

Original article

Lichen planus and hepatitis C virus infection: An epidemiologic study

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Abstract *Background* Lichen planus is an immunologically mediated skin and mucous membrane disease, which has been described in patients with hepatitis C virus-related liver disease, with variable frequency.

Objective The purpose of this study was to determine the association of lichen planus with hepatitis C virus related liver diseases.

Methods We tested sera of 55 patients with lichen planus for HCV antibodies by means of a second generation enzyme linked immunosorbent assay. Serum levels of aspartate aminotransferase (AST) and alanine aminotransferase (ALT) were simultaneously determined in all the patients. During the same period, a group of 110 patients admitted to the Dermatology Department, RGH, Rawalpindi, served as a control.

Results Of the 55 patients with lichen planus, 18 had HCV antibodies (prevalence 32.7%), of the 110 control patients 8 had HCV antibodies (prevalence 7.2%). There was significant difference between the two groups. The ALT was raised in 21 patients with lichen planus, and 15 of them also had an elevated AST level. In the control patients, the AST level was raised in 4 of the 110 patients, 3 also had an elevated ALT level. The number of patients with an abnormal transaminase level significantly differed in the two groups (38.1% in the lichen planus group, and 4% in the control group).

Conclusion These results support a possible relationship between LP and chronic hepatitis C and the hypothesis that LP may be associated with chronic liver diseases as a result of a cytotoxic attack on the hepatocytes.

Key words

Lichen planus, hepatitis C virus

Introduction

Hepatitis C virus (HCV), identified in 1989, is an RNA virus that is a major cause of acute and chronic hepatitis. Both are asymptomatic in most patients, however, chronic hepatitis C is a slowly progressive disease and results in severe morbidity in 20% of infected individuals.¹ Majority of transfusion associated cases of

hepatitis are due to HCV,² as blood donors are now screened for HCV antibodies, the risk of post-transfusion hepatitis is declining.³ Low level of sexual transmission is also possible.⁴

According to WHO about 170 million people i.e. 3% of the world's population are estimated to be infected with HCV with prevalence of 0.5% to more than 10% in population samples around the world.⁵ Prevalence of HCV infection varies from

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4% to 7% in various segments of Pakistan.⁶

Chronic hepatitis C is associated with a variety of disorders, particularly as regards dermatology. The most frequent of these are mixed cryoglobulinemia with leukocytoclastic vasculitis, porphyria cutanea tarda and lichen planus.¹ In 1991 Mockni *et al.*⁷ described a patient in whom lichen planus (LP) developed during HCV-induced chronic hepatitis. Since then numerous cases of HCV-associated LP have been published, and association of chronic hepatitis with lichen planus has been established, especially in Italian patients.⁸ LP is considered by certain authors as a possible marker of HCV infection. The prevalence of HCV infection in patients with LP varies considerably from one geographic area to another, ranging from 4% in northern France⁹ to 62% in Japan.¹⁰ On the other hand, studies from Great Britain have failed to reveal any association. Similarly another study from France by Cribier *et al.*¹¹ found no difference with regard to HCV prevalence in patients with lichen planus and in patients with other dermatoses. However, Jubert *et al.*⁹ described six patients with lichen planus and chronic HCV infection. Rebora¹² reported that prevalence of HCV antibodies was 14% in 87 patients with lichen planus.

We describe the prevalence of HCV antibodies in a group of 55 patients in a case-controlled study.

Patients and methods

Between January, 2002 and February, 2003, 55 patients with lichen planus were diagnosed on the basis of usual clinical features and specific histologic findings. Patients suspected of drug-induced

lichenoid eruption were not included. There were 22 women, 16-75 years of age (average 43), and 33 men aged 11-55 years (average 52.8). Of the 55 patients, 19 had erosive lichen planus of the mouth, while 3 had associated genital lesions.

During the same period, a group of 110 patients presented to the dermatology department for various dermatological diseases excluding lichen planus served as control. The group included 60 females 7-80 years (average 37.5) of age, 40 males 12-60 years of age (average 51.5).

Sera from all the patients were tested for HCV antibodies by means of second-generation enzyme-linked immunosorbent assay. The serum levels of aspartate aminotransferase (AST) and alanine aminotransferase (ALT) were simultaneously determined in all patients. The modified chi square test was used for statistical comparison of the two groups.

Results

The number of male patients with lichen planus was significantly higher than the control group. The age of male patients did not differ in the two groups, whereas the age of female patients with lichen planus was higher than in the control group. Of the 55 patients with lichen planus, 18 had HCV antibodies (prevalence 32.7%), of the 100 control patients 7 had HCV antibodies (prevalence 7%). There was significant difference between the two groups. The ALT was raised in 21 patients with lichen planus, and 15 of them also had an elevated AST level. In the control patients, the AST level was elevated in 4 of the 100 patients, 3 also had an elevated ALT level. The number of patients with an abnormal transaminase level significantly differed in

the two groups (38.1% in the lichen planus group, and 4% in the control group).

Discussion

A frequent occurrence of liver abnormalities has been reported in patients with lichen planus.^{13,14} Chronic active hepatitis especially due to hepatitis C virus is suspected to be a contributing factor. Significant association of erosive lichen planus with chronic hepatitis was demonstrated in a case controlled study.¹⁵ Recently this association between lichen planus and liver disease has been questioned. A study in 180 English patients with oral lichen planus failed to show any significant association with liver dysfunction.¹⁶ Similarly no difference was found with regard to HCV antibodies prevalence in patients with lichen planus and in patients with other dermatoses by Bernard *et al.*¹¹ in 1992. The prevalence of HCV in patients with lichen planus varies considerably from one geographic area to another, ranging from 4% in France⁹ to 62% in Japan.¹⁰ In our study a strong association between lichen planus and HCV infection was revealed. The prevalence of HCV infection in our community ranges between 3-7%.⁶ In our patients with lichen planus the HCV prevalence of 32.7% cannot be a chance association. In patients with lichen planus HCV may be etiologically related, and these patients should have assessment of liver function for early detection and prevention of possible liver damage.

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