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HEPATITIS B, HEPATITIS C & HIV;
KNOWLEDGE AMONG GENERAL PUBLIC OF PERIPHERAL AREAS OF MULTAN.

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ABSTRACT... **Objective:** To assess the level of knowledge regarding hepatitis B, hepatitis C and HIV among general public of peripheral areas of Multan. **Study design:** Cross-sectional study. **Setting:** Peripheral areas of Multan, village Budhla Sunnat, kusba Ayazabad Marrhal and PMRC Research Centre Nishtar Medical College Multan. **Duration of study**: From 01.05.2007 to 30.04.2008. **Subjects and methods:** Medical camps were established in peripheral areas of Multan, village Budhla Sunnat and kusba Ayazabad Marrhal. It was a cross-sectional study which was carried out using non-probability convenient sampling technique. Subjects of both sexes and adult age attending these medical camps were included in the study. Informed consent was taken and confidentiality of the personal information was ensured. Specially designed Proforma was filled in by the Research Officers and data entered in SPSS-11 and analyzed. **Results:** Three hundred and eight subjects were interviewed. The age of subjects varied from 15-70 years. The mean age was 37.06 years ±15.59 years. Two hundred and twenty three (72.4 %) were familiar with hepatitis B, 196 (63.6%) with hepatitis C and 146 (47.4%) with HIV and 133 (43.2%) were familiar with all three viruses while 81 (26.5%) were unfamiliar with these viruses. Most of the subjects 93 (30.2%) knew about the transmission through injection by un-sterilized syringes, 90 (29.2%) were knowing that infected blood is important source of spread while 87 (28.2%) of the subjects were knowing that these are spread through infected razors, 84 (27.2%) were knowing unsafe sex as a mode of transmission. Sharing objects can be the source of spread was known to very less number of people, 9 (2.9%) were aware that these can spread through sharing infected tooth brushes, 7 (2.3%) with sharing infected “Miswaks” and only 3 (1%) were aware that these can spread through infected combs. Electronic media was the major source of knowledge 82 (26.6%), interpersonal communication 69 (22.4%) and newspapers in only 1 (0.3%). **Conclusion:** knowledge about hepatitis B, hepatitis C and HIV is low in our study population. The results of the study have shown that many people still think that HIV

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is the only virus which is transmitted through sexual contacts and hepatitis B and C through contaminated blood. The knowledge about the modes of transmission is lower in the rural and un-educated community. General public has very little knowledge that infected combs, infected toothbrushes and infected "Miswaks" can also lead to transmission of hepatitis B and C. Electronic media particularly television & radio and newspapers are the main source of knowledge and awareness for the urban population while in rural population it is not the case. Effective health awareness campaigns are needed to be started among rural population.

Keywords: Hepatitis B, Hepatitis C, HIV.

INTRODUCTION

Viral hepatitis is a global issue; especially hepatitis B and C are increasing day by day. HIV is a major threat in Africa and South East Asia. However HIV cases are also being reported from Pakistan[1]. Hepatitis B and C are known as hepatotropic viruses as they directly affect the liver. HIV affects the immune system of the body and poses the affected patient to serious threats. In adults acute hepatitis B usually recovers in 90% of the cases and 10% acquire chronic hepatitis B[2], while chronicity is more marked with hepatitis C virus (HCV).

Hepatitis B virus has infected more than two thousand million people worldwide and there are estimated 350 million carriers [3]. UK and USA have carrier rate (0.5%) and it rises to 10-15% in parts of Africa, Middle East and Far East[2,4]. Study conducted in Pakistan by Khokhar et al has reported prevalence of HBsAg as 2.56%[5].

Throughout the world varying prevalence rates for HCV have been reported. Extremely low anti-HCV prevalence (0.1%) has been reported among blood donors in UK and Scandinavia; a slightly higher prevalence (0.2 to 1 %) has been reported from other European countries, Australia and Northern America; and intermediate prevalence (1.1 to 5%) has been reported in South America, Eastern Europe, Mediterranean countries; the highest prevalence (28%) has been reported in Egypt as cited by Muhammad et al[6].
In Pakistan various studies reported varying prevalence rates for hepatitis C. The prevalence in professional blood donors has ranged from 1.18 % in southern Pakistan to 6.21 % in Northern Parts[7, 8].

