

FREQUENCY OF HBSAG AND ANTI-HCV IN ASYMPTOMATIC HEALTHY BLOOD DONORS AT HMC, PESHAWAR.

Abdullah, Amjad Zaman, Rahida Karim, Shah Taj Khan, Shabir Ahmad Khan,

ABSTRACT

Background: There is high prevalence of hepatitis B and C in developing Countries like Pakistan. These viruses are the major cause of chronic liver failure in the form of liver cirrhosis. They are also the major risk factors for hepatocellular carcinoma. Because of their mode of transmission through blood and blood products, proper screening of blood for hepatitis B and C is absolutely necessary.

Objective: The objective of this study was to determine the frequency of hepatitis B and C in healthy voluntary blood donor's coming to the blood bank of Hayatabad medical complex, Peshawar.

Subjects and Methods: This descriptive study was carried out at blood bank of Hayatabad medical complex Peshawar from 1st January 2013 to 31-12-2013. All asymptomatic healthy blood donors (n = 15842) presented to the blood bank were screened for HBs Ag and Anti- HCV by ELISA. All the donors were male. The age range was 18 to 55 years.

Results: A total of 15842 blood donors were selected and screened for HBs Ag and Anti- HCV. Out of these 561 (3.54%) were found positive both for hepatitis B and C. Among these positive Cases 293 (1.8%) were positive for HBs Ag and 268(1.69%) were positive for Anti- HCV.

Conclusion: Hepatitis B and C are serious liver diseases which may lead to chronic liver failure in the form of liver cirrhosis. As blood transfusion is an important mode of transmission of hepatitis B and C, all blood donors should be routinely screened for hepatitis B and C by ELISA to control the spread of these viruses.

Key Words: Hbs Ag, Anti-HCV, Blood donors.

INTRODUCTION

Chronic hepatitis B and C are major health problems worldwide, especially in developing countries like Pakistan.¹ These two viruses are not only the major cause of chronic liver failure in the form of liver cirrhosis but also the major risk factors for hepatocellular carcinoma. Currently 170 million people are infected with HCV and 300 million people are infected with HBV worldwide.^{2,3} There are approximately 17-20 million people infected with these viruses in Pakistan⁴.

The main route of transmission of hepatitis B and C viruses are parenteral. Transfusion of unscreened or improperly screened blood is an important mode of transmission of these viruses. Therefore, it has made the screening of blood absolutely necessary. About 92 million of blood donations are collected worldwide each year. Many countries are not able to screen all blood donations for one or more of the blood transfu-

sion transmissible infection (TTIs): HIV, HBV, HCV, and syphilis⁵. In Pakistan over 1.5 million pints of blood is collected each year.⁶

Blood banks are operating both in public and private sector all over the country. Several studies have looked into the prevalence of HBs Ag and Anti- HCV in the healthy blood donors. One of the largest study is by Khattak et al reporting of 103,858 cases. They found prevalence of 3.3 % for HBV and 4% for Anti Hcv⁷. In other studies this has been reported to be 1.9 to 6.5 and 0.27% to 6.2% for hepatitis B and C respectively.^{8,9}

The World Health Organization (WHO) recommendation for safe blood transfusion is provision of compatible blood which are cross matched and screened for HIV, HBs Ag, Anti- HCV, syphilis and malarial parasite.¹⁰ While the health regulatory authorities in Pakistan have made it mandatory to screen all donated blood for hepatitis B, C and HIV, it is not being carried out properly.¹¹

SUBJECTS AND METHODS

This descriptive study was conducted at the blood bank of Hayatabad Medical complex Peshawar, from 1st January 2013 to 31st December 2013. Written informed consent was obtained from all the participating donors. All blood donors were male. The age range was 18 to 55 years. They were thoroughly examined and a detailed history was taken by a medical officer. Selection criteria was age between 18 to 55 years, weight more than 50 Kg, and hemoglobin of more than 12G/dl. Exclusion cri-

Gastroenterology Ward HMC Peshawar, *Physiology Department KGMC, **Paediatric Department HMC, ***Pathology Department HMC, ****Gastroenterology Ward HMC.

