ORIGINAL ARTICLE

PREVALENCE OF HEPATITIS B VIRUS INFECTION IN YOUNG STUDENTS OF ANAND

Supekar Shilpa N[1], Patel Harshid L[2]

[1]Tutor, Department of Microbiology, [2]Assistant Professor, Pathology Department, Gujarat Adani Institute of Medical Sciences, Bhuj, Kutch, Gujarat, India.

Correspondence:
Dr. Shilpa N. Supekar, E-mail : supekarshilpa@yahoo.co.uk

ABSTRACT

Introduction: Hepatitis B virus (HBV) infection is one of the most common infection in the world with significant & serious public health implications. The disease may lead to late complications like chronic hepatitis, liver cirrhosis & hepatocellular carcinoma. The present study is aimed to know the prevalence of this serious infection among the young students of college in Anand.

Material & Methods: HBsAg is the first serological marker in acute HBV infection and is detected 2 – 4 weeks before alanine aminotransferase level become abnormal and 3 – 5 weeks befor symptoms of Jaundice. This study is conducted among the young students from whom blood samples were collected. Serum was separated and assayed by Rapid Immunochromatographic Assay - INSTACHK HEPATITIS (One Step HBsAg Test) kit having sensitivity of 98.89 % and specificity of 100 %.

Results: Among the total 1152 students, 08 cases (0.694 %) were found infected with HBsAg.

Conclusion: The present study revealed that rate of HBsAg infection is quite low compared with other studies conducted in different population of different area. Half of the infected individuals had past history of surgery or liver disease.

Key words: Australia Antigen, HBsAg, Hepatitis B Virus, Prevalence

INTRODUCTION

Hepatitis B virus (HBV) is a serious public health problem worldwide and major cause of chronic hepatitis, liver cirrhosis and hepatocellular carcinoma.[1] It was estimated that approximately 2 billion people have serological evidence of past or present HBV infection. More than 350 million are chronic carriers of HBV.[2]

Hepatitis B is an infectious liver disease cused by Hepatitis B virus[3]. HBV infections occur only if the virus is able to enter the blood stream and reach the liver.[4] Once in the liver, the virus reproduces large number of new viruses into the bloodstream. The body also produces antibodies which circulate in the blood to destroy the virus and protect against future infection of hepatitis B. During the infection and recovery process, the liver may not function normally causing illness that affects the entire body.

Hepatitis commonly results from a virus, HBV infection, although recognized 40 years ago with the identification of the Australia Antigen, remains a global health problem.[5] One of the major determinant of outcome of acute HBV infection is age and immune competence at the time of infection. HBV infection is typically subclinical and a large percentage of acute cases proceed to chronic infection. If acquired in adulthood, as is often the case in area of lower endemicity, chronicity is uncommon and symptomatic acute HBV is more common.[6]

After a person exposed to virus, the serologic course of HBV infection begins approximately 6 to 10 weeks after exposure with the appearance of HBsAg, a marker of active HBV replication and detectable in serum upto 21days.[7] Hepatitis B virus infection is major cause of morbidity and mortality in humans and it is endemic all over the world.[8]

India is a large country with a population of 920 million. The HBV prevalence rate is 2 to 8 % with an approximate carrier pool of 40 million. The HBV infection rate varies in different regions of the same country as well HBV prevalence is more in south India than west India.[9,10]

OBJECTIVES

The study conducted to find out awareness of Hepatitis B virus infection, prevalence of hepatitis B virus infection in young students and to assess probable mode of transmission of Heptitis B virus infection.

MATERIALS & METHODS

This study was conducted among all students of M. B. Patel Science College Managed by Charotar Education Society & Affiliated to Sardar Patel University at Vallabh Vidyanagar. Blood Samples of all the students were collected by ideal venipuncture with all the precautions. All the samples were collected in plane vacutte & then serum was separated. Only those serum specimens that are clean, clear & with good fluidity were used for the assay. Those specimens that are hemolysed, thickened or lipemic were not used for assay.

All these specimens were assayed by Rapid Immunochromatographic assay - INSTACHK HEPATITIS (One Step HBsAg Test) kit having sensitivity of 98.89 % and specificity of 100 %. It is one step Test for qualitative detection of Hepatitis B surface antigen in serum. The presence of HBsAg can be detected within 10 to 15 minutes.

RESULTS

We have assay total 1152 specimens (number of total subjects in this study). Out of all these, only 08 specimen were found Positive (0.694 %). Sex wise distribution of HBsAg Positive cases revealed 05 (62.5 %) infections in male and 03 (37.5 %) infections in female.

Table 1: History wise distribution of HBsAg Positive cases

Past history	Students tested	HbsAg Positive	Prevalence rate (%)
Surgery	112	2	1.78
Liver Disease	95	2	2.10
Vaccination	127	1	0.78
Previous Infection	122	1	0.81
Jaundice	262	1	0.38
Tattooing	183	1	0.54
Blood Transfusion	51	0	0.0
Dental Treatment	98	0	0.0
Healthy Indivisual	102	0	0.0
Total	1152	8	0.694

Above table shows that maximum Hepatitis B infection were found in the adults having history of some liver disease. While infection rate in adults having history of previous blood transfusion, dental surgery & healthy were NIL.

DISCUSSION

Hepatitis B virus is a serious public health problem worldwide & major cause of Chronic Hepatitis, Liver Cirrhosis & Hepatocellular Carcinoma. Our study is compared with study of other authors as follows.

Table 2: Comparison of various studies on HBsAg prevalence

Year	Author	Subjects	Infected cases	Infection Rate %
1994	Michel C et al[11]	666	173	26.0
2002	S.S. Sudan et al[12]	17060	5203	3.5
2003	Pirre Van Damme et al[13]	839 million	160000	0.19
2010	B. R. Tiwari et al[14]	16557	131	0.79
2010	Present Study	1152	08	0.694

So, infection rate in present study is 0.694 % which is lower than study of Michel C et al 26 % , study of S.S. Sudan et al 3.5 %, study of B.R. Tiwari et al 0.79 % & higher than study of Pirre Van Damme et al 0.19 %

CONCLUSION

The present study revealed that there are 08 cases of Hepatitis B virus infection among the total 1152 cases studied in young students of M.B.Patel Science College. The present study also revealed that rate of HBsAg infection is quite low compared with other studies conducted in different population of different area. The present study shows that young adults having past history of surgery and liver disease were more prone to the infection of Hepatitis B virus.

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