FREQUENCY OF HEPATITIS B & C INFECTION IN NEWLY RECRUITED CIVIL SERVANTS IN KHYBER PAKHTUNKHWA

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ABSTRACT

OBJECTIVE: To determine the frequency of hepatitis B virus (HBV) & hepatitis C virus (HCV) infections in healthy individuals selected for new recruitment in civil service in various governments departments of Khyber Pukhtunkhwa.

METHODOLOGY: This descriptive study was carried out in Police & Services Hospital, Peshawar from 15-07-2011 to 15-10-2012. All the newly recruited government personal (total 4639) in various cadres from basic pay scale (BPS) 01 to 18, divided in two groups (groups-1: from BPS 01-14 and group-2 from BPS 15-18) attending the hospital were included in the study. Three millilitre of blood was subjected to rapid screening using the Immunochrmatographic (ICT) kit. All the positive cases on the rapid screening were confirmed by 3rd Generation ELISA technique.

RESULTS: Out of 3012 individuals in group-1, ranging in age from 18 to 30 years (mean 23.22 + 0.53 years), frequency of HBV was 4.5% & 3%, HCV was 5.2% & 3.8 % and dual HBV/HCV was 2.1% & 1.7% in males and females respectively. While in group-2, having 1627 individuals ranging in age from 18 to 36 years (mean 24.67+ ± 0.61 years), frequency of HBV was 2.3% & 1.8%, HCV was 2.2% & 2% while both HBV/HCV was 0% and 0.7% in males and females respectively.

CONCLUSION: The frequency of HBV & HCV infections remains high in Khyber Pukhtunkhwa especially in the low income groups despite apparently normal health. More extensive seroprevalance and frequency studies recruiting various segments of the society are needed to determine the true prevalence.

KEY WORDS: Seroprevalance, HBV, HCV .

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INTRODUCTION

Viral hepatitis remains a global public health problem. Six different types of hepatitis virus have been identified and are named as A, B, C, D, E and G. Hepatitis B & C are one of the leading health care problems especially in the developing and underdeveloped countries. It is estimated that 350 million people worldwide are known to be chronically infected with HBV and 170 million with HCV.[1,2] Hepatitis B virus (HBV) & hepatitis C virus (HCV) are blood borne hepatotrophic viruses and leading cause of chronic liver disease, cirrhosis and death.[3]

Viral hepatitis due to HBV & HCV is unfortunately highly endemic in Pakistan. The overall prevalence in general population varies widely from region to region in Pakistan. HBV prevalence being highest (9.3%) in Balochistan, lowest (2%) in Khyber Pukhtunkhwa and its prevalence is 2.4% in Punjab and 2.3% in Sindh. HCV prevalence is highest (4.3%) in Punjab and is (2.2%) in Khyber Pukhtunkhwa, 1.9% in Balochistan and 1.8% in Sindh.[4-6] Most of the general population chronically infected with HBV and HCV remains largely asymptomatic despite being infectious.[7] Observing the ever increasing prevalence of viral hepatitis, we decided to conduct this study to evaluate the frequency of HBV and HCV in healthy individuals selected for recruitment in various provincial departments of Khyber Pukhtunkhwa.

METHODOLOGY

This descriptive study was carried out in Police & Services Hospital, Peshawar from 15 July, 2011 to 15 Oct, 2012. All the newly recruited government personal in various cadres from basic pay scale (BPS) 01 to 18 attending the hospital were included in the study. All the included personal were divided in to two groups on the basis of their BPS cadre. Group-1 included individuals appointed in BPS 01 to 14 and group-2 included BPS 15 to 18. Individuals with any known systemic illnesses like diabetes, hypertension, tuberculosis, previous history of infection or treatment for HBV or HCV infection, chronic liver disease and asthma were excluded from the study.