Recently PMRC has conducted a national survey on prevalence of hepatitis B and C in general population of Pakistan. The preliminary reports reveal that HBsAg is positive in 2.5% and Anti-HCV in 4.9%. Thus overall positivity for both these viruses is 7.4%. According to this survey about 12 million population of Pakistan is affected by these viruses[9].

HIV infection which can lead to acquired immunodeficiency syndrome (AIDS) was first recognized in USA in 1981. The spectrum of diseases caused by HIV varies from opportunistic infections to malignant neoplasms. The mode of transmission of HIV is similar to that of hepatitis B and C in particular with respect to sexual and parenteral transmission. Sexual route of transmission is more common with HIV. The risk of acquiring HIV infection from a needle stick injury contaminated with infected blood is approximately 1 in 300. Factors which are known to increase transmission include depth of needle penetration, hollowbore needles, invisible blood on the needles and advance stage of the disease in the source[10]. The risk of HIV infection from illicit drug use with sharing of needles from HIV infected source is estimated to be 1 in 150[10]. Transfusion of infected blood exposes the recipient to a risk of 95% transmission. Mother to infant transmission can also occur.

Hepatitis B, C and HIV have not been shown to be transmitted by respiratory droplet spread and by vectors like mosquitoes[10].

Different treatment options and preventive measures are available to control the spread of these viruses. The vaccine is available for hepatitis B. No vaccine is available against hepatitis C and HIV. To curtail a disease in the community, the utmost important is the knowledge of the diseases in that community. The present study was designed to assess the level of basic knowledge about hepatitis B, hepatitis C and HIV in general population of peripheral areas of Multan. This assessment of knowledge will help to develop and plan

the preventive strategies against these dreadful viruses.

SUBJECTS AND METHODS

Medical camps at peripheral areas of Multan at Budhla Sunnat and Ayazabad Murrhal were set up. It was a cross-sectional study which was carried out using non-probability convenient sampling technique. The people and the staff were explained about the purpose of the study. The subjects of either sex and of adult ages were included in this study. Informed consent was taken and confidentiality of the personal information was ensured. Specially designed Proforma was filled in by the Research Officers and data entered in SPSS-11 and analyzed.

RESULTS

Three hundred and eight subjects were interviewed, the age of subjects varied from 15-70 years. The mean age was 37.06 ±15.59 years. Eighty eight (28.6%) were males and 220 (71.4%) were females. Two hundred and sixty five (86.0%) of the subjects were married while 43 (14.0 %) were unmarried. All the subjects were from peripheral areas of Multan. Personal hygiene was also observed. It was poor in 236 (76.6%), satisfactory in 63 (20.5%) and good in only 9 (2.9%) subjects. One hundred eighty five (60.1%) were illiterate, 34 (11.0%) were having non-formal education, 40 (13.0%) primary education, 20 (6.5%) were having middle level education, 26 (8.4%) had secondary level of education and only 3 (1.0%) had higher secondary and above level of education.

Table-I. Level of Education (n=308)

Level of education	No of subjects	%age
Illiterate	185	60.1%
Non formal education	34	11%
Primary education	40	13%
Middle education	20	6.5%
Secondary education	26	8.4%
Higher secondary & above	3	1%

Table-II. Assessment of knowledge about viruses (n=308)

Viruses	No of subjects having knowledge	%age
Knowledge about hepatitis B	223	72.4%
Knowledge about hepatitis C	196	63.6%
Knowledge about HIV	146	47.4%
Knowledge about hepatitis B & C and HIV	133	43.2%
Don't know	81	26.3%

Table-III. Knowledge about modes of transmission (n = 308)

Mode	No of subjects having knowledge about modes of transmission	% age
Un-sterilized syringes	93	30.2%
Contaminated blood	90	29.2%
Infected razors	87	28.2%
Infected knives	85	27.6%
Unsafe sex	84	27.2%
Ear/nose piercing with infected needles	84	27.2%
Tattooing	83	26.9%
Self infliction(matam) with chains	83	26.9%
Dental procedure with Infected instruments	83	26.9%
Infected tooth brushes	9	2.9%
Infected Miswaks	7	2.3%
Infected Combs	3	1%

