

FREQUENCY OF HEPATITIS B AND C IN SELECTED GROUPS OF POPULATION IN NWFP, PAKISTAN

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ABSTRACT

Objective: To determine the frequency of hepatitis B and hepatitis C in selected groups of population in NWFP, Pakistan.

Material and Methods: We analyzed our unpublished data as well as searched out local data, published till December 2006, to know the frequency of Hepatitis B and C in NWFP in the following groups: 1) general population, 2) healthy blood donors, 3) pre-procedure screening, 4) patients with liver diseases, and 5) high risk populations like thalassaemia.

Results: We found 2.28% prevalence for hepatitis B virus (HBV) and 3.19% for hepatitis C virus (HCV) in general population, 1.83% (HBV) and 2.34% (HCV) in healthy blood donors, 2.09% (HBV) and 4.06% (HCV) in screening data, 27.55% (HBV) and 48.78% (HCV) in chronic hepatitis patients, 26.56% (HBV) and 51.09% (HCV) in liver cirrhosis, 14.28% (HBV) and 67.86% (HCV) in hepatoma, and 6.7% (HBV) and 40.9% (HCV) in children with thalassaemia requiring multiple transfusions.

Conclusion: We conclude that HCV and HBV has become one of the major problems in NWFP like the rest of the country, resulting in chronic liver disease and its complications.

Key Words: Hepatitis B, Hepatitis C, Healthy Blood Donors, Hepatoma, Liver Diseases, Thalassaemia.

INTRODUCTION

Hepatitis B virus (HBV) and Hepatitis C virus (HCV) have become one of the major health problems and leading causes of chronic liver disease. An estimated 350 million persons worldwide are chronically infected with HBV and 170 million with HCV. HBV and HCV infected individuals are at increased risk of developing cirrhosis, hepatic decompensation, and hepatocellular carcinoma.³⁻⁹ HBV and HCV are transmitted by parenteral route including blood transfusion. Dilemma is that most of the individuals, infected with HBV and HCV, are asymptomatic and thus a potential source of spread of these lethal infections to others in the community. This study was conducted to know the frequency of Hepatitis B and C in the selected groups of population in NWFP, Pakistan.

MATERIAL AND METHODS

We analyzed our unpublished data as well as searched out local data, published till December

2006, to know the frequency of Hepatitis B and C in the selected groups of population in NWFP as detailed out below:

- ! General population
- ! Healthy blood donors
- ! Pre-procedure screening
- ! Patients with liver diseases
- ! High risk populations

RESULTS

We found that in:

- ! General population: According to our unpublished data of 17359 individuals from general population, whom we had screened during 2005 in our vaccination camps, we found 2.28% prevalence for hepatitis B and 3.19% prevalence for hepatitis C.
- ! Healthy blood donors: According to three published studies¹⁰⁻¹² and our hospital data, the frequency of HBV was 1.83% and HCV was 2.34% (Table 1 and 2).

SEROPREVALENCE OF HBV AND HCV IN HEALTHY BLOOD DONORS IN NWFP

Author	HBV +ive	HCV +ive
Faisal Ahmed, et al ¹¹	1.55%	-
Alia Zaidi, et al ¹²	1.40% (HMC) 1.75% (CMH)	1.34% (HMC) 2.60% (CMH)
Jawad Ahmed, et al ¹³	1.90%	2.20%
Our data in LRH	2.54%	3.21%
Mean	1.83%	2.34%

Table 1

! **Screening:** According to two published studies^{13,14} and our hospital data of pre-operation screening (n=3799 patients) and pre-endoscopy screening (n=3596 patients), mean prevalence of HBV was 2.09% and HCV was 4.06% (Table 3).

! **Liver diseases:** According to eight published studies^{6-10,15-19} and our hospital data of 1773 patients, mean prevalence of HBV and HCV was respectively 27.55% and 48.78% in chronic hepatitis^{7,8} (Table 4), 26.56% and 51.09% in liver cirrhosis^{16,9,15,16} (Table 5), and 14.28% and 67.86% in hepatoma¹⁷.