Correspondence Author:-

Dr. Abdullah

Gastroenterology: Ward
HMC, Peshawar.

E-Mail Address: drabdullah30@yahoo.com

teria was previous history of viral hepatitis, drugs abuse, blood transfusion in last one year and any evidence of renal, cardiac, pulmonary, or hepatic disease. All the blood donors were screened for HBs Ag, and Anti-HCV by ALISA.

Data was recorded on a specially designed proforma. All data was analyzed using statistical package SPSS 10.0. Descriptive statistics were used. Frequencies and percentages for variables were calculated.

RESULT

Overall 15842 blood donors were screened for

viral hepatitis B and C during the study

period. Out of these 561 (3.54%) were found positive for hepatitis B and C. Among these positive cases 293(1.8%) were positive for HBs Ag and 268(1.69%) were positive for Anti -HCV. All cases were male. The age range was 18 to 55 years with mean age of 30 year.

Monthwise detail of screening is given in table I.

DISCUSSION

Transfusion of contaminated blood with hepatitis B virus (HBV) and hepatitis C virus (HCV) are serious

Table 1. Month wise screening done during the study period 2013.

2013	Total blood donors	HBsAg Positive	Total Blood donors	Anti -HCV Positive
Jan	1285	25 (1.94%)	1285	13 (1%)
Feb	1222	20(1.63%)	1222	17 (1.39%)
March	1369	23 (1.6%)	1369	24 (1.75%)
April	1241	35 92.8%)	1241	28 (2.25%)
May	1315	26 (1.97%)	1315	29 (2.2%)
June	1368	30 (2.19%)	1368	17 (1.24%)
July	1128	20 (1.77%)	1128	26 (2.3%)
August	1305	18 (1.37%)	1305	19 (1.45%)
Sep	1432	25(1.74%)	1432	25 (1.74%)
October	1465	35(2.38%)	1465	41(2.79%)
Nov	1469	18 (1.22%)	1469	8 (0.54%)
Decem	1243	18 (1.44%)	1243	21(1.68%)
Total	15842	293(1.8%)	15842	268(1.69%)

Table.2 prevalence of HeptitsB&C among healthy blood reported in the different cities of Pakistan.

Author & Year	Place of study	Anti HCV	HBs Ag
Khattak MF et al 2002 ⁷	AFIT, Rawalpindi	4%	3.3%
Mumtaz S et al 2002 ⁹	Islambad international medical college Rawalpindi	6.21%	5.86%
Fayyaz S KM et al 2002 ¹²	Qauad-e- Azam Medical College, Bahawalpur.	-	7.53%
Ali N et al 2003 ¹³	CMH, Quetta	1.87%	-
Zaidi A et al 2004 ¹¹	Hayatabad, Medical Complex Peshawar.	1.34%	1.46%
Mehmood MA et al 2004 ¹⁴	Nishteer Medical college/Hospital Multan	0.27%	3.37%
Aisf N et all 2004 ⁸	Shifa International Hospital, Islamabad	5.14%	2.51%
Ahmad J et all 2004 ¹⁵	Rehman Medical Institute, Peshawar.	2.2%	1.9%
Ahmad Z et all 2005 ¹⁶	Shaikh Zayed Postgraduate medical institute Lahore	4.16%	3.36%
Ujjan ID et all 2006 ¹⁷	Isra university hospital, Hyderabad	8.68%	3.65%
Aziz MS 2006 ¹⁸	DHQ hospital Skurdu	1.1%	8.4%
Azam M et all 2007 ¹⁹	Baqai Medical university, Karachi	4.36%	4.5%
Ijaz AU et all 2007 ²⁰	Ghurki trust teaching hospital, Lahore.	5.345	1.52%
Chaudhary IA et all 2006 ²¹	Fauji foundation hospital, Rawalpindi	2.52%	2.45%
Present study	HMC, Peshawar	1.69%	1.8%

complications of blood transfusion resulting in hepatitis B and C which may lead to chronic liver failure in the form of cirrhosis of liver. Prevention of transfusion transmitted infection such as HBV, HCV, HIV, syphilis and malarial parasite in developed countries have been achieved by reducing unnecessary blood transfusions, excluding donors with specific risk factors and systematic screening of all donated blood for infection. On the other hand, in many developing countries none of these measures are applied uniformly and the risk of transfusion transmitted infection remains high.¹⁰