Table-IV. Source of knowledge (n = 308)		
Sources	**No of subject with source of knowledge**	**%Age**
Electronic media	82	26.6%
Interpersonal communications	69	22.4%
Electronic media and interpersonal communication	51	16.6%
All sources	16	5.2%
Electronic media and newspapers	6	1.9%
Newspaper and interpersonal communication	3	1%
Newspaper	1	0.3%

Knowledge about hepatitis revealed that 223 (72.4%) of the subjects were familiar with hepatitis B, 196 (63.6%) with hepatitis C and 146 (47.4%) with HIV and 133 (43.2%) were familiar with all the three virus while 81 (26.3%) were unfamiliar with these viruses.

As the knowledge about the spread of these viruses was assessed it was found that ninety three (30.2%) knew about their transmission through injection by un-sterilized syringes. Ninety (29.2%) were knowing that these can spread through blood, 83 (26.9%) were having knowledge of their spread through dental procedures with infected instruments, 84 (27.2%) were knowing that these can also spread through unsafe sex. Eighty three (26.9%) were familiar that these can spread by tattooing. Eighty four (27.2%) were knowing that these can also spread by piercing of ear and nose through infected needles. Eighty seven (28.2%) were familiar that these can spread through infected razors. Eighty three (26.9%) were knowing that these can also spread through self infliction as a part of religious activity (matam) with infected sharp chains, 85 (27.6%) were knowing that these can spread through infected knives. Sharing objects can be the source of spread was known to very less number of people, 9 (2.9%) were aware that these can spread through sharing infected tooth brushes, 7 (2.3%) with sharing infected "Miswaks" and only 3 (1%) were aware that these can spread through infected combs.

When these subjects were tested for the source of their knowledge, 82 (26.6%) acquired this through electronic media like television and radio. Sixty nine (22.4%) were having this knowledge through interpersonal communication, 1 (0.3%) through newspaper, 51 (16.6%) through electronic media and interpersonal communication, 6 (1.9 %) acquired the knowledge through electronic media and newspapers, 3 (1.0 %) through news and interpersonal and 16 (5.2%) were having the knowledge from all the sources.

DISCUSSION

Hepatitis B, hepatitis C and HIV are established pathogens through out the world. Hepatitis B and C are common viral infections in Pakistan. HIV cases are also being reported from Pakistan[1]. As we know awareness about the disease is necessary for its prevention and control. It is evident through epidemiological studies that hepatitis B and C viruses are mainly transmitted through parenteral route. The transmission risk of these viruses increases among persons who are given therapeutic injections by un-sterilized syringes, by sharing of infected needles among IV drug abusers, having transfusion of contaminated blood, patients on haemodialysis, having unsafe sex, sharing of items like infected toothbrushes/ "Miswaks", contaminated razors and infected combs, having dental procedure with infected instruments, having endoscopies with un-sterilized instruments, self infliction as a part of religious activity (matam) with infected sharp chains and persons who have their faces or armpits shaved with infected razors used by street barbers [2,3,11]. The cosmetic alterations like body piercing or tattooing done by un-sterilized needles and use of infected tweezers are also threats for transmission of hepatitis viruses.

HIV is mainly transmitted through unsafe sex and IV drug abuse[1]. In present study, as the knowledge about these viruses was assessed, 133 (43.2%) of the study cases were familiar with all three viruses while a study conducted by Memon et al[12], among healthcare workers of tertiary care setting of Karachi about knowledge

attitude and practice on hepatitis B and C revealed that 61% of the subjects were aware about these viruses and their modes of transmission. This reported higher level of knowledge in the study by Memon et al[12] may be due to better level of education and health awareness as their study was conducted among healthcare workers.

