

Original article

Prevalence Of Hepatitis Delta Virus Superinfection In chronic HBV infection

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Summary

Background: Viral hepatitis is a common cause of morbidity and mortality all over the world. HDV is another cause of severe fulminate hepatitis and chronic liver disease.

Objective: This is a prospective study aimed at finding the prevalence of HDV superinfection based on positive anti-HDV IgM type in patients with chronic liver disease and carriers of HBV infection.

Patients and Methods: 72 patients with C.L.D and 36 patients who were asymptomatic HBV infection were screened for HDV superinfection by ELIZA IgM Ami- HDV Antibody.

Results: In this study we found that the prevalence of HDV superinfection is 8.3% for carriers which is comparable to that of some mediterranean countries and for chronic liver disease 20.83%. We also found that there is a significant relationship of HDV prevalence with age, history of blood transfusion and severity of chronic liver disease.

Conclusion: HDV infection is not uncommon in Iraq. For better evaluation, asymptomatic HBV carriers and patients with HBV C.L.D should be screened for HDV infection.

Key words:- HBV , HDV infection

Introduction

Viral hepatitis is a systemic infection affecting the liver, almost all cases of viral hepatitis are caused by one of five agents: HAV, HBV, HCV, HDV and HEV⁽¹⁾. HDV infection: (delta Ag) was discovered by Rizzetto and associates in 1977⁽²⁾.

HDV infection has a worldwide distribution. In Mediterranean countries (North Africa, Southern Europe and the Middle East) HDV infection is endemic among those with HBV and outbreak of HDV infection occurs either of coinfection with acute HBV or superinfection in those already infected with HBV.

Worldwide 15 millions individuals are infected with HDV, areas of high prevalence are Italy, certain parts of eastern Europe, amazon basin, Columbia, Venezuela, western Asia and some pacific islands⁽³⁾. The mode of HDV transmission are percutaneous exposure, I.V drug abusers and blood transfusion.

The aim of this study is to find the prevalence of HDV superinfection based on positive anti-HDV IgM type in patients with chronic liver disease and carriers of HBV infection.

Patients and Methods

This is a prospective study conducted in Al-Shaheed Adnan's Hospital; (Gastro-entrolgy and

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Hepatology center) and Al-Yarmouk Teaching Hospital; (Medical wards and outpatients clinic) during the period between August 1998 August 1999.

One-hundred eight consecutive Iraqi patients were included in this study, all of them were HBsAg positive tested by ELISA method. All patients were assessed with special questionnaire, physical examination and then laboratory investigations which included liver function test: total serum bilirubin (direct & indirect), ALT, AST, S. Al-Phosphates, PT, serum albumin, serum globulin and abdominal ultrasound.

For patients with chronic liver disease (C.L.D) an upper gastro-intestinal endoscopy and liver biopsy were done. According to the clinical features and investigations, we divided our patients

into two main groups:-

Group/A/:- Thirty six patients who are carriers for HBsAg but look healthy and have normal LFT (Asymptomatic HBV carriers).

Group/B/:- Seventy two patients who have C.L.D (chronic hepatitis or liver cirrhosis who were diagnosed according to the recognized defined criteria⁽⁴⁾). All data were analyzed and severity of C.L.D was assessed by using child's Pugh scoring⁽⁵⁾

Results

In this study 108 patients were included, 73 were males and 35 were females, with mean age 41.3. The over all prevalence of Delta V. was 18/108; (16.66%). In C.L.D it was 15/72; (20.8%) which is higher than the prevalence in Asymptomatic carriers 3/36 (8.31) as in table (1).

Patient groups	No.	Delta V.	%
C.L.D	72	15	20.83
Asymptomatic carriers	36	3	8.3
Total	108	18	16.6

TABLE (1)
Prevalence of Delta V.

Table (2) Demonstrate that in C.L.D and carriers delta hepatitis is mostly seen in 4th & 5th decade of life.

Decade	Asymptomatic Carriers	HDV positive	%	HBsAg C.L.D	HDV positive	%
1 st	1	-	-	3	-	-
2 nd	4	-	-	-	-	-
3 rd	7	-	-	7	2	28.57
4 th	10	1	10	14	4	28.57
5 th	10	2	20	27	5	18.51
6 th and above	4	-	-	21	4	19.04
Total	36	3		72	15	-

TABLE (2)
Age relationship of Delta V. in HBsAg C.L.D and HBV carriers

Table (3) indicate that the more sever the liver disease (score B & score C) child's Pugh classification the more is the prevalence of delta hepatitis and this difference is statistically significant. The majority of patients with delta hepatitis have portal hypertension as shown on endoscopy 14/15(93.33%).

Degree value	No.	HDVPositive	%	P
Score A	-	-	-	
Score B	34	3	8.82	

TABLE (3)
Child's Pugh score

Patients who had received blood transfusion in the past have higher prevalence of delta hepatitis and that was statistically significant 11/30; (33.3%) Vs. 4/42(10%) as shown in table (4).

Patents value Category	Positive Delta V.	Negative Delta V.	Total	% of the positive	P
History of Blood Transfusion	11	19	30	33.3	
0.005 No history					

TABLE (4)
Blood transfusion and HDV prevalence.

Discussion and Conclusion

Delta hepatitis is the least common form of chronic viral hepatitis but it is the form that is most likely to lead to cirrhosis and end stage liver disease⁽⁶⁾. The over all prevalence of Delta V. in this study was 18/108(16.6%) which is less than what was reported from a Japanie's study (21.1%)⁽⁷⁾.

Regarding carriers the prevalence of Delta hepatitis was 3/36(8.3%) which is slightly less than the reported prevalence in other studies (Spain 9.8%⁽⁸⁾; Japan 10%⁽⁷⁾). In C.L.D due to HBV infection the prevalence of Delta V. was 15/72 (20.83%) which is less than what was reported by Nakasone-et al (40%) in a Japanie's study⁽⁷⁾ and that from a Turkish

study by Degerekin - et al (20-50%)⁽⁹⁾. In this study the seropositivity tends to increase with increasing age as shown in table (2). This is in agreement with the results of other studies⁽⁷⁾. Regarding the relationship between prevalence of Delta V. hepatitis and severity of C.L.D, this study shows that there is increasing prevalence of Delta hepatitis infection with increasing severity of liver disease as judged by child's Pugh scoring; this was statistically significant as shown in table (3). We also found a significant relationship between history of blood transfusion and prevalence of Delta hepatitis, being more in patients with history of blood transfusion as shown in table (4), this is probably because these patients in addition to blood transfusion have also been frequently hospitalized, and subjected to instrumentations and multiple injections. In conclusion HDV superinfection is not uncommon in patients with chronic HBV infection in this country especially in patients with more severe C.L.D. HDV need to be screened in all patients including carries as this infection is considered as a major risk factor for development of sever liver disease. For prevention of Delta V. infection, HBV mass vaccination is recommended in addition to improvement in social and hygienic conditions.

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