The Role of HCV in The Etiology of Liver Cirrhosis in Southeast Turkey

Halil DEĞERTEKİN , Vedat GÖRAL, Mine TURHANOĞLU, Eralp ARIKAN

Summary: *Hepatitis B Virus (HBV) is the most important etiological factor in the chronic liver diseases in Turkey. This study was done to investigate the role of Hepatitis C Virus (HCV) in the HBV negative liver cirrhosis cases. Totally 60 cases with liver cirrhosis were studied. In 25 case, HBV was responsible for liver cirrhosis. The rest 35 cases serological markers of HBV were found negative. Seventheen percent of these cases, anti-HCV was positive and HCV was accepted as etiological agent. In the rest cases (83% of HBV negative group) due to the negativity of anti-HCV any other etiologic factor (virus/viruses) was considered.*

Anti-HCV has been found at the different ratios in several studies done not only in Turkey, but also in the world. Some geographical factors may be important to explain the low prevalance of HCV in Southeast Turkey. Further investigations are needed for this subject.

Key Words: Liver Cirrhosis, Hepatitis C Virus.

For many years, it has been suspected that chronic infection by Non-A, Non-B (NANB) hepatitis virus (or viruses) is a frequent causes of chronic liver disease; however, in the absence of specific virologic confirmation, this possibility could not be substained (1). Recently, a portion of the genome of a NANB hepatitis virus, designated as hepatitis C virus (HCV), was cloned, and a specific immunoassay for anti-HCV antibodies (anti-HCV) was developed (2). Subsequently, anti-HCV were found in a high proportion of patients with posttransfusional chronic NANB hepatitis as well as in patients with chronic liver disease without obvious paranteral exposure to hepatotropic viruses (3). These findings suggest that HCV may be an important cause of chronic liver disease.

In our region, HBV is the most important etiological factor in liver cirrhosis (4-7). The aim of this study was to investigate the prevalance of anti-HCV in patients with liver cirrhosis.

MATERIAL and METHODS

Sixty patients with liver cirrhosis were studied in Dicle University, School of Medicine Division of Gastroenterology. Thirty two patients were men, twenty eight patients were women, and mean age was 37.4 years (24-58 years). As a control group, 115 apparently healthy volunteer blood donors were studied. Diagnosis of liver cirrhosis was done by physical examination, laboratory findings, liver biopsy, endoscopic and ultrasonographic examinations.

Serum specimens were kept frozen at-20°C until tested. Antibodies to HCV were detected using the Ortho HCV Test System. This assay uses a recombinant HCV antigen (C100-3) synthesized in a yeast that contains 363 amino acids. HBsAg, Anti-HBe, IgG anti-HBc were studied by radioimmunoassay method.

Division of Gastroenterology,
Division of Microbiology.
School of Medicine Dicle University Diyarbakır/TÜRKEY.

Tablo I: Serological findings in 60 patients with liver cirrhosis.

Case No.	Findings	Comment	Frequency (%)
22	HBsAg (+) IgG anti-HBc (+) anti-HCV (-)	HBV	37
3	HBsAg (+) IgG anti-HBc (+) Anti-HCV (+)	HBV HCV	5
6	HBsAg (-) IgG anti-HBc (-,+) Anti-HCV (+)	HCV	10
29	HBsAg (+,-) IgG anti-HBc (-) Anti-HCV (-)	?	48
60			100

RESULTS

1) Anti-HCV was positive in only 1 out of 115 volunteer blood donors (0.8%).

2) The results in patients with liver cirrhosis were as follows (Table 1,2):

a) In 22 patients anti-HCV negative, but serological markers of HBV were positive (HBsAg, IgG anti-HBc, HBeAg/Anti-HBe). This group was accepted as HBV related liver cirrhosis cases.

b) In 3 patients both HBV and HCV related serological markers were positive (HBsAg, IgG anti-HBc and anti-HCV). HBV and HCV were probably together responsible for these cases.

c) In 6 cases only anti-HCV was found positive.

d) In the rest 29 cases neither HBV related markers nor anti-HCV were found positive.

e) In HBV negative 34 cirrhotic patients, anti-HCV was detected in only 6 cases (17%). In the rest cases (83%), HBV and HCV were negative and any other etiological factor or factors (virus ?) were considered.

Tablo II: Serological findings in HBV negative patients with liver cirrhosis.

