

Frequency of Hepatitis-D in HbsAg Positive Cases at Peoples University of Medical & Health Sciences for Women Hospital Nawabshah

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ABSTRACT

Objective: To find out the frequency of delta virus (HDV) in HBV positive patients

Study Design: Observational Study

Place and Duration of study: This study was conducted at the Department of Medicine PUMHS Nawabshah from 01-01-2011 to 31-12-2011.

Materials and Methods: 200 adult patents of conformed Hepatitis B were included in the study blood samples of all the patients were screened for HDV by Elisa method / PCR during period of one yare.

Clinical status of positive and negative patients was also compared.

Results: Anti HDV was found in 32 patients (15%1) among them 20 (62%) were male and 12 (38%) were female.

Conclusion: The prevalence of HDV infection in HBV +ve patients is significant our area.

Primary eradication of Hepatitis B virus is required

Key Words: Hepatitis D virus, in chronic Hepatitis B Sindh.

INTRODUCTION

Hepatitis D virus (HDV) is a defective RNA virus that depends on the hepatitis B surface antigen (HBsAg) of hepatitis B virus for its replication, developing exclusively in patients with acute or chronic hepatitis B¹. Simultaneous infection with HDV tends to accelerate the progression of chronic hepatitis B virus (HBV) to chronic active hepatitis, cirrhosis, and hepatocellular carcinoma and mediates fulminant hepatitis. Approximately 5% of patients with chronic hepatitis B infection worldwide are infected with hepatitis D virus. Its prevalence in Italy, eastern Europe, and western Asia is higher than in the rest of the world, reaching 83.3%, 8.3%, and 12.5% in Romania, Italy, and Russia, respectively^{2,3}.

A recently published large sample size study demonstrated in Pakistan seropositivity of HDV infection in 16.6% and disease is more common in central part of country⁴. This virus can not live or replicate unless with the envelop of Hepatitis B-Virus and similar to healthy carriers of hepatitis B⁵. It is estimated that 5% of hepatitis B surface antigen (HbsAg) positive carriers are infected with HDV⁶. It is known that coexistent infection with HDV tends to accelerate the progress of chronic HBV infection to chronic Hepatitis, cirrhosis and hepatocellular carcinoma⁷. Hepatitis Delta virus (HDV) and Hepatitis B virus (HBV) co-infection is well known to induce a spectrum of acute and chronic liver diseases which further advance to cirrhosis, fulminant hepatitis and hepatocellular carcinoma (HCC)⁸. In Africa, the Middle East and southern Italy, up to 24% of carriers of Hepatitis B virus surface antigen (HBsAg) have

markers for HDV. Conversely, infection with HDV is uncommon in the United States⁹.

My rational is the determine the frequency of delta virus infection in hepatitis B+ve cases in the local population report at Peoples university of Medical and Health Sciences Nawabshah.

MATERIALS AND METHODS

This study was conducted at Medical Department of Peoples University of Medical & Health Sciences for Women Hospital Nawabshah during the one year period from 01-01-2011 to 31-12-2011. 200 patients aged between 15-60 years of both sexes, males 124 (62%) & 76 (38%) females, were confirmed cases of Hepatitis B by Elisa & PCR were screened for HDV-anti bodies, after informed consent, and were included in the study. Patients below 15 years, HCV +ve patients, in malignancy & Patients on Dialysis were not included in the study. This is an observational study,

Patients fulfilling the inclusion criteria were admitted in Medical Unit-I of PUHMS,Hospital Nawabshah. After taking detailed history and doing clinical examination, were subjected to relevant investigations i-e blood anti HDV antibodies on Elisa and PCR.

Other important investigations like HBeAg, Anti HBe antibodies, HBV-DNA, Serum ALT, S. Albumin & Haemoglobin level of each Patients were also carried out.

After collection of data analysis and comparison between anti,HDV+ve and Anti HDV -ve (all HBsAg+ve) was made.

It was conducted by using statical package for social Science (SPSS) software Version 16.

Effect modifier like Gender & age was controlled by stratification.

