

KNOWLEDGE ABOUT CAUSATIVE AGENTS, TRANSMISSION AND PREVENTION OF HEPATITIS B, C AND HIV AMONG BLOOD DONORS

Mohammed Razzaq Malik¹, Mohammed Yar Malik¹, Zaffar Iqbal,² Mohammed Sharif Akhtar¹

ABSTRACT

Background: Hepatitis B, C and (Human Immunodeficiency Virus) HIV viral infections are serious global public health problems. **Objectives:** To assess the knowledge about causative agents, transmission and prevention of hepatitis B, C and HIV among blood donors. **Patients and Method:** This descriptive study was conducted at the blood bank of Lady Wellington Hospital, Lahore in the month of December 2008. 500 subjects were included in this study, after taking informed consent. A structured questionnaire was used for interviewing the blood donors. **Result:** The mean age of the participants was 32.4 ± 4.2 years. Among 500 volunteer blood donors, 96.6% were males and 3.4% females. More people have heard about HIV (82 %) than HCV (74 %) and HBV (64 %). About half of the study participants knew that hepatitis B and C mainly affect the liver. 62 % individuals correctly answered about the spread of HIV through unsafe sex. As compared to this, 39 % and 29 % of the individuals knew that hepatitis B and C respectively spread through unsterilized syringes used for injections. Many subjects (about 80 %) did not know that all these diseases are caused by viruses. **Conclusion:** Knowledge about hepatitis B, C and HIV infections was inadequate among study population.

Key Words: Hepatitis, HIV, Blood Donors.

INTRODUCTION

Hepatitis B, C and (Human Immunodeficiency Virus) HIV viral infections are serious global public health problems. World wide, two billion people have been infected with the hepatitis B virus (HBV) and more than 350 million have chronic, lifelong infections.¹ An estimated 170 million people are chronically infected with hepatitis C virus and 3 - 4 million people are newly infected each year.² At the end of 2007, there were 33.2 million individuals living with HIV infection.³ The National AIDS Program's latest figures showed that over 4,000 HIV cases have so far been reported since 1986, but UN and government estimates put the number of HIV/AIDS cases around 97,000 ranging from 46,000 to 210,000. However, more realistic estimates (based on actual surveillance figures) suggest that this number may be closer to 40,000 45,000.⁴ The over all prevalence of HIV infection in adults aged 15 to 49 is 0.1%.⁵ HIV epidemic evolves in three phases. First phase is low prevalence, when prevalence of the disease is less

than 5% in any high risk group of the country. Second phase is concentrated epidemic when proportion of infected people in any high risk group rises more than 5%. Third and last phase of epidemic is generalized epidemic, when the prevalence of HIV infection rises over 1% among blood donor or pregnant women. Current data suggests that Pakistan has a concentrated epidemic among injection drug users in most cities and among male sex workers in a few cities.⁶ HIV spreads faster among those who have unprotected sex with multiple partners (especially if they have untreated Sexually Transmitted Infections-STIs), who engage in risky sexual practices and who share injecting equipment (syringes and needles) with other people. Impact of infectious diseases is most severe among the poorest people who have limited or no access to health care.⁴ People infected with one infectious disease are more susceptible to other infections.⁵ In northern Pakistan, 3.3% of healthy blood donors were HBsAg positive, 4.0% were anti-HCV positive and 0.007% were anti-HIV positive.⁷

Hepatitis B, C and HIV infections spread mainly through blood, unprotected sex and perinatal route. Tattooing, selling blood, usage of unsafe dental equipment, ear and nose piercing make population vulnerable to these infections. Risk of transmission increases among persons who are given unsterilized therapeutic injections and in patients on haemodialysis.⁸ High prevalence is found in the middle-aged persons.⁹ All of these three infections which can ultimately lead to incurable fatal diseases, are preventable. People will adopt preventive

1. Department of Community Medicine, Sheikh Zayed Medical College/Hospital, Rahim Yar Khan.

2. Department of Orthopedic, Sheikh Zayed Medical College/Hospital, Rahim Yar Khan.

Correspondence: Muhammad Razzaq Malik
Assistant professor, Community Medicine

Cell No . 0300-4156146

Email: mailsi58@yahoo.com

measures, if they would have knowledge of these diseases and their serious consequences. Only 45 per cent of Pakistani adolescents surveyed in 14 districts knew about HIV/AIDS.¹⁰ Prevention is the safeguard against the epidemics of these diseases. The best way to prevent these viral diseases is to avoid the practices that lead to their transmission. Having knowledge about these diseases can lead to positive attitudes and behaviors, which is critical to prevent the spread of these infections. Blood donation is an important part of society and usually donors are diagnosed with these diseases during screening. We conducted this study to assess the knowledge of blood donors about these infections, especially regarding the causative agents, mode of transmission and preventive measures required.