As part of health and age assessment before recruitment all the baseline blood and radiological investigations were per-

TABLE 1: FREQUENCY OF HEPATITIS B & C IN NEWLY RECRUITED CIVIL SERVANTS

Virus	Group 1 (Basic pay scale: 01- 14) (n=3012)			Group 2 (Basic pay scale: 15- 18) (n=1627)		
	Male (n=2619)	Female (n=393)	Total (n=3012)	Male (n=986)	Female (n=641)	Total (n=1627)
HBV$	120 (4.5%)	12 (3.0%)	132 (4.38%)	23 (2.3%)	12 (1.8%)	35 (2.15%)
HCV*	136 (5.2%)	15 (3.8%)	151 (5.01%)	22 (2.2%)	12 (2.0%)	34 (2.09%)
HBV & HCV	55 (2.1%)	07 (1.7%)	62 (2.06%)	0	05 (0.7%)	05 (0.7%)

formed including screening for HBV and HCV before final issuance of the health & age fitness certificate by the medical superintendent of police & services hospital, Peshawar. Obtaining this certificate is mandatory before any newly appointed civil servant is allowed to join his place of duty. Informed consent was taken from all the individuals before investigations. Three milli litre of blood sample was collected in a disposable syringe and was subjected to rapid screening using the Immunochrmatographic (ICT) kit provided free of cost by the provincial hepatitis control programme, government of Khyber Pukhtunkhwa. All the positive cases on the rapid screening were confirmed by 3rd Generation ELISA technique. Data was recorded in a specially designed proforma and was analyzed using SPSS version 13. Results were tabulated in the form of tables and expressed as percentages.

RESULTS

Out of the 4639 individuals included in the study, 3012 were in group-1, ranging in age from 18 to 30 years (mean 23.22+0.53 years) and 1627 were in group-2 ranging in age from 18 to 30 years 18 to 36 years (mean 24.67+0.61 years).

In group-1, frequency of HBV, HCV & both HBV/HCV was 132 (4.38%), 151(5.01%) & 62 (2.06%) respectively. In group-2, frequency of HBV, HCV & both HBV/HCV was 35(2.15%), 34 (2.09%) & 05 (0.7%) respectively. Frequency distribution of HBV & HCV among males and females of both groups is given in Table 1.

DISCUSSION

HBV and HCV infections are highly endemic in Pakistan.[8] The HBV prevalence across Pakistan has been reported to be 1.11%, 3%, 3.2% and 4%.[9-12] HCV prevalence has been estimated to be 3.3%, 2.2% and as high as 16.3%.[13-15]

The global prevalence of HBV and HCV varies widely across the globe. HBV prevalence is highest in Taiwan (15-20%), 2% in Japan and lowest < 1% in Australia & New Zealand.[16] Lowest HCV prevalence (0.01-0.1%) has been reported in the UK and Scandinavian countries while the highest has been reported in Egypt.[17]

Our study showed higher prevalence of HCV as compared to HBV and higher prevalence in the males as compared to females. The prevalence of both HBV & HCV in the group 01 which included individuals from BPS 01 to 14 is comparatively higher as compared to group 02. This may well be because of the increased awareness due to education in group 02. The group 01 individuals come from a low socioeconomic group and have little education and awareness besides potentially being exposed to more risk factors (poor health care, unsafe blood transfusions, unsafe child births etc) leading to transmission of HBV & HCV. This difference in the prevalence of HBV & HCV in different socioeconomic groups has been proved in various trials. Bhatti MS et al screened 524 volunteer students of Lahore Medical & Dental College and found a very low incidence of HBV & HCV. Only 10 (1.1%) were HBsAg positive and 11 (2.1%) were reactive to Anti HCV antibodies.[18]

15550 individuals seeking recruitment into armed forces of Pakistan for the presence of HBsAg and Anti HCV antibodies were screened by Mirza IA et al. 504 (3.24%) individuals were found to be positive for HBsAg, 574 (3.69%) for Anti HCV antibodies and 49 (0.13%) for both HBsAg and Anti HCV antibodies.[19]

A study was conducted at DHQ Hospital, Skardu by Aziz MS et al. A total of 850 healthy male blood donors were screened for HBsAg and Anti HCV antibodies. 8.4% of the donors were found positive for HBsAg, 1.1% for Anti HCV antibodies and none was found reactive to both HBsAg and Anti HCV antibodies.[20]

Butt et al studied 5707 young adults who were selected for recruitment in various branches of Pakistan Army for all over Pakistan. 97 (1.7%) were found positive for Anti HCV antibodies, 197 (2.9%) positive for HBsAg while none were found positive for both HBsAg and Anti HCV antibodies.[21]

CONCLUSION

The prevalence of HBV & HCV remains high in Khyber Pukhtunkhwa especially in the low income groups despite apparently normal health. More extensive seroprevalance studies recruiting various segments of the society are needed to determine the true prevalence.

REFERENCES

1. Elghouhari HM, AbuRajabTamimi TI, Chavey WD. Hepatitis B Virus infection: Understanding its epidemiology, course and diagnosis. Cleve Clin J Med 2008; 75: 881-9.

