

# HCV seropositivity in patients with lichen planus

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## Abstract

**Objectives** To determine the frequency of HCV seropositivity in patients diagnosed with lichen planus (LP).

**Methods** This cross-sectional study was conducted in the Department of Dermatology Unit-II, Mayo Hospital, and Lahore. Sera of 100 patients of LP diagnosed clinically and by histopathology in doubtful cases were assessed for HCV seropositivity. The patients were screened for the presence of anti-HCV antibodies by second generation ELISA.

**Results** 14% of LP patients showed anti-HCV antibodies. Among these, 9 (9%) were females while 5 (5%) were males. Ages of the patients ranged from 3 to 70 years. Majority (64%) of the patients seropositive for HCV were 16 to 45 years of age.

**Conclusion** All patients of LP should be screened for HCV seropositivity to detect undiagnosed cases of hepatitis C virus.

### Key words

Lichen planus, hepatitis C, ELISA.

## Introduction

Lichen planus (LP) is a common inflammatory disorder that affects the skin, mucous membranes, nails and hair. The skin lesions appear as plane-topped, purple, pruritic, polygonal, papules and plaques. Mucosae of mouth, genitalia, esophagus, conjunctiva, urethra, anus, nose and larynx may also be involved. The skin lesions are commonly seen on wrist, shin, lower back and genitalia.<sup>1</sup> Genetic, endogenous and exogenous environmental factors like drugs and infections may interact to cause disease. Worldwide prevalence rate of LP is around 1.4% whereas in India it is around 0.76%.<sup>2</sup> LP is prevalent in

1-2% of population as oral premalignant condition. The high prevalence of HCV RNA in patients with LP provides some evidence for the role of HCV in its pathogenesis.<sup>3</sup> Rabii *et al.*<sup>4</sup> concluded in their study that 4.7% of HCV positive patients had oral LP. Another study conducted in Egypt by Amer *et al.*<sup>5</sup> discovered that twenty-one (70%) patients with LP were anti-HCV RNA positive. These studies showed that incidence of HCV seropositivity in patients of LP is on rise as compared to seronegative patients. This study aimed to determine frequency of concurrent hepatitis C virus seropositivity in LP patients. This would help in management of HCV cases thus reducing the disease burden of the society.

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**Table 1** Comparison of HCV seropositivity between male and female patients of lichen planus

	Female patients n (%)	Male patients n (%)	Total n (%)
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Anti-HCV-positive	9 (13.6%)	5 (14.7%)	14 (14%)
Anti-HCV-negative	57 (86.4%)	29 (85.3%)	86 (86%)
Total	66 (100%)	34(100%)	100 (100%)

## Methods

Patients presenting in dermatology department, Unit II, Mayo Hospital, Lahore fulfilling the inclusion criteria were enrolled. Patients taking drugs causing lichenoid eruptions i.e. quinine, thiazides,  $\beta$ -blockers, gold salts etc. were excluded from study.

Informed consent for the study was taken. Physical examination was done for location of lesions, size, color and shape. Sera of 100 patients were taken and tested for anti-HCV antibodies by second-generation ELISA in all patients.

## Results

100 patients were enrolled according to inclusion criteria. Females (66%) outnumbered males (34%) with female to male ratio of 2:1. Majority of the patients belonged to 41-50 years of age group. The mean age of patients was  $35.80 \pm 15.58$  years. Mean age of male patients was  $38.88 \pm 18.39$  years while that of female patients was  $34.21 \pm 13.80$  years. Out of 100 patients of LP, 14 (14%) showed anti-HCV antibodies in their serum. Among them, 9 females out of 66 while 5 males out of 34 were seropositive. Majority of the patients who were seropositive for HCV ranged between 16-45 years of age.

## Discussion

Hepatitis C infection is a global health problem. One of the prominent aspects of HCV is the frequent presence of cutaneous manifestations. LP is said to be one of them but whether it has a correlation with HCV or not is still under discussion.

Results of our study showed that 14% patients of LP were seropositive for HCV. Studies from different parts of the world show variable association between LP and HCV. A study by Amer *et al.*<sup>5</sup> from Egypt found a very high frequency in which 70% of their patients were seropositive for HCV. Tonsi and Samdani<sup>7</sup> from Saudi Arabia, and Sanchez<sup>8</sup> from Spain found approximately 20-25% HCV seropositivity in patients with LP. While in some other studies a low seroprevalence of HCV (around 5-10%) was found.<sup>4</sup> In our patients a frequency of 14% was found. The difference in correlation of LP with HCV infection among various studies may be due to geographical distribution of HCV infection. For example, prevalence of HCV infection in Pakistan ranges between 2.2% to 14%,<sup>9</sup> while seroprevalence of anti-HCV antibodies in the general population of Egypt is around 15-20%,<sup>10</sup> hence the high prevalence found by Amer *et al.*<sup>5</sup> In European countries where the seroprevalence of HCV is very low in the general population (around 1%),<sup>11</sup> various studies found little or no association between HCV infection and lichen planus.<sup>12</sup> However, no consistent association between high HCV prevalence in the general population and the occurrence of LP was found in Indian studies.<sup>13,14</sup> The difference in incidence of LP among different regions of the world and in different age groups may also contribute to the variability among the results of different studies. Another factor may be the sampling bias in various studies as most of them have been carried out in hospitals or university affiliated clinics.

In our study, female to male ratio of LP was found to be 2:1, which is comparable to epidemiological data of the disease in some parts of the world like India. However, in other countries, the gender ratio is equal.<sup>1</sup> In Pakistan,

scanty data are available regarding epidemiology of LP. The ratio found in the present study may represent the gender distribution in Pakistan.

Our data showed that out of 14 HCV positive patients 9 were females. This may be due to the greater number of enrolled female patients or that HCV seropositivity may be more in females in our country. However, more studies are required to confirm this.

Evidence exists that LP is an immune-mediated disease, HCV can induce autoimmunity due to epitopic similarities between HCV antigen and keratinocytes.<sup>6</sup> This explains an association between LP and HCV. HCV RNA has been detected in skin lesions of LP. Although exact mechanism is unknown but proposed mechanism are cytopathic changes in the keratinocytes and autoimmunity against antigen expressed on them. Thus it can be suggested that HCV infected patients may have an increased risk of developing LP.

The importance of establishing the association between LP and HCV infection is that early hepatitis C is almost asymptomatic, therefore difficult to diagnose. The screening of patients presenting with LP may help in early diagnosis of HCV infection in our community and hence reduce the subsequent mortality and morbidity. Prevalence of HCV in Pakistan is around 2.2-14% while in Punjab province it is around 6.7%.

## Conclusion

All the patients with lichen planus should be screened for HCV seropositivity as they are at high risk for hepatitis C infection.

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