

Assessment of HBsAg and AntiHCV in Some Area of Pakistan

Noor. A, M. Gulfranz and B. Aslam
University of Arid Agriculture Rawalpindi, Pakistan

Abstract: A study was conducted to find out prevalence (level) of HBsAg and AntiHCV in six dense populated areas (Gujrat, Mirpur, Peshawar, Rawalpindi, Sialkot and Swat) of Pakistan. A total of 647 male individuals were tested for HBsAg and AntiHCV using macroparticle Enzyme Immuno Assay (MEIA). It was observed that out of 647 individuals about 21 (3.2%) were reactive for HBsAg while 38 (5.8%) were reactive for AntiHCV. Furthermore it was observed that hepatitis C was found maximum in Rawalpindi district (7.1%) and HBsAg was lower than AntiHCV. Higher percentage of hepatitis in general population of Pakistan require strict measures to minimize further spread of this disease in human population. Therefore it was observed that rapid increase in the rate of this infection in population may cause high rate of movability, mortality and will become a challenge for all mankind throughout the world.

Key words: Hepatitis, HBsAg, AntiHCV

Introduction

The term "viral hepatitis" is usually used to describe infections caused by agents which are mainly involved in liver damage. Hepatitis B and C viruses acts clinically in a very similar fashion, especially during the acute phase of the illness. The majority of infections are totally asymptomatic however, clinical features includes anorexia, nausea, quadrant pain which on later stage convert into jaundice. The disease hepatitis B is caused by infection with hepatitis B virus and may lead to chronic carrier state. According to WHO there are more than 300 million persistent carriers of hepatitis B in the world. They may die with chronic liver disease or hepatocellular carcinoma. Further it was reported that hepatitis B virus is responsible for almost 80% of primary liver cancer which is one of the most common tumors in man.

The evidence of prior infection to HCV was 0.2 to 1.5% random blood donations in different countries of the world (HCV learning guide Abbott, 1989) prevalence is dramatically higher in drug addicts using shared syringes and homosexuals. Relatively high incidence of HCV was reported in intravenous drug abuser (34%) and blood transfusion recipients (13%).

The diagnosis is done by AntiHCV test (EIA) and liver biopsy. Histologically 20% of the chronic HCV patient may developed cirrhosis and more than 3% in liver cell carcinoma. Pakistan is an endemic area of viral hepatitis specific studies are required to determine the prevalence of hepatitis A, B, C, D, E, F, G and H and the distribution of the viral hepatitis causes in general population. Hepatitis C is spread by blood to blood contact which include blood transfusion, intravenous, drug use, tattooing body piercing, sharing of needles (Choo *et al.*, 1990). However the risk of HCV transmission through blood may be minimize if blood should be screened for hepatitis C virus. McQuillan *et al.* (1999) reported that majority of adults and children infected with hepatitis B and C virus do not develop any clinical diseases and therefore seroprevalence studies may provide more comprehensive picture for the distribution of infection than acute disease surveillance.

Therefore viral hepatitis is an important health problem in developing countries like Pakistan. It was reported by Malik *et al.* (1987) that acute viral hepatitis in general population of Pakistan increased many and more than 50% patient admitted in all military hospitals mainly suffered from viral hepatitis, due to this reason viral hepatitis is became fifth common disease in people of Pakistan seroprevalence of hepatitis B virus and hepatitis C virus infection among college going students are significantly low (about 3%) where as seroprevalence among paid donors was 30% which was 7% in family replacement donors (Majeed *et al.*, 2000). Khan *et al.* (2001) conducted a study on patients admitted in Pakistan Institute of Medical Sciences Islamabad. They revealed that HCV infection among various patients were about 28.7%. The aim of this study was to find out the percentage prevalence of HBsAg and AntiHCV in asymptomatic population for which six dense populated areas was selected in this study.

