

FREQUENCY OF HEPATITIS B AND C IN HEALTHY SUBJECTS IN PARACHINAR

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ABSTRACT

Objective:- To find sero-prevalance of HBSAg and HCV antibody among the healthy subjects reporting for screening for vaccination of Hepatitis B.

Material and Methods:- The study design was cross-sectional. Data was collected from Blood transfusion units, Pathology departments, Parachinar to know the frequency of Hepatitis B and Hepatitis C in healthy subjects for purpose of vaccination and screening the subjects. Detailed history was taken by panel of doctors helped by paramedical staff. Screening for HBsAg, and HCV antibodies was done by using rapid immunochromatography kits.

Results:- A total of ten thousand three hundred and forty three subjects were received during a period of one year from April 2007 till April 2008.. The seroprevalence of various infectious markers was as follows; Out of the total 10343 ,280(2.707%) were found to be positive for Hepatitis B surface antigen HBsAg and 50(0.43%) were found positive for HCV antibody.

Conclusion:- It is concluded that HCV and HBV has become major problems in FATA like rest of the country and screening for not only blood donation but also in general should be done to prevent the disease escalation. Due to the high cost of treatment of hepatitis B and C virus infection and the unavailability of a vaccine against HCV, the main focus should be on preventive aspects.

Key words:- Hepatitis B, Hepatitis C, Hepatitis B vaccination.

INTRODUCTION

Hepatitis B and Hepatitis C are viral induced Hepatitis. Mode of transmission of hepatitis B and Hepatitis C are from infected person or a chronic carrier person to healthy person via blood and blood products. Fluids of the body, blood contaminated saliva in dental or other surgical procedures, unsafe injections, use of blood contaminated instruments for surgery, traditional scarification, injecting drug use, acupuncture, tattooing, body piercing, mother-infant transmission, and sexual transmission are a few sources of viral hepatitis transmission. In undeveloped countries or in countries where laws for safe blood transfusions are not implemented blood and blood products transfusion are the most common sources of viral hepatitis transmission.¹

Rough estimate suggests that about 15.6 % of the populations are carriers of hepatitis. About three million, who visited public sector hospitals,

have hepatitis B or C.^{2,3}

Hepatitis B virus (HBV) is responsible for a substantial proportion of cases of post-transfusion hepatitis, liver cirrhosis and hepatocellular carcinoma². An estimated 2 billion people are infected with HBV worldwide; among them 350 millions are chronic carriers: hepatitis B surface antigen (HBsAg) positive.² HBsAg positivity in developed countries varies from 0.6 percent in Wales, England, to 1.2 percent in Texas, USA. However, higher prevalences of infection with HBV have been reported from various parts of the developing world including 3.5% in Gaza, Palestine^{3,4} 1.6%–7.7 % in Brazil^{5,6} 19.6 % in Egypt³ and 2%–10 % from various parts of India.³

The national estimates for prevalence and/or incidence of HBV infection in Pakistan are unknown. However, studies in selected groups have shown variable prevalence of chronic

SEROPREVALENCE OF HEPATITIS B AND HEPATITIS C

| No.of subjects | Hepatitis B positive | Hepatitis C positive |
|----------------|----------------------|----------------------|
| 10343 | 280(2.707%) | 50(.43%) |

Table 1

infection with HBV as assessed by HBsAg positivity. 7% in health professionals, 2%–14% in blood donors^{7,8}. Pre-employment screening revealed 2.6% HBsAg positivity among the healthy individuals in northern Pakistan^{9,10}. Moreover, some hospital-based studies have revealed that 30% – 42% of the cases of chronic liver disease and 78% of the cases of hepatocellular carcinoma were positive for HBsAg^{11,12}.

Developed countries have been successful in reducing the risk of HBV spread by interrupting some of the known routes of HBV transmission and through mass HBV vaccinations. The vaccine against HBV infection is available in most of the developing world including Pakistan, but its high cost limits the widespread use. Recently, Pakistan initiated universal HBV vaccination for neonates through its expanded program of immunization with the assistance of Global Alliance for Vaccines and Immunization². However, public health benefits of this initiative require some time to achieve its objectives, as the program focuses on neonates.

Therefore, a multi-prong approach needs to be undertaken to curtail the spread of HBV infection in Pakistan and perhaps other developing countries in the region. Similarly Hepatitis C virus (HCV) infection is also an important worldwide public health problem. It is believed that 2-3% of the world's population is persistently infected with HCV and up to 170 million individuals may be infected; all of them are at risk of developing cirrhosis and primary liver cancer.^{2,3} In Pakistan both these infections are common with considerable variation in different parts of the country because of variability in the ethnicity and geography^{9-11, 13-18}.

MATERIAL AND METHODS

This cross sectional study was conducted at Agency Headquarters Parachinar from April.2007 till April 2008. Detailed medical history was sought for each subject. Informed consent was obtained for physical examination.

They were tested for HBsAg and anti-HCV antibodies in the laboratory; the collected data fed into personal computer. The Frequency of Hepatitis B and Hepatitis C in selected group of blood donor population in Agency Headquarters Hospital Parachinar was analysed at:

- Pathology Laboratory at AHQ Parachinar.
- Community Pathology mobile units.