! **High risk populations:** According to two published studies^{18,19}, mean prevalence was 6.7% for HBV and 40.9% for HCV in children with thalassemia. Hussain, et al¹⁸ found 5% prevalence for HBV and 25% prevalence for HCV. Shah, et al¹⁹ found 8.4% prevalence of HBV and 56.8% prevalence of HCV.

DISCUSSION

We had screened 17359 individuals from general population in Peshawar during 2005 in our vaccination camps and found 2.28% prevalence for hepatitis B and 3.19% for hepatitis C. Our results are comparable with other studies from rest of the country. Wasim Jafri, et al²⁰ screened 3533 children in Karachi for HBsAg and anti-HCV. Out of these, 1826 (52 %) were males. Sixty-five (1.8 %) were positive for HBsAg, male to female ratio 38:27; mean age 10 ± 4 years. Fifty-five (1.6 %) were

positive for anti-HCV with a mean age 9 ± 4 years. Three (0.11%) boys were positive for both HBsAg and anti-HCV. The overall infection rate was 3.3 % in the studied population. Nasir Khokhar, et al²¹ screened 47,538 individuals in Islamabad. Out of these, 2528 (5.31%) were positive for anti-HCV and 1221 (2.56%) individuals had positive HBsAg. Hepatitis B surface antigen and anti-HCV both were found in 92 (0.19%) individuals. Mean age of subjects, positive for HCV antibody was 44 years and 40.5 years for HBV. Ninety-four percent individuals were males and 6% were females.

We found three studies¹⁰⁻¹² in the published literature documenting prevalence of HBV and HCV in healthy blood donors in NWFP in addition to our own hospital data of 166189 healthy blood donors. Mean prevalence of HBV was 1.83% and HCV was 2.34%. It is comparable with other parts of the country. *Ishtiaq Ahmed Chaudhary, et al*²² screened 1428 donors at Fouji Foundation Hospital Rawalpindi, among them 97.05% were males. Prevalence of Hepatitis B was 2.45% with a male predominance of 2.38%. Seroprevalence of Hepatitis C was 2.52% with male predominance of 2.52%. From Multan, Muhammad Arif Mahmood, et al²³ reported 3.37% and 0.27% seroprevalence of Hepatitis B and C respectively.

We found two studies^{13,14} in the published literature documenting prevalence of HBV and HCV in pre-op screening group in addition to our own hospital data of 3799 patients on pre-operation screening and 3596 patients on pre-endoscopy screening. Mean prevalence of HBV was 2.09% and HCV was 4.06%, lower than other parts of the country. *Zubia Masood, et al*²⁴ screened a total of 387 patients in Karachi and found that HBsAg was positive in 25 (6.5%) of patients, anti HCV in 44 (11.3%) of patients while 6 (1.5%) were positive for both HBsAg and anti HCV.

We found eight studies^{6-10,15-17} in the published

YEAR-WISE DISTRIBUTION OF HBV AND HCV IN HEALTHY BLOOD DONORS IN LADY READING HOSPITAL, PESHAWAR

Year	Total Donors	HBV +ive	HCV +ive
2001	24,752	528 (2.13%)	932 (3.76%)
2002	22,924	570 (2.49%)	631 (2.75%)
2003	27,204	711 (2.80%)	957 (3.50%)
2004	28,565	742 (2.59%)	987 (3.45%)
2005	29,283	780 (2.66%)	877 (2.99%)
2006	33,461	861 (2.57%)	928 (2.78%)
Combined	166,189	4192 (2.54%)	5312 (3.21%)

Table 2

SEROPREVALENCE OF HBV AND HCV ON SCREENING

Author	HBV +ive	HCV +ive
Najib-ul-Haq et al ¹⁴	2.45%	6.50%
Umar Khitab, et al ¹⁵	1.66%	1.26%
Our data in Lady Reading hospital {LRH} (pre-operation screening)	2.13%	4.29%
Our data in LRH (pre-endoscopy screening)	2.15%	4.18%
Mean	2.09%	4.06%

Table 3

SEROPREVALENCE OF HBV AND HCV IN CHRONIC HEPATITIS

Author	HBV +ive	HCV +ive
Tahir Saleem, et al ¹⁶	30.35%	-
Tahir Saleem, et al ¹⁷	-	40.80%
Our data in LRH	24.75%	56.77%
Mean	27.55%	48.78%

