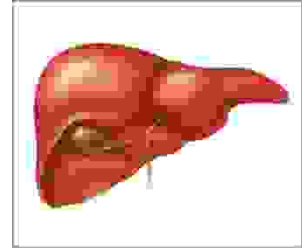


ORIGINAL

PROF-825

PREVALENCE OF HEPATITIS B SURFACE ANTIGEN AND ANTI HEPATITIS C VIRUS; AMONG GENERAL POPULATION IN LAHORE



DR. M. JOHER AMIN, FCPS

Department of Medicine

Shalamar Hospital

Shalimar Link Road, Moghalpura, Lahore

DR. M. HAROON YOUSUF, FCPS

Department of Medicine

Shalamar Hospital

Shalimar Link Road, Moghalpura, Lahore

DR. ASIM MUMTAZ, MBBS, M.PHIL

Department of Pathology

Shalamar Hospital

Shalimar Link Road, Moghalpura, Lahore

Mr.ajjad Iqbal, M.Phil

Department of Pathology

Shalamar Hospital

Shalimar Link Road, Moghalpura, Lahore

Dr. Rashid Ahmed, MBBS, MRCP

Department of Medicine

Shalamar Hospital

Shalimar Link Road, Moghalpura, Lahore

Dr. Saleem-uz-Zaman Adhami, MBBS, MRCP

Department of Medicine

Shalamar Hospital

Shalimar Link Road, Moghalpura, Lahore

Dr. Kashif Malik, MBBS, FCPS

Department of Medicine

Shalamar Hospital

Shalimar Link Road, Moghalpura, Lahore

ABSTRACT ... joheramin@hotmail.com **Objective :** To assess and compare the prevalence of hepatitis B and C in normal population. **Design:** This is a descriptive, non-interventional study. **Setting:** Data was collected from a free screening camp for hepatitis B and C at Shalamar Hospital, Lahore. **Subjects & Methods:** Normal people of any age and either sex were included in the study. Screening was performed for HBs Ag and Anti HCV by Acu-Check one step test (Chromatographic immunoassay) in serum. **Results:** A total 757 subjects were screened. Prevalence of HBs Ag was 2.6% and Anti HCV 13.5%. The mean age was 24.96 ± 14.67 years. Females were 55.2% and males were 44.8%. Seroprevalence in females and males of Hbs Ag was 2.2% and 3.2% and of Anti HCV 15.6% and 10.9% respectively. HBs Ag was more prevalent in younger population (up to 10 years). The majority of Anti HCV positive subjects were in 31-50 years age group. **Conclusion:** Seroprevalence of HBs Ag and HCV is high in general population. Prevalence of HCV is very high in this region and HBV is very high in children up to 10 years of age. Larger population based studies are needed to confirm the results.

Key Words: Prevalence, Hepatitis B, Hepatitis C.

INTRODUCTION

Hepatitis B is a major public health problem globally. There are 400 millions HBV carriers world wide, out of which more than 250 million reside in Asia.¹

Chronic hepatitis B is a serious clinical problem in Pakistan.^{2,3} It is also an important cause of hepatocellular carcinoma.⁴ Pakistan remains in the intermediate HBV prevalence area with 4.5 millions estimated carriers and a carrier rate of 3-4%.⁵

HBV is however potentially eradicable due to the long-standing availability of effective vaccines. WHO has therefore advocated the introduction of HBV vaccination into the Global Expanded Program of immunization since 1995. Pakistan has incorporated HBV vaccine in the EPI in various parts of the country. Hepatitis C virus (HCV) is an important public health problem all over the world because it is a major cause of chronic hepatitis, cirrhosis, and hepatocellular carcinoma and has become the single most important reason for liver transplantation world wide.⁶

Approximately 160 millions people are estimated to be infected with HCV by the WHO, the large majority of whom reside in developing countries of the world.⁷ For prevalence of HCV infection in Pakistan few population based studies are available the most comprehensive being that of Luby et al⁸, which tested a representative sample from a population of 150000 in Hafizabad and found an overall sero prevalence of 6%.⁸ However, in various studies it is reported to be between 3 and 7%.⁹ Based on an average prevalence rate of 6% it could be estimated that approximately 10 millions people are infected with HCV in Pakistan. The sero prevalence of HCV in children appears to be low in Pakistan with 0.2% and 0.4% children infected with the age of 12 and between 12-19 years respectively. A meta-analysis of the available data suggests the HCV sero prevalence among volunteer blood donors in the country is between 3-4%.¹⁰ Nearly 60-70% patients with chronic liver disease are HCV positive^{2,11}. And 50% patients with HCC in Pakistan are infected by HCV¹². HCV has taken over from HBV as the single

most important cause for cirrhosis and HCC in Pakistan¹³.