PATIENTS AND METHODS

This descriptive study was conducted at the blood bank of Lady Wellington Hospital Lahore, during the month of December 2008. Five hundred consecutive blood donors were included. Informed consent was taken from every subject. A pre designed questionnaire was filled from each study subject. The questionnaire included demographic profile like participant's age, sex and education status. Education status was divided into 5 groups: Intermediate and above, Matric, Middle, Primary, and illiterate. Questionnaire contained questions regarding basic knowledge of Hepatitis B, C and HIV infections, their causative organisms, their route of transmission, the organ of the body affected by these viruses and the preventive measures which should be adopted. Participants were also asked about the source from where they got the information about these infections.

Data was analyzed on SPSS 14 software. The quantitative data was recorded as mean and standard deviation, and qualitative data as percentages.

RESULTS

In this study, 500 volunteer blood donors were interviewed. The mean age of the participants was 32.4 ± 4.2 years. Other demographic features are shown in Table I. Majority of the participants (69%) belonged to urban areas and the rest (31%) belonged to rural localities.

Most of the study subjects got information about these diseases from media (HBV, 68 %; HCV, 68 %; HIV, 58 %). Rest of the subjects got information from health professionals including doctors, hakims and Lady Health Workers (HBV, 18 %; HCV, 17 %; HIV, 17 %) and family or friends (HBV, 14 %; HCV, 14 %; HIV, 6 %). 41% of the study subjects were not able to differentiate Hepatitis B and C as separate diseases.

Although, many participants had heard about these diseases, most of them did not know that these were caused by viruses. Only 17% of study subjects knew that Hepatitis B is viral in origin, 21% knew that Hepatitis C is a viral disease, and 19% knew that HIV is caused by a virus. Only 4.4 % knew that HIV affected the immune system. Apart from sexual transmission (in case of HIV), most of the people did not know about mode of transmission of these viruses. Similarly, 64 % of people knew that safe sex could prevent transmission of HIV; however, knowledge about other methods of transmission was inadequate. Regarding Hepatitis B and C prevention, only 37% and 42% study subjects, respectively, knew the use of disposables syringes as preventive measures (Table II). Similarly, a low percentage of study subjects related good personal hygiene as preventive measure for this diseases (12%, 14% and 20% for HBV, HCV and HIV)

Table I: Demographic profile of study participants n= 500

Gender	Number (%)
Male	483 (96.6)
Female	17 (3.4)
Education status	
Intermediate and above	43 (8.6)
Matric	128 (25.6)
Middle	139 (27.8)
Primary	72 (14.4)
Illiterate	118 (23.6)

DISCUSSION

Hepatitis B, C and HIV infections are emerging worldwide health problems and in Pakistan, the toll of HBV and HCV patients is increasing day by day. The effective vaccine is available only against hepatitis B. All the three diseases run a chronic course causing financial drain of family resources. Awareness about these diseases

is necessary among general public for the effective prevention and control. Our study showed gap in knowledge about causative agents, mode of transmissions and preventive measures regarding hepatitis B, C and HIV infections, among blood

Table II. Distribution by response to question

Questions	HBV	HCV	HIV
	Number (%)	Number (%)	Number (%)
Have you heard about it ?	321 (64.2)	369 (73.8)	411 (82.2)
Virus as the causative organism	88 (17.6)	108 (21.6)	98 (19.6)
Which organ of the body is involved?			
Liver	257 (51.4)	217 (43.4)	-
Immune system	-	-	22 (4.4)
How does it spread?			
Needle prick	195 (39)	143 (28.6)	87 (17.4)
Sexual contact	115 (23)	232 (46.4)	311 (62.2)
Contact with patient	138 (27.6)	109 (21.8)	89 (17.8)
What are preventive measures?			
Using disposable syringes	210 (42.0)	187 (37.4)	67 (13.4)
Safe sex	179 (35.8)	216 (43.2)	319 (63.8)
Personal hygiene	59 (11.8)	71 (14.2)	99 (19.8)

donors.