As the knowledge about the spread of these viruses was tested, it revealed that 93 (30.2%) of the subjects know that these are spread by the use of un-sterilized syringes. Ninety (29.2%) were knowing the infected blood as mode of transmission and 83 (26.9%) were knowing its spread through dental procedure with infected instruments. Unsafe sex was known to 84 (27.2%) as a risk factor. Eighty three (26.9%) were knowing tattooing as an important mode of transmission. Infected razors, ear/nose piercing and self infliction as a part of religious activity (matam) with infected sharp chains were known to 87 (28.2%), 84 (27.2%), and 83 (26.9%) respectively as important mode of transmission. Sharing infected objects like infected tooth brushes, "Miswaks" and infected combs were known to be as important factors in spread of these viruses, in 9 (2.9%), 7 (2.3%) and 3 (1.0%) of the subjects respectively. A study by Memon et al[12] revealed that 61% of the respondents knew all modes of transmission of hepatitis B and C and 88% were having knowledge that these are spread through parenteral route. A review study on "Unsafe injections in the developing world and transmission of bloodborne pathogens" described conservative estimates of average number of injections per person per year varies from 0.9 to 8.5 with a median of 1.5 injections by Simonsen et al[13]. They also described that highest prevalence was reported from Pakistan[13]. The fact that these viruses are spread through un-sterilized injections was known to 30.2% of the subjects in our study. Khan et al,[14] from their study conducted on female college students revealed that 90% of the girls were knowing that HIV/AIDS is sexually transmitted and the association of hepatitis B and C with contaminated needles was known to 87% and 64% of the subjects respectively and 88% of girls responded that HIV is also spread by contaminated needles. She described that HIV knowledge of the subjects was satisfactory while knowledge about hepatitis B and C was low among the college girls. So we can have observation that many people still think that HIV is the virus transmitted through sexual contacts while they know that hepatitis B and C are spread through contaminated blood. Shah et al,[15] revealed from study on knowledge regarding hepatitis B conducted among EPI vaccinators from Karachi revealed that 47% of the subjects responded that hepatitis B virus is spread through infected blood, 50% responded that it is spread through contaminated needles, 25% responded that it is spread through un-sterilized instruments and only 22% knew that it can also be spread through sexual contacts. The level of knowledge about these viruses reported in the above studies is higher; the difference may be due to the level of education of the study subjects. The study subjects in the above studies were college girls and EPI vaccinators and were having secondary or more level of education while in our study the subjects were from general public of rural community and 61% were illiterate. Khan et al[16] and Simonsen et al[13] have given more weight to the contaminated needles and multiple injections with un-sterilized syringes as mode of spread and study cited by Alam[17] reports that hollow bore needles transmit these viruses more as compared to the other sharp objects and 10-25% injuries occur while re-capping the used needles, so the knowledge about this preventive aspect needs special consideration. It is further pointed out here that under Occupational Safety and Health Administration (OSHA) on blood borne pathogen has prohibited re-capping of the needles[18]. So in general, knowledge about the viruses and their spread was higher among the educated communities as compared to the rural community where the level of education is low and people are more shy and reluctant to answer such special questions. It is stressed and pointed out here that the general public was having very little knowledge that infected combs, infected toothbrushes and infected "Miswaks" can lead to transmission of hepatitis B and C. In our population infected razors are also very important mode of transmission which needs special attention. It is very pertinent to point here that the razors can be sterilized with common house hold bleach. Concentrations ranging from 500ppm (1:100 dilutions of house hold bleach) to 5000ppm (1:10 dilutions of household bleach) for 10 minutes have been found to be effective against HCV[19].

When the subjects were tested for the source of knowledge electronic media 82 (26.2%) and interpersonal communication 69 (22.4%) were the main source of their knowledge in our study. It was evident that 80 (26.5%) of the subjects were not familiar with either hepatitis B,C and HIV. Khan et al[14] in their study described TV as their main source of knowledge in 92% of the respondents.

So it is clear that the electronic media particularly television and newspapers are the main source of knowledge and awareness for the urban population while in rural population it is not the case. So the effective awareness programme must be started in the rural communities. They have poor knowledge that sharing common objects like infected combs, infected tooth brushes, "Miswaks", nail clippers are important modes of spread. More and more stress should be given on these aspects. Health awareness campaigns, medical camps, TV and radio programme on health in local and simple language should be started keeping in view the educational and intellectual level of the community. Schools are the important places where teacher- parents and teacher-students communications can play significant role in the awareness programmes on these common issues. Health care personals, lady health visitors, social workers and non-government organization should be properly made aware about these viruses because they are in direct contact and more friendly with the community and these measures especially interpersonal communications will increase the level of knowledge among that community regarding these dreadful diseases, with fruitful out come. It is suggested that further studies with large sample size should be carried out in rural, urban and high risk population.