SUBJECTS & METHODS

This is a descriptive, non-interventional study. A free camp was organized for screening of hepatitis B and C at Shalamar Hospital, Lahore. The aim was to create awareness about the hepatitis B and C infection in general public through the banners, leaflets, posters and brochures. To determine the sero-prevalence of HBs Ag and Anti HCV among normal population, incentives were given in the form of free HBs Ag and Anti HCV screening tests and free vaccination for Hepatitis B to HBs Ag negative persons. Normal people of any age and either sex were included in the study.

Screening was performed for HBs Ag by using Acu-check one step test strip (a rapid chromatographic immunoassay for the qualitative detection of HBs Ag in serum or plasma) and for Anti HCV by using Acu-check one step test device (a rapid chromatographic immunoassay for the qualitative detection of antibodies to HCV in serum or plasma). Frequencies were calculated and mean age \pm standard deviations are given by using statistical software package SPSS version-10.

RESULTS

A total of 757 subjects were included in the study. The mean age was 24.96 years with standard deviation of \pm 14.67. The range of age was 98 years (minimum 1 and maximum 99). The HBs Ag and Anti HCV positivity in different age groups is shown in Table 1. Sero-positivity of HBs Ag was more in the 1-10 years age group and in 21-50 years. No subject was positive above 50 years. Majority of Anti HCV positive subjects were in age group of 31-50 years. Anti HCV positivity in younger age group (<10 years) was very low. Out of the total 757, 418(55.2%) were females and 339 (44.8%) were males. HBs Ag was positive in 20(2.6%) subjects and Anti HCV in 102(13.5%).

Table I: Sero prevalence of HBsAg and Anti HCV in Different Age Groups

Age group	Total No. of peoples	HBsAg +ve	Anti HCV +ve
Upto 10	119	5 (4.2%)	1 (0.8%)
11 - 20	234	2 (0.9%)	14 (6.0%)
21 - 30	158s	6 (3.8%)	20 (12.7%)
31 - 40	134	4 (3.0%)	40 (29.9%)
41 - 50	81	3 (3.7%)	22 (27.2%)
50 - 60	24	-	4 (16.7%)
>60	7	-	1 (14.3%)
Total	757	20 (2.6%)	102 (13.5%)

Sero-prevalence of HBs Ag and Anti HCV in females and males is shown in Table 2. HBs Ag was more prevalent in males (3.2%) as compared to females (2.2%) but Anti HCV was more in females (15.6%) as compared to males (10.9%) which is significant (P value <0.05).

Sex	Total No of peoples	HBs Ag +ve	Anti HCV +ve
Female	418 (55.2%)	9 (1.2%)	65 (8.6%)
Male	339 (44.8%)	11 (1.5%)	37 (4.9%)
Total	757 (100%)	20 (2.6%)	102 (13.5%)

DISCUSSION

Sero-prevalence of HBs Ag was 2.6% in our study population which was representative of general population. Limited studies are available to have a clear picture of prevalence of hepatitis B in Pakistan. However small scale studies show the following figures. In a study of 103858 blood donors 3.3% were Hbs Ag and 4.0% were Anti HCV positive.¹⁴ In another study done on more than 50,000 blood donors, prevalence of HBs Ag was 2.28%¹⁵ In college going first time voluntary blood donors, seroprevalence was 2.2%¹⁶ A large data of 1176284 blood donors from all government hospitals of Punjab, Pakistan showed the prevalence of HBs Ag

2.26%¹⁷. In a community based study done at Hafizabad 4.3% had HBs Ag⁸.

In an older study the frequency of HBs Ag in healthy subjects was 2.9%.¹⁸ A meta-analysis of published data about the serology of hepatitis B in the healthy carriers showed 2.6%. Our results (2.6%) are consistent with the other studies done in Pakistan. The studies on blood donors has limitation of age 18-60 years. In our study subjects of age one year to 99 years were included and it showed alarming results in children of up to 10 years age group i.e., 4.2 % prevalence. In a cross-sectional study done in children 3% were HBs Ag positive²⁰

Our study showed prevalence of Anti HCV 13.5%. In a population based study of Luby et al done at Hafizabad showed prevalence of Anti HCV 6%⁸. Other smaller studies have reported a population prevalence of 16%²¹ from Lahore and 23.8% from Gujranwala. Two studies, one from Karachi had 1.76%²² and other from Quetta had 1.87%²³ seroprevalence of Anti HCV in blood donors. This shows that seroprevalence of Anti HCV is very high in Punjab as compared to Sindh and Balochistan. The sero prevalence of HCV in children reported to be low in Pakistan with 0.2% in children under 12 and 0.4% in 12-19 years age group²⁴. In our study prevalence of HCV in children up to 10 years was low 0.8% but in 11-20 years age group it was 6.0.

