Abstract

Background Lichen planus (LP) is classified as a papulosquamous disease. It has been associated with liver disease, particularly hepatitis C virus (HCV) infection, in several studies. Most of these reports, especially the larger series, were conducted in Europe and Japan.

Objective We conducted a case–control study in Kerman, Iran to explore the association between LP and HCV.

Methods The study included 66 patients with LP (as cases; mean age = 39.7 ± 15.8 years; 31 female, 35 male) and 140 volunteer blood donors (as controls; mean age = 29.5 ± 8.4 years; 43 females, 97 males). An enzyme-linked immunosorbent assay (ELISA) was used to determine the presence of anti-HCV antibodies in all subjects in both groups. To confirm positive diagnoses, a second generation recombinant immunoblot assay (RIBA II) test was performed.

Results Lichen planus lesions were most frequently located on the trunk and extremities, and the most common clinical type was generalized LP (48.5%). One of the patients with LP (1.5%) and three of the controls (2.1%) were HCV-Ab positive. No significant difference was observed in HCV-Ab positive between the two groups (OR = 0.7; 95% CI = 0.1–6.9).

Conclusion The findings indicate that an investigation for HCV infection should not necessarily be performed in all patients with LP. It is recommended that further studies should focus on larger groups in other regions of Iran to determine whether testing for HCV infection is necessary in patients with LP.
In total, 140 Kermanian volunteers were selected randomly from amongst all blood donors at the Kerman transfusion center. The cases and controls were not matched. After obtaining their consent, controls were checked by a physician for LP and HCV risk factors. All case and control blood samples were tested by enzyme-linked immunosorbent assay (ELISA) and positive samples were rechecked using the second generation recombinant immunoblot assay (RIBA II) method to assess the presence of HCV-Ab.

The association between LP status (case/control) and the presence of HCV-Ab was investigated by calculating an odds ratio and a corresponding 95% confidence interval for comparing independent groups. The data were analyzed using SPSS version 10 (SAS Institute, Cary, NC).

Results

This study investigated the relationship between HCV antibody and LP. A total of 206 individuals were included in the study: 66 patients with LP and 140 healthy blood donors as the control group. The two groups were tested for the presence of HCV. Sex, age and clinical type and LP location were noted. The mean age of the patients was 39.7 ± 15.8 years and that of the control group was 29.5 ± 8.4 years. In the LP group, 31 individuals (47.0%) were female and 35 (53.0%) were male, and in the controls 43 (30.7%) were female and 97 (69.3%) were male. Classic lesions were observed in 19 patients (28.8%), dermatomal in five (7.6%), actinic in six (9.1%), follicular in three (4.5%), pigmented in five (7.6%), generalized in 32 (48.5%), annular in six (9.1%), hypertrophic in eight (12.1%) and atrophic in one (1.5%). Generalized and hypertrophic lesions were observed in five patients, generalized and follicular in two, actinic and pigmented in four, classic and hypertrophic in two, dermatomal and classic in one, actinic and follicular in one, follicular and dermatomal in one and annular and generalized in three. Some patients had more than one type of lesion. The location of LP lesions was as follows: 33 (50.0%) were found on the trunk and extremities, 21 (32.0%) on the extremities, six (9.0%) on the face, and six (9.0%) on the oral mucosa without skin involvement. There was involvement of hair in six cases (9.1%), nails in 17 cases (25.8%) and mucosa with skin involvement in 33 cases (50.0%).

Of the 66 LP patients for whom an HCV antibody test (ELISA) was carried out, one case (1.5%) was found to be antibody positive and the others were negative. In the controls, there were three subjects (2.1%) who were antibody positive.

The odds ratio was 0.7 in these two groups (95% CI 0.1–6.9), and there was no statistically significant difference between the two groups. In both the patients and the controls, liver function tests were performed but no abnormal findings were obtained.

Discussion

Lichen planus is a chronic inflammatory papular disease of the skin and mucous membranes. In this study, the mean age of the patients was 39.7 ± 15.8 years and most cases were in the range of 20–40 years old. Involvement was very similar in the two sexes, so the age and sex distribution of the disease corresponds with that found in previous studies.1,6,14 In this investigation, generalized lesions were observed most frequently (48.5%). The location of the lesions corresponded with that found by Bhattacharya et al. and other authors.1,9,14,15 Mucosal and nail involvement was observed. The rate of involvement was 50.0% for the mucosa and 25.8% for nails. In the work by Bhattacharya et al., mucosal involvement was present in 16.8% of cases. This difference may be attributable to the type of study performed, or to the race or involvement status of the patients.15

Lichen planus has been reported with other diseases. One of the most important of these is chronic viral hepatitis infection.1,6,14,16,17 Various studies have investigated the association of LP with HCV, in the light of which we carried out this study. Here, 66 LP patients were examined for HCV. We compared these patients with 140 healthy blood donors. The groups were not matched. One of the patients and three of the controls were antibody positive. The odds ratio was 0.7, so the difference between the groups was not statistically significant, the odds of the presence of antibody against HCV being no higher in patients than in the controls. Studies performed in other parts of the world have shown different results. In a study by Bearid et al. in the USA, 62 LP patients with a histological diagnosis were identified, and, of the 24 patients who were tested for HCV, four (17.0%) were found to be HCV positive, although in the USA HCV infection has been reported to occur in only 1.5% of the general population.1 In this investigation, the odds of the presence of antibody against HCV being no higher in patients than in the controls. Studies performed in other parts of the world have shown different results. In a study by Bearid et al. in the USA, 62 LP patients with a histological diagnosis were identified, and, of the 24 patients who were tested for HCV, four (17.0%) were found to be HCV positive, although in the USA HCV infection has been reported to occur in only 1.5% of the general population.1

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A study conducted in the USA on 340 LP patients, who were compared with 577 psoriasis patients as the first control group and 149,756 volunteer blood donors as the second control group, showed a significant association of LP with HCV.19 In another study in Italy, in which the association of mucosal LP with HCV was investigated, a group of 263 patients was found to be more frequently infected with HCV than the control group, and the difference was significant. The presence of HCV antibody in LP patients has been reported to vary from 4.0% in the north of France to 62.0% in Japan.20 Some studies, for example that by Van der Neij et al. on 55 LP patients in the Netherlands10 and that by Ibrahim et al. on 43 LP patients in Egypt,21 both of which used a control group for comparison, have indicated no association...
of LP and HCV. These contradictory results may be attributed to the high prevalence of HCV in some countries, such as Japan and southern Europe. Another possible cause is unknown epidemiological and immunological factors, such as HLA, which increase the prevalence of the association of LP with HCV in some parts of the world, such as Italy.\textsuperscript{10–13} In this study, patients had no history of liver disease, with no positive findings from clinical examinations and liver function tests. Thus, it seems that the HCV antibody test, which is costly and not available in all parts of the world, is not necessarily required for LP patients with no signs of liver disease. We recommend that studies be carried out in different parts of Iran to increase the sample size. A comparison of LP patients with and without liver disease would also be informative.

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References