The main source of blood donation in our country is the replacement donors and the majority of them are patient's relatives or friends¹⁵. Proper selection of donors and proper screening of blood is very important to ensure a safe blood transfusion. Prevalence of HBV and HCV are higher in hidden paid or professional donors.⁸ The aim of our study was to determine serofrequency of hepatitis B and C in asymptomatic healthy voluntary blood donors. The best way of getting the safe blood for transfusion is proper donor selection and proper screening of blood.

Our study shows serofrequency of 1.8% for HBsAg and 1.69% for Anti-HCV. There is variation in prevalence of hepatitis B and C in healthy blood donors in different cities of Pakistan. The prevalence of Hepatitis B range from 1.52% (Ghurki trust teaching hospital, Lahore) to 8.4% (DHQ hospital skardu) and hepatitis C from 0.27% (Nishter Medical College Multan) to 8.68% (Isra university hospital, Hyderabad). Table 2

Seroprevalence rates of HBsAg and anti-HCV varies in different countries. Prevalence of HBsAg was found 3.4% in Georgia, 1.5% in Kingdom of Saudi Arabia, 4.3% in Egypt, 1.38% in Turkey, 0.82% in Nepal and 3.3% in Brazil. On the other hand the prevalence of anti-HCV in the same countries was found to be 6.9%, 0.4%, 2.7%, 0.35%, 0.47% and 5.9% respectively²²⁻²⁶.

In our study the frequency of both hepatitis B and C is less. This is probably due to better public awareness regarding the mode of transmission of hepatitis B and C such as not sharing razors, use of disposable syringes and proper blood screening for transfusion of blood.

CONCLUSION

Blood is one of the main source of transmission of Hepatitis B and C, so proper screening of blood for hepatitis B and C should be done by ELISA to minimize their spread. Professional blood donors should be discouraged and the masses should be educated regarding the mode of transmission of hepatitis B and C.

REFERENCES.

1. Shah Hn, Shabbir G. A review of published literature on hepatitis B&C virus prevalence in Pakistan. J Coll

Physicians surg Pak 2002 12:368-71.

2. Bonkovsky HL, Mehta S review and update J Am Acad dermatol 2001; 44:159-79.
3. Anonymous, EASL International consensus conference on Hepatitis B 13, 14th september 2002 Geneva. Switzerland. J Hepatol 2003; 38:533-40
4. Zuberi Z. Hepatitis B: Pakistan perspective: national consensus conference on guidelines for Hepatitis B & C, Karachi, Aug 2003.
5. WHO Global Database on Blood safety (GDBS) 2011.
6. Mujeeb SA Donation of blood in Pakistan: Risk and resources, Blood Transfusion. A Technical and clinical care. Karachi, 1998: pp 1-8.
7. Khattak MF, Salamat N, Bhatti FA, Qureshi TZ, Seroprevalence of Hepatitis B, C and HIV in blood donors in Northern Pakistan. J Pak Med Assoc 2002;52:398-402.
8. Asif N, Khokhar N, Illahi F. Seroprevalence of HBV, HCV and HIV infection among voluntary non remunerated and replacement donors in Northern Pakistan. Pak J Med Sci 2004;20:24-8
9. Mumtaz S, Rehman M, Muzaffar M, Hassan M, Iqbal W. Frequency of seropositive blood donors for hepatitis B, C and HIV viruses in Railway hospital Rawalpindi. Pakistan J Med Res 2002;41: 51-3.
10. Dipta TF, MD Rehman T. Safe blood transfusion: Past, present and future, Bangladesh J Pathol 2009; 1:2
11. Zaidi A, Tariq WZ, Haider KA, Ali L, Sattar A, Faqeer F, Rehman S. Seroprevalence of Hepatitis B, C and HIV in Healthy Blood donors in Northwest of Pakistan. Pak J Pathol 2004;15: 11-6
12. Fayyaz KM, Ali S, Khan AA, Shafique M, Majeed S. Hepatitis B carrier among volunteer blood donor students at Quid-i-Azam Medical college Bahawalpur. Professional Med J 2002;9(3):186-90.
13. Ali N, Nadeem M, Qamar A, Qureshi AH, Ejaz A. Frequency of hepatitis C virus antibodies in blood donors in Combined Military Hospital Quetta. Pak J Med Sci 2003;19(1):41-4.
14. Mehmood MA, Khawar S, Anjum H, Ahmad SM, Rafique S, Nazir I. Prevalence of hepatitis B, C and HIV infection in blood donors of Multan region. Ann King Edward Med Coll 2004;10(4):459-61.
15. Ahmad J, Taj AS, Rahim A, Shah A, Rehman M. Frequency of Hepatitis B and Hepatitis C in healthy blood donors of NWFP. A single center experience. J postgrad Med Inst 2004;18(3):343-52.
16. Ahmed Z, Naeem MS, Shah WH, Hussain A, Chohan RA. Frequency of Hepatitis B, C and Human Immunodeficiency Virus in blood donors at Sheikh Zayed Hospital, Lahore. Proceeding Sheikh Zayed Postgrad Med Inst 2005;19(1):33-6.
17. Ujjan ID, Memon RA, Butt AR, Sheikh IA, Khokhar GN, Yousafani GM, Farooq M. Seroprevalence of HBsAg and anti-HCV in healthy blood donors Pak J