CONCLUSION

Sero-prevalence of HBs Ag and Anti HCV in general population is high in this part of world. For hepatitis B, following steps are needed, mass vaccination of children along with people at increased risk, screening of blood and screening of pregnant ladies to prevent vertical transmission. Prevalence of Anti HCV is very high in this region as compared to other areas of Pakistan. This should be confirmed by larger population based studies.

REFERENCES

1. Lee WM. **Hepatitis B virus infection.** N Engl J Med 1997;337:1733-45.4.

2. Khan AA, Rehman KU, Haider Z, et al. **Seromarkers of hepatitis B and C in patients with cirrhosis.** J Coll Phys Surg Pak 2000;12:105-7.
3. Umar M, Bushra HT, Younis N, et al. **Clinical spectrum of chronic liver disease due to HBV, HCV and dual infection – a comparative study.** Pak J Gastroenterol 1999;13:1-3.
4. Abdul Mujeeb S, Jamal Q, Khanani R, et al. **Prevalence of Hepatitis B surface antigen and HCV antibodies in hepatocellular carcinoma cases in Karachi Pakistan.** Trop Doct 1997 ;27:45-6.
5. Andre F. **Hepatitis B epidemiology in Asia: the Middle East and Africa.** Vaccine 2000;18(Suppl)1:S20-2.
6. Armstrong GL, Alter MJ, Mc Quillan GM, et al. **The past incidence of Hepatitis C virus infection: implications for the future burden of chronic liver disease in the United States.** Hepatology 2000; 31:777-82.
7. Brown RS, Gaglio PJ. **Scope of worldwide Hepatitis C problem.** Liver Transplantation 2003;9(Suppl3):S10-13.
8. Luby SP, Qamruddin K, Shah AA, et al. **The relationship between therapeutic injections and high prevalence of Hepatitis C infection in Hafizabad, Pakistan.** Epidemiol Infect 1997;119:349-56.
9. Jafri SMW. **Hepatitis C virus – the Pakistani perspective.** (editorial) J Coll Physicians Surg Pak 2003; 13:431-2.
10. Zuberi SJ, **International Hepatology Communications** 1996;5:19-26.
11. Umar M, Khaar HB, Anwar F, et al. **The management of acute variceal bleeding by Octreotide.** JRM 2000;4: 14-16.
12. Chohan Ar, Umer, Khaar B. **Demographic features of hepatocellular carcinoma. A study of 30 cases,** JRM 2001; S: 81-3
13. Hamid S, Tabassum S, Jafri W. **Hepatitis C has replaced Hepatitis B as major cause of chronic liver disease in Pakistan.** Hepatology 1999;30:212A..
14. Khattack MF, Salamat N, Bhatti FA, Qureshi TZ. **Seroprevalence of hepatitis B, C and HIV in blood donors in northern Pakistan.** J Pak Med Assoc 2000; 52:398-402
15. Kakepota GN, Bhally HS, Khaliq G, et al. **Epidemiology of blood-borne viruses: a study of healthy blood donors in southern Pakistan.** Southeast Asian J Trop Med Public Health 1996; 27:703-6.
16. Abdul Majeed G, Amir K, Memood K. **Seroprevalence of HBV, HCV and HIV infections among college going first time voluntary blood donors.** J Pak Med Assoc 2000; 50:269-70.
17. Rehman M, Akhtar GN, Lodhi Y, **Transfusion transmitted HIV & HBV infection in Punjab, Pakistan.** Pak J Med Sci 2002; 18: 18-25.
18. Zuberi SJ, Lodhi TZ, Samad F. **Prevalence of hepatitis B surface antigen and antibody in healthy subjects and patients with liver disease.** J Pak Med Assoc 1978; 28: 2-3.
19. Zubri Z. **Hepatitis B: Pakistani perspective. National consensus conference on Guide lines for Hepatitis B and C,** Karachi 16-17th August, 2003.
20. Agboat walla M, Isomura S, Miyake K, et al. **Hepatitis A, B and C seroprevalence in Pakistan.** Indian J Peadiatr 1994; 61: 545-9.
21. Aslam M, Aslam J. **Seroprevalence of the Punjab region of Pakistan,** J clin Gastroenterol 2001;33:407-11.
22. Babar F, Hashmi KZ. **Prevalence of hepatitis B and C in voluntary blood donors and hemophiliacs:** In: Proceedings of 3rd National Conference of hematology 2001 February 9-11; Karachi, Pakistan.
23. Ali N, Nadeem M, Qamar A, et al. **Frequency of hepatitis C virus antibodies in blood donors in combined military hospital, Quetta.** Pak J Med Sci 2003; 19: 41-44.
24. Hamid S, Umer M, Alam A, et al. **PSG Consensus statement on management of hepatitis C virus infection 2003.** J Pak Med Assoc 2004; 54: 146-50.