Case No.	Findings	Comment	Frequency (%)
6	Anti-HCV (+)	HCV	17
29	Anti-HCV (-)	?	83
35			100

DISCUSSION

Chronic liver diseases are very common in our country and HBV is the most important etiological factor. The frequency of HBV in liver cirrhosis has been detected 70-90% in several studies done different parts of Turkey (8,9).

Chronic infection by blood-borne NANB hepatitis virus is a well known cause of chronic liver disease, particularly in patients with histories of exposure to parenterally transmitted viral disease. As known, recently, antibody to NANB hepatitis virus, tentatively named anti-HCV, was detected in approximately 80% of patients with post-transfusional NANB chronic hepatitis. HNANB related test (Anti-HCV) has been widely used to investigate the etiology of cryptogenic and HBV negative cirrhosis. Some recent studies done in different parts of Europe and Japan have shown that anti-HCV is positive about 70% in cryptogenic cirrhosis and HBV negative chronic liver diseases (10,11,12).

In our country, some studies have done on this subject. Uzunalimoğlu et coll. Showed that anti-HCV is positive at the ratio of 76% in chronic liver diseases (8). Şentürk et coll. found this ratio as 32.1% in cryptogenic cirrhosis (9). In this study, we wanted to known the role of HCV in our region, Southeast Turkey. Totally 60 patients were studied.

In 22 patients the serological markers of HBV were positive. In 3 patients the markers of HBV and anti-HCV were positive, so they

seemed to be together responsible for chronic liver diseases. In the rest HBV negative 35 cases, Anti-HCV was positive in only 6 patients (17%). For this group HCV was accepted as etiological factor. On the other hand rest 29 HBV and HCV negative cases (83%) the etiological agent (or agents, virus?) has been unknown. This important result, is lower than those of others. The role of HCV in the etiology of chronic liver disease may be related to some geographical or other factors. Probably chronic HCV infection is not very important in Southeast Turkey. Therefore in HBV and HCV negative patients with liver cirrhosis another virus or viruses should be considered. Blood transfussions and parenteral infections are very common in our region. 50 other viruses and their routes of infection may be important in this area. Further investigations are needed for this subject.

REFERENCES

1. Alter MJ. Non-A, Non-B hepatitis; sorting through a diagnosis of exclusion. Ann Intern Med. 1989, 110, 583-585.
2. Choo QL, Kuo G, Weiner AJ, Overby LR, Bradley DW, Houghton M. Isolation of cDNA clone derived from a blood borne non-A, non-B viral hepatitis genome. Science 1989, 244; 359-362.
3. Kuo G, Choo QL, Alter HJ, et al. An assay for circulating antibodies to a major etiologic virus of non-A, non-B hepatitis. Science. 1989, 244; 362-364.
4. Değertekin H, Göral V, Canoruç F, Arıkan E. The serological markers related to HBV in patients with liver cirrhosis. Journal of Ankara Medical School. 1989,11; 79-84.
5. Değertekin H, Kestellioğlu F. The prevalance of HBsAg in healthy people and several liver diseases in Turkey. Asian Medical Journal. 1986, 29: 125.
6. Değertekin H, Uzunalimoğlu Ö, Göral V. Features of liver cirrhosis in the Southeast Turkey (Analysis of 800 cases). II. Etiological, Clinical and Immunological Features. Journal of Istanbul Medical School. 1986, 49: 61-69.
7. Değertekin H, Canoruç F, Göral V, arıkan E. The importance of viral hepatitis in Turkey. The World Congresses of Gastroenterology. Sydney. Australia, 1990, 26-31 August.
8. Uzunalimoğlu O, Dönderici Ö, Çetinkaya H, Karayalçın S, Sipahi N. The prevalance of HCV antibody in chronic liver diseases. Gastroenterology. 1990, 1: 1, 15-17.
9. Şentürk H, Sonsuz A, Özdemir S, Gürakar A, İyigün C, Akın P. The prevalance of Anti-HCV in various types of liver diseases and high risk groups. Gastroenterology. 1991, 2 (3), 334-338.
10. Jose M, Sanchez-Topias, Josep M, Barrera, Josep Costa et al. Hepatitis C virus in patients with nonalcoholic chronic liver diseases. Ann Intern Med. 1990, 112: 921-924.
11. McFarlane IG, Smith HM. Hepatitis C virus antibodies in chronic active hepatitis. Lancet 1990, 335, 754.
12. Kusuya Nishioka. Hepatitis C virus antibody and hepatocellular carcinoma. Update, Ortho Diagnostic Systems Inc. 1990, 4: 2-3.