2. Pertz JF, Armstrong GL, Farrington LA, Hutin YJ, Bell BP. The contributions of hepatitis B virus and hepatitis C virus infections to cirrhosis and primary liver cancer worldwide. J Hepatol 2006; 45: 529-38.

3. Baig S, Siddiqui AA, Ahmed WU, Qureshi H, Arif A. Frequency of hepatitis C and D super infection in patients with hepatitis B related complex liver disorders. J Coll Physicians Surg Pak 2009; 19(11): 699-703.

4. Ijaz AU, Shafiq F, Toosi NA, Malik MN, Qadeer R. Hepatitis B & C in blood donors: Analysis of 02 years data: Annals King Edward Med Univ; 2007; 13; 59-61.

5. Nafees M, Farooq, Jafferi G. Frequency of hepatitis B & C infection in general population of Lahore, Pakistan: Biomedica 2009; 24: 106-11.

6. Ali SA, Donahue RM, Qureshi H, Vermund SH. Hepatitis B & C in Pakistan: prevalence and risk factors. Int J Infect Dis 2009; 13(1): 9-19.

7. Khokar N, Gill ML, Malik GJ. General seroprevalance of Hepatitis B and C virus infection in population. J Coll Phys Surg Pak 2004; 14 (9) 534-6.

8. Bukhari SM, Khatoon N, Iqbal A. Prevalance of Hepatitis B antiginaemia in Mayo Hospital, Lahore. Biomedica 1999; 15: 88-91.

9. Qasmi SA, Aqeel S, Ahmed M, Aslam SI, Ahmed. A detection of Hepatitis B virus in normal individuals in Karachi. J Coll Physicians Surg Pak 2000; 10: 467-9.

10. Abbas Z, Shazi L, Jafri W. Prevalence of hepatitis B in individuals screened countrywide. J Coll Physicians Surg Pak 2006; 16(7): 497-8.

11. Farooq MA, Iqbal MA, Rariq WZ, Hussain AB, Ghani I. Prevalence of Hepatitis B and C in healthy Pakistani adults. Pak J Pathol 2005; 16: 42-6.

12. Zakaria M, Ali S, Tariq GR, Nadeem M. Prevalance of Anti hepatitis C antibodies and Hepatitis B surface antigen in healthy male naval recruits. Pak Armed Forces Med J 2003; 53: 3-5.

13. Shah M, Ahmed J. Prevalence of Hepatitis B Antiginemia in general population of Quetta, Balochistan. Biomedica 1997; 13: 51-2.

14. Bhatti FA, Shaheen N, Tariq WUZ, Amin M, Salim M. Epidemiology of Hepatitis C virus in blood donors in Northern Pakistan. Pak Armed Forces Med J 1996; 46: 19-20.

15. Masood Z, Jawaid M, Khan RA, Rehman SU. Screening for hepatitis B and C: A routine preoperative investigation? Pak J Med Sci 2005; 21(4): 455-9.

16. Chien-Jen C, LI-YU W, Ming-Whei Y. Epidemiology of Hepatitis B virus infection in Asia Pacific region. Towards control of Hepatitis B in Asia Pacific region. J Gastroenterol Hepatolo 2000; 15: Suppl: E3-6.

17. Alter MJ; Epidemiology of Hepatitis C virus infection: World J Gastroenterol; 2007: 13 (17): 2436-41.

18. Bhatti MS, Qureshi M, Mahood CZ, Junaid K. Seroprevalance of HBsAg and Anti HCV antibodies in healthy individuals of high socioeconomic status. Biomedica 2007; 23: 131-3.

19. Mirza IA, Mirza SH, Irfan S, Siddiqi R, Tariq WUZ, Asif. Seroprevalance of Hepatitis B and C in young adults seeking recruitment in armed forces. Pak Armed Forces Med J 2006: 56(2): 192-7.

20. 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.

21. Butt T, Amin MS. Seroprevalance of hepatitis B & C infections among young adult males in Pakistan. East Meiterr Health J 2008; 14 (4): 791-7.

AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under

MTM: Conception and design, Acquisition of data, drafting the manuscript, final approval of the version to be published

HK: Drafting the manuscript, final approval of the version to be published

QUN: Analysis and interpretation of data, final approval of the version to be published

NUI: Critical revision, & final approval of the version to be published

CONFLICT OF INTEREST

Author declares no conflict of interest

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