Table 4

literature documenting prevalence of HBV and HCV in chronic hepatitis, liver cirrhosis and hepatoma in addition to our own hospital data of 1773 patients. Mean prevalence of HBV and HCV was 27.55% and 48.78% in chronic hepatitis^{7,8}, 26.56% and 51.09% in liver cirrhosis^{6,9,10,15,16}, and 14.28% and 67.86% in hepatoma¹⁷. This is comparable with other parts of the country. Irshad Hussain, et al²⁵ found in their patients of liver cirrhosis that anti HCV was positive in 52% patients, HBsAg was positive in 24%. Eight percent were positive for both HBV and HCV markers. Muhammad Arif Nadeem, et al²⁶ found 55% cirrhotic patients to be HCV positive, 23% HBV positive, and another 9% positive for both. Muhammad Shahzad Mumtaz et al²⁷ found 54% patients with hepatoma to be positive for HCV, 25% for HBV and 7% for both. Butt A, et al²⁸ found 75% patients with hepatoma to be positive for HCV, 10% for HBV and 10% for both. Aman-ur-Rehman, et al²⁹ found 78% patients with

SEROPREVALENCE OF HBV AND HCV IN LIVER CIRRHOSIS

Author	HBV +ive	HCV +ive
Farooqi JI, et al ¹⁸	25.60%	42.68%
		(Both +ive in 7.34%)
Farooqi JI, et al ¹⁹	32.00%	59.00%
Farooqi JI, et al ²⁰	31.00%	60.00%
Salim Iqbal, et al ²¹	30.00%	41.00%
Ihsan Ullah, et al ²²	46.67%	40.00%
Our data in LRH	24.11%	63.86%
Mean	26.56%	51.09%

Table 5

hepatoma to be positive for HCV.

Mean prevalence was 6.7% for HBV and 40.9% for HCV in children with thalassaemia in NWFP.^{18,19} From Islamabad, Nasir Khokhar, et al³⁰ found 24% HCV prevalence in patients on long-term hemodialysis.

CONCLUSION

We conclude that HCV and HBV has become one of the major problems in NWFP like the rest of the country, resulting in chronic liver disease and its complications.

REFERENCES

- Lee W. Hepatitis B virus. N Eng J Med 1997;337: 1733-45.
- World Health Organization. Hepatitis C: Global prevalence. Wkly Epidemiol Rec 1997; 72: 341-4.
- Kim WR. The burden of hepatitis C in the United States. Hepatology 2002; 36 (suppl 1): S30-4.
- Muhammad N, Jan A. Frequency of Hepatitis C in Buner, NWFP. J Coll Physicians Surg Pak 2005;15:11-4.
- Mashud I, Khan H, Khattak AM. Relative frequency of Hepatitis B and C viruses in patients with Hepatic Cirrhosis at DHQ Teaching Hospital DI Khan. J Ayub Med Coll 2004;16:32-4.
- Khan TS, Rizvi F. Hepatitis B seropositivity among Chronic Liver Disease patients in Hazara Division Pakistan. J Ayub Med Coll 2003;15:54-5.
- Khan TS, Rizvi F, Rashid A. Hepatitis C seropositivity among Chronic Liver Disease patients in Hazara, Pakistan. J Ayub Med Coll 2003; 15:53-5.
- Farooqi JI, Farooqi RJ. Relative Frequency of Hepatitis B Virus and Hepatitis C Virus infections in patients of Cirrhosis in NWFP. J Coll Physicians Surg Pak 2000; 10: 217-19.