- Gastroenterol 2006;20(1):75–7.
18. Aziz MS. Prevalence of anti Hepatitis C antibodies and Hepatitis B surface antigen in healthy blood donors in Baltistan. Pak Armed Forces Med J 2006;56(2):189–91.
 19. Azam M, Jamal N, Imtiaz F, Haque Z, Ayoob Z. Blood donor screening for hepatitis and HIV. J Dow Univ Health Sci 2007;1(2):82–3.
 20. Ijaz AU, Shafiq F, Toosi NA, Malik MN, Qadeer R. Hepatitis B and Hepatitis C in blood donors: Analysis of 2- years data. Ann king Edward Med Coll 2007;13(1):59–61.
 21. Chaudhary IA, Ullah S, Khan SS, Masood R, Sardar MA, Malhi AA. Seroprevalence of Hepatitis B and C among the healthy blood donors at Fauji Foundation hospital, Rawalpindi. Pak J Med Sci 2007;23(1):64–7.
 22. Busfsahvli M. Tsertsvadze T. Mc nurt LA. Kamkamid-zeG. Gvetadze R. Badridze N. Prevalence of hepatitis B, heptatis C syphilis and HiVin Gerogian Blood donors Eur J Epidemiol 2001;17:693-5.
 23. El-Hazmi MM. Prevalence of HBV, HIV–1, 2 and HTLV1/3 infections among blood donors in a tertiary hospital in the central region of Saudi Arabia. Saudi Med J 2004;25:26–33
 24. El-Gilany AH, El-Fidawy S. Blood born infections among student voluntary blood in Mansoura University, Egypt. East Mediterr Health J 2006;12:742–8.
 25. Afsar I, Gungor S, Sener Ag, Yurtsever SG. The prevalence of HBV, HCV and HIV infections among blood donors in Lzmir, Turkey, Indian J Med Microbiol 2008;26:288–9.
 26. Braga WS, Silva EB, Souza RA, Tosta CE. Seroprevalence of hepatitis B and malaria infection in Labrea, Brazilian western Amazon: estimates of coinfection rates. Rev Soc Bras Med Trop 2005 ;38 (30) :218 –23

ONLINE SUBMISSION OF MANUSCRIPT

It is mandatory to submit the manuscripts at the following website of KJMS. It is quick, convenient, cheap, requirement of HEC and Paperless.

Website: www.kjms.com.pk

The intending writers are expected to first register themselves on the website and follow the instructions on the website. Author agreement can be easily downloaded from our website. A duly signed author agreement must accompany initial submission of the manuscript.