



CODEN [USA]: IAJPBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF  
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.1248865>Available online at: <http://www.iajps.com>

Research Article

**PREVALANCE OF HBV, HCV AND HIV IN PUNJAB: A CASE STUDY ON LAB FINDINGS OF PEOPLE DONATING ORGANS**<sup>1</sup>Dr. Humaira Atta Ullah, <sup>2</sup>Dr. Muhammad Adnan Shahid, <sup>3</sup>Dr. Muhammad Awais Tahir<sup>1</sup>Punjab Medical College Faisalabad, Pakistan.<sup>2</sup>Independent Medical College Faisalabad, Pakistan.<sup>3</sup>Punjab Medical College Faisalabad, Pakistan.**Abstract:**

**Objective:** The comparison of the Hepatitis B prevalence, human immunodeficiency virus (HIV) and hepatitis C in a voluntary replacement and non-remunerated donors in Allied Hospital Faisalabad Blood Transfusion Services. The research was completed in the period of 14 months from January 2016 to February 2017.

**Setting:** The setting of the research was the tertiary healthcare Blood transfusion service in the adjoining area of Punjab.

**Method:** We enrolled 3430 blood donors; among these donors 3187 pints were replacement donors (92.9%) and 243 pints (7.1%) were voluntary non-remunerated. Both the groups were screened for the hepatitis B surface antigen (HBsAg), HIV1/2 antibody and hepatitis C virus (HCV) antibody with the help of an automated random access AXSYM that utilized the technology (MEIA).

**Results:** HBsAg prevalence, HIV 1/2 antibody and HCV antibody in replacement donors (3187) was respectively observed as 2.51%, 0.25% and 5.14%. In the 243 voluntary non-remunerated donors of blood the same prevalence was observed as 0.82%, zero % and 2.46% respectively.

**Conclusion:** HBsAg, HIV antibody and HCV antibody prevalence were less in the voluntary non-remunerated blood donors when compared with the donors of replacement. The major source of blood in Pakistan is replacement donors, we need to shift to the voluntary non-remunerated blood donors. The safe blood in Pakistan can be achieved through this way in the prevalent circumstances of Pakistan.

**Key Words:** Hepatitis B, Blood donors, Hepatitis C and HIV.

**Corresponding author:**

**Dr. Humaira Atta Ullah,**  
Punjab Medical College,  
Faisalabad, Pakistan

QR code



Please cite this article in press Humaira Atta Ullah *et al.*, *Prevalance Of HBV, HCV and HIV in Punjab: A Case Study on Lab Findings Of People Donating Organs*, *Indo Am. J. P. Sci*, 2018; 05(05).

**INTRODUCTION:**

Every year in Pakistan above 1.5 million blood pints are gathered. Major blood source was (65%) is collected through the donors and paid or professional donors contribute in this about ten percent. In the blood donors about twenty-five percent are volunteer non-remunerated donors of blood. A number of replacement donors are the friends and relatives of the patients. They normally donate blood in emergency or in family pressure. Sometimes, there is no alternative except these to save the life of the patients [1]. Resultantly, donors unwilling to donate blood complain about their health and also complain about the previous history of the medical, they also find professional blood donors and present them as the relative to the hospital management in order to donate the blood. They form up mafia of blood donation in the private or public sector; these donors also pose a threat of the HIV, Hepatitis B & C [2].

Blood banks pressurize the doctors, patients and nurses and pressurized them to send donors for the management of the blood stocks. Due to gap of the legislation about the blood collection in a safe way the donation becomes easier when the donors approach the blood banks on their doorsteps. No effort has been observed in the collection of blood through voluntary non-remunerated donors of blood. Media and government do not extend any support to the blood banks regarding this issue, it acts in the way of an impediment for the voluntary donor's enrollment.

In the same way the problems are with the screening bags as they are of low quality and sensitive which are prone to negative outcomes; which results in the transfusion to the patients. Low quality blood transfusion is a result of the financial constraint another reason behind the low quality is non-standardized screening kits [3].