9. Iqbal S, Ruknuddin. **Liver Cirrhosis in North-West Frontier Province of Pakistan.** J Coll Physicians Surg Pak 2002;12: 289-91.
10. Ahmed F, Shah SH, Tariq M, Khan JA. Prevalence of hepatitis B carrier and HIV in healthy blood donors at Ayub Teaching Hospital. Pakistan J Med Res 2000;39:91-2.
11. Zaidi A, Tariq WZ, Haider KA, Ali L, Sattar A, Faqeer F, et al. Seroprevalence of hepatitis B, C and HIV in healthy blood donors in Northwest of Pakistan. Pakistan J Pathol 2004;15: 11-6.
12. 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;18:343-52.
13. Rehman FU, Haq NU, Humayun M, Afridi J. Risk of Hepatitis in Surgical Practice. J Postgrad Med Inst 2002;16:157-60.
14. Khitab U, Khan AS, Shah SA, Haq NU. Hepatitis in Dental practice - a study conducted on 1498 patients. Pak Oral Dental J 2005;25:25-9.
15. Farooqi JI, Farooqi RJ. Relative Frequency of Hepatitis B Virus and Hepatitis C Virus infections in patients of Cirrhosis. J Postgrad Med Ins 2000;14:64-7.
16. Farooqi JI, Khan PM. Prevalence of Hepatitis B Virus and Hepatitis C Virus infections in patients of Cirrhosis in Swat. Pak J Gastroenterol 2002;15:55-62.
17. Farooqi JI, Farooqi RJ. Relative Frequency of Hepatitis B and C Virus Infections in Cases of Hepatocellular Carcinoma in North West Frontier Province, Pakistan. J Coll Physicians Surg Pak 2000;10:128-30.
18. Hussain M. Prevalence of HBV and HCV in thalassaemia children. Pak Paediatr J 2003;27:157-60.
19. Shah SMA, Khan MT, Zahour Ullah, Ashfaq NY. Prevalence of Hepatitis B and Hepatitis C virus infection in multitransfused thalassaemia major patients in North West Frontier Province. Pak J Med Sci 2005; 21: 281-4.
20. Jafri W, Jafri N, Yakoob J, Akhtar S, Hamid S, Shah HA, et al. Hepatitis B and C: prevalence and risk factors associated with seropositivity among children in Karachi, Pakistan. BMC Infect Dis 2006, 6:101.
21. Khokhar N, Gill ML, Malik GJ. General seroprevalence of hepatitis C and hepatitis B in population. J Coll Physicians Surg Pak. 2004;14:534-6.
22. Chaudhary IA, Samiullah, Khan SS, Masood R, Sardar MA, Mallhi AA. Seroprevalence of Hepatitis B and C among the healthy blood donors at Fauji Foundation Hospital, Rawalpindi. Pak J Med Sci 2007; 23: 64-7
23. Mahmood MA, Khawar S, Anjum AH, Ahmed SM, Rafiq S, Nazir I, et al. Prevalence of Hepatitis B, C and HIV infection in blood donors of Multan region. Ann KE Med Coll 2004; 10:459-61.
24. Masood Z, Jawaid M, Khan RA, Rehman SU. Screening for Hepatitis B & C: A Routine Preoperative Investigation? Pak J Med Sci 2005; 21: 455-9.
25. Hussain I, Nasrullah M, Shah AA. Prevalence of Hepatitis B and C Viral Infections in Liver Cirrhosis in Pakistan. Pakistan J Gastroenterol 1998;12:1-3.
26. Nadeem MA, Waseem T, Sheikh AM, Grumman NU, Irfan K, Hasnain SS. Hepatitis C Virus: An alarmingly increasing cause of Liver Cirrhosis in Pakistan. Pakistan J Gastroenterol 2002;16:3-8.
27. Mumtaz MS, Iqbal R, Umar M, Khar B, Mumtaz MO, Anwar F, et al. Prevalence of Hepatitis B and C Viruses in Hepatocellular Carcinoma. J Rawal Med Coll 2001;5:78-80.
28. Butt A, Khan A, Alam A, Ahmad S, Shah S, Shafqat F, et al. Hepatocellular carcinoma: Analysis of 76 cases. J Pak Med Assoc Jul 1998;48:197-201.
29. Rehman AU, Murad S. Hepatocellular Carcinoma: A retrospective analysis of 118 cases. J Coll Physicians Surg Pak 2002;12:108-9.
30. Khokhar N, Alam AY, Naz F, Mahmud SN. Risk factors for Hepatitis C virus infection in patients on long-term hemodialysis. J Coll Physicians Surg Pak 2005;15:326-8.

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