PREVALENCE OF HEPATITIS B& C AMONG BLOOD DONORS REPORTED IN LITERATURE PUBLISHED DURING LAST TEN YEARS

| Author and place of study | Year | Anti HCV | Hbs Ag |
|--|------|----------|--------|
| Amir Muhammad et al Khyber medical University Peshawar ¹⁹ | 2007 | 1.8% | 2.3% |
| Javed Iqbal Farooqi et al Govt.Lady Reading Hospital and Khyber Teaching Hospital Peshawar ²⁰ | 2007 | 3.21% | 2.54% |
| Ahmed J et al Rehman medical institute peshawar ²¹ | 2004 | 2.2% | 1.9% |
| Mehmood et al,Nishtar medical college Multan ²² | 2004 | .27% | 3.37% |
| Asif N et al Shifa international Hospital Islamabad ⁸ | 2004 | 5.14% | 2.251% |
| Ali N et al Combined military Hospital Quetta ²³ | 2003 | 1.87% | ---- |
| Fayyaz KM et al Quaid Azam Medical College Bahawalpur ²⁴ | 2002 | ---- | 7.35% |
| Ahmed S et al Sir Ganga Ram Hospital Lahore. ²⁵ | 2002 | 4.97% | ----- |

Table 1

Clinical history of subjects was noted, especially jaundice, blood transfusion, exposure to syringes, surgical and dental procedures.

HBV and HCV screening: on the spot screening for HBs Ag and HCV antibodies was done by using rapid immunochromatography kits (ICT, Australia and Abbott, USA).

RESULTS

A total of ten thousand three hundred and forty three subjects were received during a period of one year from April 2007 till April 2008.. The seroprevalence of various infectious markers was as follows; Out of the total 10343 ,280(2.707%) were found to be positive for Hepatitis B surface antigen. Fifty (0.43%) were found to be positive for Anti HCV. (Table I).

DISCUSSION

Studies published in different literature documenting prevalence of HBV and HCV were compared with this study Table I & II. It is little different from the the recent study by Javed Iqbal Farooqi et al in the prevalence of Hepatitis B,mean frequency in the Javed Iqbal Farooqi was found to be 1.83% and 2.3% for HBV and HCV respectively.²⁰ Nasir Khokar,et al screened 47,538 in Islamabad and mean frequency was found to be 5.31% positive for anti HCV and 2.56% were positive Hepatitis B²⁶. Ishtiaaq Ahmed Chaudary et al²⁷ at Fouji Foundation Hospital Rawalpindi found the Prevalance of Hepatitis B and Hepatitis C as 2.45% and 2.52% respectively the prevalence of hepatitis B is nearly the same and difference in Hepatitis C could be attributed to the reason of geographic difference between Peshawar, Islamabad and Parachinar.

The seroprevalence of Hepatitis C observed in our study is 0.43% which is near to the study conducted in Quetta²³ and Multan²² ,and study conducted at Hayatabad Medical Complex by Alia Zaidi et al⁹ and Umer Khitab et al¹¹ .On reviewing the literature pulished in last five years the seroprevalence of HCV is reported 2.2% from Peshawar,²¹ 5.14% from Islamabad, 2.4% to 6.21% from Rawalpindi,^{15,28} 2.89% to 4.97% from Lahore,^{25, 29} 3.26% from Sialkot,³⁰ 0.27% from Multan,²² 6.8% from Karachi³¹ and 1.87% from healthy blood donors from Quetta.²³ So the seroprevalence of HCV varies from 0.27% to 6.8% among healthy blood donors from different parts of country. The highest seroprevalence of HCV is reported from Karachi ³¹ (6.8%) and Rawalpindi (6.21%).²⁸

The seroprevalence of Hepatitis B is 2.707% in our study. This study is comparable.On

reviewing the literature published during last five years, the seroprevalence of HBsAg is reported 1.9% from Peshawar,²¹ 1.55% from Abbottabad,³⁵ 2.51% from Islamabad,¹⁵ 3.3% to 6.4% from Rawalpindi,^{28,30} 2.06% to 4.3% from Lahore,^{25,29} 7.53% from Bahawalpur,²⁴ 3.37% from Multan²² and 5.5% from healthy blood donors from Karachi.³¹ So the seroprevalence of HBsAg varies from 1.55% to 7.53% among subjects from different parts of country. The highest seroprevalence of HBsAg is reported from Bahawalpur (7.53%)²⁴ and Rawalpindi (6.4%).²⁸

Over 350 reports, papers and presentations estimate the combined prevalence of hepatitis B and C in various parts of Pakistan at 8-10%. A substantial decline in hepatitis B is detected due to mass scale immunization program started with government support against HBV infection.²¹

CONCLUSION & RECOMMENDATIONS

It is concluded that HCV and HBV has become major problems in FATA like rest of the country and screening for not only blood donation but also in general should be done to prevent the disease escalation. Due to the high cost of treatment of hepatitis B and C virus infection and the unavailability of a vaccine against HCV, the main focus should be on preventive aspects. In every surgical settings though it may be minor, blood screening be done to do primary prevention of the disease to other subjects.

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