It is internationally recognized that transfusion prevalence and disease transmission is much lower than in non-remunerated healthy voluntary donors of blood. In the consideration of facts for the surety of the supply of blood the best available option is criteria selection of the donor. The best available option that is available to increase the volunteer number is through the non-remunerated voluntary donors.

The objective of the research was the evaluation of various disease groups in the both groups of age in the selected population of this research. The importance of this research lied in the increasing the number of voluntary donors.

**SUBJECTS AND METHODS:**

A criterion of the American Association of Blood Banks (AABB) was used by the research in order to follow the strict policies for the blood collection. We considered the following the factors for the donors whether professional, relatives or paid in the collection of blood: The age was in the range of 18 – 60 years Weight above 50 kilograms. Hemoglobin was observed as above 13.5 g/dl in males and above 12.5 g/dl in females

Systolic Blood Pressure was observed as 100 – 180 mm (Hg) and Diastolic blood pressure was observed as 60 – 100 mm (Hg). The undermentioned reasons were considered as dreadful on the basis of the deferral and history:

Jaundice after ten years of age history, last six-month jaundice close contact history, major illness history, blood transfusion and surgery history, last three years tooth extraction history, last week immunization history and drug intake such as antibiotics history.

To increase non-remunerated voluntary blood donors, we organized 2 camps for the collection of blood. We aimed the awareness enhancement through motivating and distribution of the reading material about the donation of blood such as posters, brochures, banners and leaflets in the medical students, general public and employees for the donation of blood [4]. All the volunteers who were healthy and short listed through criteria of AABB were replacement donors; although, age relaxation and weight are to be taken after the donor's motivation in the range of the age 17 – 62 years and the range of the age was in the limit of forty-five years; only these cases were permitted to donate blood. All those donors were considered as the replacement donors which were presented to the blood bank by the relative or the family members of the patents. Few of the incentives which are nonrealistic were extended to the blood donors such as nutritional health checkup, refreshment, free serum cholesterol, glucose tests and triglyceride [5].

Triple blood bags were used for the collection of the blood from the both types of donors. These all bags were fractionated into packed cells, fresh frozen plasma and platelets concentrate with the help of closed system. Screening for HCV antibody, HBsAg and HIV 1/2 antibody was carried out through the random-access Abbott's AXSYM through MEIA technology which produces effective outcomes. External and internal assurance of the quality assurance (NRL Australia) was used for the reproduce able and accurate outcomes with the help of a well calibrated (AXSYM) equipment.

We gathered data and feed into the software of Automated Blood Bank System. Comparison was made through Z – test to differentiate among the

proportions of the HBV, HIV and HCV prevalence among various donors. The p-values were also calculated at the CI as 95% to measure the variation in the both groups.

**Table – I:** Age distribution of Blood Donors

Age (years) donors (%)	Number of replacement donors (%)	Number of voluntary
17-25	1304 (40.92)	135(55.55)
26-35	1243 (39.0)	47(19.34)
36-45	489 (15.34)	38 (15.64)
46-62	151 (4.74)	23 (9.47)

**Table – II:** Positivity of HBsAg, HCV and HIV in Blood Donors

	Replacement/Hidden Paid Donors N = 3187	Voluntary Donors N = 243	P value	95% CI
	Number (%)	Number (%)		
HBsAg	80 (2.51)	2 (0.82)	0.048	-0.29 - 3.68
Anti-HCV	164 (5.14)	6 (2.46)	0.03	-0.14 - 5.5
Anti-HIV	8 (0.25)	0 (zero)	0.21	-0.37 - 0.87
TOTAL	252 (7.9)	8 (3.28)	0.004	1.17 - 8.07