RESULTS

A total of 200 patients with HBsAg+ve were observed over a period of 12 months. From 01-01-2011 to 31-12-2011 the demographic characters are presented in table 1. There were 124 (62%) Male Patients & 76 (38%) females. Age limit was 15-60yaer – more were between 20-40 year of age.

Majority of the patients were married & belong to rural area Sind. The male patients were younger than females Hbs Ag was +ve in all patients by Elisa /PCR.

HDV RNA was detected in 25 patients: (12.1%). Anti HDV antibodies were positive in 32 Patients (15.1%) 20 males (62%) And 12 (38%) females. Among anti HDV +ve Patients anti HBe was present in 20 Patients (62%).

In anti HDV Negative patients it was dected in 35 (20.83) patients (P=0.30). HBeAg, marker of active replication of HBV was+ve in 80 (45%) HDV positive patients while it was negative in 60 (59.75) patients.

Table No.1: Clinical characteristic of 200 study patients

Variable	Number	Percentage (%)
Male	124	62
Female	76	38
Rural	150	75
HBeAg (reactive)	80	45
Anti-HBe	20	62
Anti-HDV	32	15.1
HDV-RNA (Detected)	25	12.1
Hepatomegaly	62	13.1

Table No.2: Comparison between Anti-HDV positive and Anti-HDV negative Groups.

Variable	Anti-HDV Positive(n=50). No.(%)	Anti-HDV Negative (n=50). No. (%)
Gender		
Male	20 (62.)	104 (80)
Female	12 (38)	64 (88)
HBeAG (Reactive)	80 (45)	60 (59.75)
Anti-HBe	32 (15.1)	168 (84.9)
Age (in years)	32±50	20±30
Serum ALT (IU/L)	70±95	50±60
Serum Albumin (g/dl)	2.5±0.5	2.81±0.61
Haemoglobin	10±12	10±12

Serum ALT was higher in 27 (84.37%) anti-HDV+ve Patients than who were anti HDV-ve Patients 5 (15.63%). While decline in serum Albumin & Hb was almost same in both groups.

Hepatomegaly was present in 62 (30.1%) patients remaining have normal liverspan evidenced by Ultrasound. As shown in Table 2.

DISCUSSION

The Hepatitis D, Co-infection is increasing in Pakistan, being high prevalent country for HBV infection, preventive strategies against HBV infection seem to be insufficient.

The global epidemiology of hepatitis D is changing, on one hand the incidence of hepatitis D virus infection in traditionally prevalent areas of southern Europe e.g italy has declined form 23% to 8.3%. over a period of 10 year form 1987 to 1997¹⁰⁻¹².

The results of our study shows the HDV +ve cases serologically 15.1% which is lower as compared to some Pakistani studies⁹⁻¹³.

Kirpal Das, Hassan ali et,al , showed the overall sero+ve rate of anti HDV 31.5% in a study conducted at JPMC Hospital Karachi in 2008⁴.

Mumtaz et al reported he prevalence of anti-HDV+ve in Pakistan 16.6%⁵. some authors stated that a large ratio exists in middle of the county ranging from 20-60-%¹³.

Our study showed , the direction relation of HDV infection with markers of chronic HBV infection .

For example in anti-HBe+ve Pt: HDV superiofeation was found in 62%Pt: with low rate of HDV replication (12.1%).

Lee et al reported that HBV, DNA was detected in 62% of their Patients: without HDV superirfection while it was detected in only 10% of Patients with HDV super infection¹⁴.

These results, show that HDV suppresses the replication of HDV genome and HBV-DNA to very low of undeletable levels¹⁵⁻¹⁶.

Various studies reported that Pt: that chronic HDV show severe chronic Hepatitis¹⁻¹⁵. In our study we observed significantly high ALT in pt: with HDV super infection (27/32 %).

This is almost same with most of previously studied conducted & deferent places of the Pakistan and the world¹⁴⁻¹⁵⁻¹⁶

CONCLUSION

Increasing rate of HDV infection is observed in our area, making the HDV related liver diseases more severe.

Our recommendations are, to prevent HBV infection with vaccine & personal hygienic care. Every HBs+ve Patient: should be screened for anti-HDV super infection.

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