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REFERENCES

1. Butt AI. **Determinants of HIV/AIDS awareness among ever married women in Pakistan.** International conference of AIDS 2004(Thailand); 15; Abstract no. D 10901.

2. Sherlock S and Dooley J. **Hepatitis B and Hepatitis Delta Virus.** In : Sherlock S and Dooley J. Eds. Diseases of the liver and biliary system. 11th Edition 2002. 285-303.

3. Ali NS, Jamal K and Qureshi R. **Hepatitis B vaccination status and identification of risk factors for hepatitis B in health care workers.** JCPSP; 2005; 15(5): 257-260.

4. Kumar P and Clark M. Liver, **Biliary tract and Pancreatic diseases.** In: Kumar P and Clark M, Eds. Clinical Medicine. 5th Edition. 2002. 354.

5. Khokhar N, Gill ML and Malik GJ. **General seroprevalence of Hepatitis C and Hepatitis B virus infection in population.** J Coll Physicians Surg Pak 2004; 14(9): 534-36.

6. Muhammad N and Jan MA. **Frequency of hepatitis C in Buner,** NWFP. JCPSP 2005; 15(1): 11-14.

7. Mumtaz S, Rehman MU, Muzaffar M, Hassan MU and Iqbal W. **Frequency of seropositive blood donors for hepatitis B, C and HIV Viruses in railway hospital Rawalpindi.** PJMR 2002:41:51-53.

8. Khattak MF, Salamat N, Bhatti FA, Qureshi TZ. **Seroprevalence of hepatitis B, C and HIV in blood donors in Northern Pakistan.** JPMA: 2002; 52: 398-402.

9. National Survey on **Prevalence of Hepatitis B & C in General Population of Pakistan [online] 2007.** available from URL: http://www.pmrc.org.pk/hepatitisbc.htm

10. Andrew RZ, Metchell HK, HIV infection. In: Mcphee SJ, Papadakis MA, Tierney LM. **Current Medical Diagnosis & Treatment 2007.** 46th Edition. McGraw Hill companies; 1346-1377.

11. Salam A, Yasinzai MM, Taj MH, Das N, Muhammad A. **Prevalence of HBs Ag positive cases.** The Professional 2003; 10(01): 23-25.

12. Memon AR, Sheikh MA, Afsar S, Zubairi BF, Qadeer R, Baloch I. **Hepatitis B vaccination status and knowledge, attitude, practices of health care workers**

(HCWs) regarding hepatitis B and C in a tertiary care setting of Karachi. Infect Dis J Dec 2007; 16 (4):105-7.

13. Simonsen L, Kane A, Liyod J, Zaffran M, Kane M. **Unsafe injections in the developing world and transmission of blood borne pathogens: a review.** Bulletin of the WHO, 1999, 77(10), 789-800.

14. Khan SJ, Anjum Q, Khan NU, Nabi FG. **Awareness about common diseases in selected female college students of Karachi.** J Pak Med Assoc May 2005; 55(5): 195-8.

15. Shah S, Nisar N, Qadri MH. **Knowledge regarding hepatitis B among EPI vaccinators working in district south Karachi.** Pak J Med Sci 2007; 23; 538-541.

16. Khan AJ, Luby SP, Fikree F, Karim A, Obaid S, Dellawala S, Shaper M, Malik T, Hoch SF, McCormick JB. **Unsafe injection and the transmission of hepatitis B and C in a periurban community in Pakistan.** Bulletin of the WHO 2000; 78 (8); 956-963.

17. Alam M. **Knowledge, attitude and practices among health care workers on needle stick injuries.** Annals of Saudi Medicine 2002; 22; 396-399.

18. **Occupational Safety and Health Administration: Final role on occupational exposure to blood born pathogens.** 56 Fed Reg. 64004 (1991).

19. Public Health Agency of Canada. **Preventing the transmission of blood born pathogens in heath care and public service settings.** Canada communicable Disease Report 1997. Volume 23S-3.