Materials and Methods

Blood samples from 647 individuals from six dense populated areas (Gujrat, Mirpur, Peshawar, Rawalpindi, Sialkot and Swat) were collected. About 5ml of blood was collected in sterile syringe from individuals and transferred into sterilize glass tube which was allowed to clot. The blood samples were centrifuge at 1000rpm for 15 minutes and serum was separated for detection of antibodies to hepatitis C virus fluorescence produced by the enzyme reaction is measured and is proportional to the amount of bound antibody. The 1MX (kit) HCV has been designed to detect antibodies to four recombinant HCV protein C200, C23-3, HC-34 and HC-31. Similar principle applies for detection of HBsAg. The estimated specificity of 1MX HCV was 99.53%.

Results and Discussion

Out of 647 samples screened from hepatitis C virus antibody (AntiHCV) only 59 were found reactive and seroprevalence of HBsAg and AntiHCV was 9.1 (Table 1). Where as 21 samples were found reactive for HBsAg for which prevalence was 3.2%. However, 38 samples were reactive for AntiHCV with 5.8% of prevalence (Tables 1,2). The seroprevalence of ANTIHCV was recorded maximum in Rawalpindi (Table 3) which was 6.1% in Swat. The prevalence of AntiHCV was found equal in both location (Gujrat and Sialkot) and significantly lower 4.9 and 3.8% for Mirpur and Peshawar respectively (Table 3). The seroprevalence HBsAg was found highest in Swat 5.1% but it was lower in Sialkot (1.4%) and Rawalpindi where as seroprevalence of HBsAg for Gujrat (3.8%), Mirpur and in Peshawar. The seroprevalence values of HBsAg and AntiHCV was found equal in Mirpur and Gujrat where as AntiHCV is much higher than HBsAg in Rawalpindi but slightly higher in Sialkot. It was observed that the seroprevalence of AntiHCV is slighter higher than HBsAg in Swat and Gujrat.

Tables 1, 3 represents the prevalence of hepatitis B surface antigen (HbsAg) and hepatitis C antibodies (AntiHCV) in the male

Table 1: Seroprevalence of HBV and HCV

Blood samples screened	HbsAg & HCV reactive	Anti-HCV reactive	Prevalence & Seroprevalence
647	21-59	38	3.2-9.1 %

Table 2: Seroprevalence of HBV in six district of Pakistan

Districts	Blood samples screened	HbsAg reactive
Gujrat	104	04
Mirpur	76	03
Peshawar	103	05
Rawalpindi	197	03
Sialkot	70	01
Swat	97	05

Table 3: Seroprevalence of HCV in six districts of Pakistan

District	Blood samples screened	Anti-HCV reactive
Gujrat	104	06
Mirpur	76	03
Peshawar	103	05
Rawalpindi	197	14
Sialkot	70	04
Swat	97	06

population from six districts of Pakistan like Rawalpindi, Gujrat, Sialkot, Mirpur, Peshawar and Swat. The results obtained in this study showed that prevalence of hepatitis C was higher than prevalence of hepatitis B. In general population from six district of Pakistan. Similar finding was also given by Qazilbash *et al.* (1998) for hepatitis B in general population of Rawalpindi and Islamabad. Furthermore results obtained for hepatitis B in this study also closed to the results published by Mistik *et al.* (1991) for healthy blood donors.

In this study the seroprevalence of hepatitis C found 5-8% where as seroprevalence of hepatitis C up to 14.5% was found in the patients admitted in Pakistan Institute of Medical Sciences Islamabad, which proved that seroprevalence of hepatitis C is very low in general population than hospitalized patients (Khan *et al.*, 2001). Results of hepatitis B and C virus from blood samples obtained in this study also supported by results obtained by Mujeeb *et al.* (2000) which described that seroprevalence of hepatitis B and C virus infection among college going students are significantly low than 30% seroprevalence in paid blood donors and about 7% in ordinary blood donors.

The epidemiology of liver disease directly correlates with the socioeconomic and hygienic conditions throughout the world. The incidence of acute viral hepatitis is lowest in the developed

countries like Europe and America and highest in the countries of Asia and Africa. In Pakistan control of hepatitis needs improvement in sanitary conditions, proper disposal of waste. Health education and personal hygienic condition. Fortunately awareness of the problem has increased and efforts have to prevent water contamination.

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