### RESULTS:

We enrolled 3430 blood donors; among these donors 3187 pints were replacement donors (92.9%) and 243 pints (7.1%) were voluntary non-remunerated. Both the groups were screened for the hepatitis B surface antigen (HBsAg), HIV1/2 antibody and hepatitis C virus (HCV) antibody with the help of an automated random access AXSYM that utilized the technology (MEIA). HBsAg prevalence, HIV 1/2 antibody and HCV antibody in replacement donors (3187) was respectively observed as 2.51%, 0.25% and 5.14%. In the 243 voluntary non-remunerated donors of blood the same prevalence was observed as 0.82%, zero % and 2.46% respectively. Ratio of males and females was observed as 3090 males (96.96%) and 97 females (3.04%); the mean age was observed as (30.37 years). Ten percent deferral rate was observed among the donors in terms of physical assessment and history. In the 243 donors (which was 7.1 % of the total), 188 were males (77.37 %) and 55 were females (22.63%) and mean age was observed as (26.77 years). These donors were observed with a deferral rate of 5.8 %. The major reasons behind the deferral were low hemoglobin and underweight. The value of hemoglobin in females and males was observed as < 13.5g/dl and < 12gm/dl respectively.

The distribution of the volunteer and replacement donors showed a young age factor in the volunteer donors as shown in Table – I. Significant higher

percentage of positive viruses in pain and replacement donors. We observed hidden/replacement and volunteer donors respectively as 7.9% and 3.28% in HIV, Hepatitis B & C as shown in Table – II.

### DISCUSSION:

We observed in this research that HIV, HBV and HCV was observed high in the hidden, replacement and volunteer donors. In the presence of high rate of deferral on physical assessment and history under the strict monitoring was observed for donor selection in this research [6]. We observed significant statistical values of HIV, HBV and HCV antibodies against aggregate of the both groups. In the individual analysis of the cases significant p-values were observed about HCV antibodies and HBsAg which revealed higher disease prevalence in the hidden/replacement donors than the volunteer donors. In the population of our research antibodies of HIV in our research was observed low in the disease prevalence [7].

The healthy voluntary non-remunerated donors of blood were free to choose the donation of the blood without any compulsion; transfusion-transmitted diseases prevalence was observed very low in these cases which has been also stated in many of the other research studies. In the presence of any risk factor the blood donation was not made which has been

observed vice versa in the hidden replacement donors [8].

Main source of the blood are blood banks and large number of blood bags refers to increased work on the staff of the blood bank which makes the healthcare costly. We need to change the blood source in the setting of Pakistan and healthy donors are to be encouraged; same has been reflected in our research results in the sero prevalence of hepatitis B, C and HIV [9]. The same was observed very low in volunteer donors against hidden and replacement donors. To achieve a safe blood in the non-availability of confirmatory and screening tests we need to rely on the healthy volunteer blood donors. It is suggested to use better criteria selection of the donor of blood [10]. Doubtful physical examination and history should be avoided. Blood banks should be directed to collect blood from the non-remunerated voluntary blood donors through general public awareness and motivation. Blood banks can shift to volunteer donors instead of hidden and replacement donors through this strategy [11].

Regulations have been passed through provincial and federal governments for the safe transfusion of the blood but its true implementations are still awaited. A ban is required for the unauthorized blood banks and their bi-products [12]. Blood banks and agencies that collect blood need to be registered. Only those blood banks should be encouraged who fulfil the policies and selection criteria for the collection of blood. Standardized collection, registration, storage and treatment of the blood is to be encouraged. International screening standards about the bags for HBsAg, HIV antibodies and HCV antibody through kits those are sensitive [13].

An important role can be played through media to spread awareness about the blood transfusion to eliminate mall practice in the blood transfusion for the elimination of the misconceptions related to the donation of blood [14]. There is a need in the private and public sector about the collection and distribution of the blood as and when required. Government assistance is required for the evolvement of the non-fragmented and uniform for the national safe policy of the transfusion of blood. Our aim was to change blood source and cent percent collection of blood from non-remunerated voluntary donors of blood with a mandatory blood screening [15].

