%) and 69(36.3%) had history of jaundice, blood transfusion, surgical procedure, dental treatment and treatment from community quack, respectively.

Table 3 demonstrates personal practices of the blood donors that 2(1.1%), 103(54.2%), 4(2.1%) and 1(0.5%) had history of drug addiction, shaving from community barber, tooth brush sharing and extra marital relationship, respectively.

Table 2: Blood donors' medical history

	Frequency	%age
History of jaundice		
Yes	6	3.2
No	184	96.8
Total	190	100.0
History of blood transfusion		
Yes	13	6.8
No	177	93.2
Total	190	100.0
History of surgical procedure		
Yes	15	7.9
No	175	92.1
Total	190	100.0
History of dental treatment		
Yes	56	29.5
No	134	70.5
Total	190	100.0
History of treatment from quack		
Yes	69	36.3
No	121	63.7
Total	190	100.0

Table 3: Blood donors' personal practices

	Frequency	%age
History of drug addiction		
Yes	2	1.1
No	188	98.9
Total	190	100.0
Shaving from community barber		
Yes	103	54.2
No	87	45.8
Total	190	100.0
Tooth brush sharing		
Yes	4	2.1
No	186	97.9
Total	190	100.0
Extra marital relationship		
Yes	1	0.5
No	189	99.5
Total	190	100.0
Spouse disease history (HBV, HCV and HIV)		
Yes	0	0.0
No	190	100.0

Table 4: Blood donors' screening results

Screening with HbsAg, Anti HCV and HIV-AIDS	**Frequency**	**%age**
Positive	9	4.7
Negative	181	95.3
Total	190	100.0
Screening Results	*n* = 6	
HbsAg	3	33.3
Anti HCV	6	66.7
Anti HIV	0	0.0

Table 4 indicates that out of 190 blood donors who were screened for HbsAg, Anti HCV and HIV-AIDS, 9(4.7%) were found positive. Results further confirmed that among the positive cases, 3(33.3%) were positive for HbsAg and 6(66.7%) were Anti HCV positive.

Fig. 1: Blood donors' age

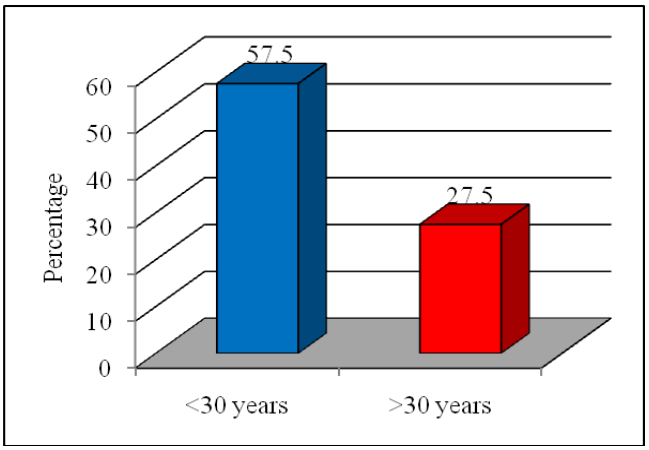
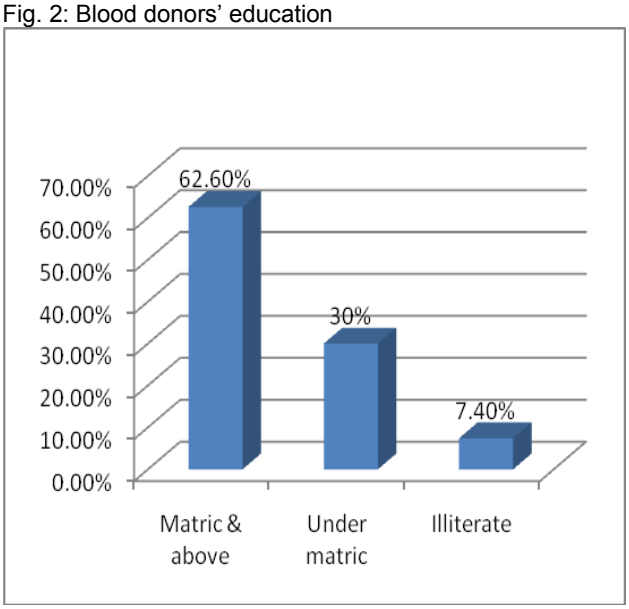


Fig. 2: Blood donors' education



DISCUSSION

The leading cause of prevalence of hepatitis B and C and HIV infection in developing countries including Pakistan is unscreened blood transfusion. Each year, several people die caused by these diseases. Thus, to protect people from ill effects of such diseases, current research was undertaken regarding frequency of hepatitis B, C and HIV among blood donors at Blood Bank of Lahore General Hospital, Lahore. To acquire proper results, 190 blood donors were included in this study. Study indicated that only 30% blood donors were upto 30 years old while significant majority (70%) was more than thirty years old. A study conducted in Nigeria by Umeora and coworkers (2005) concluded that (87.4%) were the majority of blood donors while candidates having >30 years of age were (12.6%)[11].

Role of education can never be underestimated because it provides knowledge in adopting safety measures when blood is donated or received. It is significant to mention that mainstream (92.6%) of blood donors were literate and only 7.4% were illiterate. A study done by Malik and colleagues (2010) among Pakistani blood donors also reported that 66.0% were literate and 34.0% blood donors were illiterate.[12] The results of our study confirmed that major proportion (67.4%) of blood donors were married and 32.6% were single. While the results of the study performed by Farshadpour and associates (2016) also indicated that most of the blood donors (81.5%) were married and only 18.5% were single[13].

During study medical history of the blood donors was reviewed, study showed that only 3.2% had history of jaundice. The results of our study are better because Brandão and Fuchs (2002) confirmed that 9.6% blood donors had history of jaundice.[14] Study further disclosed that 6.8%, 7.9% and 29.5% blood donors had history of blood transfusion, surgical procedure and dental treatment, respectively. The findings of our study showed better situation than the study performed by Raof (2015) who elucidated that 62.5%, 10.5% and 57.1% had history of blood transfusion, surgical procedure and dental procedure, respectively[15].

Results of our study also indicated that more than half of the blood donors visited community barber to make shave. In our study only 1.1% and 0.5% blood donors had drug history and extra marital relationship. The results of our study were found better than the study results carried out by Awadalla and partners (2011) who asserted that 5.9% and 8.5% blood donors had history of drug addiction and extra marital relationship, respectively[16].

According to screening results, study confirmed that 9 blood donors were positive and among them, 3(33.3%) were positive for HbsAg and 6(66.7%) were anti HCV positive while none of them was HIV positive. Our results are fairly more convincing than the study carried out by Ymele and assistants (2012) who confirmed that among the blood donors, 565(12.1%) had HBV, 206(4.44%) had HIV and 67(1.46%) had HCV infection[17].

CONCLUSION

Among Pakistani population, the incidence of Hep-B, C and HIV is speedily escalating while blood donors

are the leading cause of these infections. Study found that major proportion of blood donors were married and more than 30 years old. A little portion had history of jaundice, blood transfusion and surgical procedures while history of dental treatment and treatment from quack were found in almost one-third of respondents. Shaving from community barber was more prevalent. Study concluded that no HIV positive case was detected while HbsAg was positive in three and Anti HIV was positive in six blood donors. Further studies are needed on vast level to assess the hepatitis B, C and HIV prevalence among blood donors.

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