Although many participants had heard about these diseases (HBV; 64.2%, HCV; 73.8%, HIV; 82.2%), most of them did not know that these were caused by viruses (HBV; 17.6%, HCV; 21.6%, HIV; 19.6%), only 4.4 % knew that HIV affects the immune system, whereas, 51% knew that HBV affects the liver as compared to 43% who knew that HCV affects the liver. (Table II) Apart from sexual transmission in case of HIV, most of

the people did not know about mode of transmission of these viruses. Similarly, 64 % people knew that safe sex could prevent transmission of HIV; otherwise, knowledge about preventive measures for these diseases also was not adequate. Relatively, more study subjects related safe sex as preventive measure for HIV (63.8%) as compared to HBV (35.8%) and HCV (43.2%). On the other hand, relatively few study subject's related the use of sterilized syringes as a preventive measure for HIV infection (13.4%) as compared to HBV (42%) and HCV (37.4%). (Table II)

Similar findings have been reported from other centers. Among 96 barbers, who have an important role in transmission of hepatitis B and C, only 13 % knew that these infections affect liver and spread through parenteral route including razors that they use.¹¹ From Central Punjab, 31% healthy men responded that hepatitis B and C are viral diseases which spread through the sharing of needles and syringes (84 %), blood transfusion (70 %) and used blades (26 %).¹² Patients admitted in a public hospital have significant lack of knowledge about hepatitis B and C.¹³ Although 96 % newly admitted first year MBBS students knew that hepatitis B is a disease affecting the liver, but their knowledge about mode of spread and preventive measures for this infection was very poor.¹⁴ Similarly, 61 % of 250 healthcare workers knew all modes of transmission of hepatitis B and C.¹⁵ A study conducted in Iran reported similar findings about knowledge regarding transmission of disease.¹⁶

Our study has revealed similar findings to previous studies that media was the most common source of information about these three infections.¹² We also found that, only a small number of blood donors mentioned use of disposable syringes, sterilized instruments and safe sex as measures for prevention of hepatitis B & C. In Pakistan, due to lack of knowledge, patients showed greater demand for injections even for trivial symptoms, which can be responsible for transmission of Hepatitis B and C.¹⁰ The average number of injections per person per year is 8.5 and 49% of patients receive injections at their first medical visit.¹⁷ Another study from Pakistan, conducted in 18 clinics of peri-urban areas, showed that 94% of injections given did not follow recommended safety protocol.¹⁸

CONCLUSION

Hepatitis B and C are endemic in most parts of the developing countries, while HIV is spreading as an epidemic mainly because of poor knowledge about the problem and its prevention. These infections are preventable by health education, for safe sex, precaution in blood transfusions and the use of disposable syringes and razors. If proper knowledge and information about the preventive measures could be given to blood donors, they could prove to be the effective messengers.

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REFERENCES

1. Hepatitis B. Fact sheet No. 204. Geneva, World Health Organization, 2000 retrieved from <http://www.who.int/mediacentre/factsheets/fs204/en/>, accessed 31 May 2004.
2. Hepatitis C. Fact sheet No. 164. Geneva, World Health Organization, 2000 retrieved from <http://www.who.int/mediacentre/factsheets/fs164/en/>, accessed 31 May 2004.
3. UNAIDS, World Health Organization. Report on the Global AIDS Epidemic. Available from: www.unaids.org/en/knowledgeCentre/HIV_Data/Global_Reports/2008_Global_report.asp.
4. HIV/AIDS. WHO,UNAIDS/07.27E / JC1322E English original, December 2007
5. HIV/AIDS, country profile. Retrieved from http://www.nacp.gov.pk/wpcontent/uploads/2008/02/pakistan_2008_country_progress_report_en.pdf
6. HIV/Aids in Patients Retrieved from; http://en.wikipedia.org/wiki/HIV/AIDS_in_Pakistan.
7. Khattak MF et al. Seroprevalence of hepatitis B, C and HIV in blood donors in northern Pakistan. *J P M A* 2002; 52(9): 398–402.
8. Korenromp EL, Williams BG, de Vlas SJ, Gouws E, Gilks CF, Ghys PD, et al. Malaria attributable to the HIV-1 epidemic, sub-Saharan Africa. *Emerg Infect Dis* 2005; 11(9).
9. Khan AJ. Unsafe injections and the transmission of hepatitis B and C in a periurban community in Pakistan. *Bulletin of the World Health Organization* 2000; 78: 956-63.
10. Iqbal F. Prevalence of hepatitis C in patients on maintenance haemodialysis. *Jour Coll Phys Surg P a k .* 2003,13 (1): 15–8.
11. Bari A Risk factors for hepatitis C virus infection in male adults in Rawalpindi-Islamabad, Pakistan. *Tropical medicine and international health* 2001, 6(9):732–8.
12. Kane A. Transmission of hepatitis B, hepatitis C and human immunodeficiency viruses through unsafe injections in the developing world: model-based regional estimates. *Bulletin of the World Health Organization* 1999; 77:801-7.
13. Janjua N Z, Nizamy MAM. Knowledge and Practices of