#### CONCLUSION:

HBsAg, HIV antibody and HCV antibody prevalence were less in the voluntary non-remunerated blood donors when compared with the donors of

replacement. The major source of blood in Pakistan is replacement donors, we need to shift to the voluntary non-remunerated blood donors. The safe blood in Pakistan can be achieved through this way in the prevalent circumstances of Pakistan. Government assistance is required for the evolvement of the non-fragmented and uniform for the national safe policy of the transfusion of blood. Our aim was to change blood source and cent percent collection of blood from non-remunerated voluntary donors of blood with a mandatory blood screening. Motivation and general awareness in the community can best be spreads through media.

#### REFERENCES:

1. Babanejad, M., et al., The HBsAg Prevalence among blood donors from Eastern Mediterranean and Middle Eastern countries: a systematic review and meta-Analysis. *Hepatitis monthly*, 2016. 16(3).
2. Gharehdaghi, J., et al., Prevalence of HCV, HBV, and HIV Seropositivity among Cadavers Referred to Autopsy Hall of Legal Medicine Bureau of Tehran, Iran. *Advances in preventive medicine*, 2017. 2017.
3. Akhtar, H., et al., Prevalence of hepatitis B and hepatitis C Virus infections among male to female (MFT) transgenders in Rawalpindi (Pakistan). *Advancements in Life Sciences*, 2018. 5(2): p. 46-55.
4. Niazi, S.K., et al., NUCLEIC ACID AMPLIFICATION TEST FOR DETECTION OF WEST NILE VIRUS INFECTION IN PAKISTANI BLOOD DONORS. *Journal of Ayub Medical College Abbottabad*, 2017. 29(4): p. 547-550.
5. Dhiman, R.K., et al., Tackling the hepatitis C disease burden in Punjab, India. *Journal of clinical and experimental hepatology*, 2016. 6(3): p. 224-232.
6. Agrawal, S., et al., Seroprevalance of hepatitis-c infection in multi-transfused thalassemic children: study from a West Indian tertiary care center. *International Journal of Contemporary Pediatrics*, 2017. 4(5): p. 1871-1874.
7. Morris, J. and P. Darwin, syndrome in the antrum location. *Am J Gastroenterol*, 2017. 112: p. S1490-S1500.
8. Hussain, R., et al., Prevalence of hepatitis b (HBV) infection In pregnant women in district Kohat, Khyber Pakhtunkhwa, Pakistan. 2018.
9. Ashraf, F., et al., HCV IN PUNJAB; ZONAL MOLECULAR DISTRIBUTION. *Professional Medical Journal*, 2015. 22(10).
10. Karim, A.R., et al., Seroprevalence of Hepatitis B, Hepatitis C and Human Immunodeficiency

- Virus Among Multitransfused Thalassaemic Children in Dhaka, Bangladesh. Bangladesh Journal of Child Health, 2014. 37(3): p. 146-153.
11. Firdaus, R., et al., Current molecular methods for the detection of hepatitis C virus in high risk group population: A systematic review. World Journal of Virology, 2015. 4(1): p. 25-32.
  12. Prabdial-Sing, N., et al., Hepatitis C genotype distribution in patient and blood donor samples in South Africa for the period 2008–2012. Journal of viral hepatitis, 2016. 23(11): p. 881-888.
  13. Umar, M., et al., Diagnosis, Management and Prevention of Hepatitis C in Pakistan 2017. Journal of Ayub Medical College Abbottabad, 2017. 28(4 Sup): p. 839-882.
  14. Jadoon, S.M., et al., HEPATITIS B AND HEPATITIS C VIRUS IN WOMEN WITH FIRST PREGNANCY. Journal of Ayub Medical College Abbottabad, 2017. 29(4): p. 614-618.
  15. Abbas, Z. and R. Afzal, Addressing viral hepatitis in Pakistan: not all is gloom and doom. Journal of the College of Physicians and Surgeons Pakistan, 2014. 24(2): p. 75-77.