

# Frequency of anti-HCV antibodies in lichen planus patients attending a tertiary care hospital Quetta, Balochistan

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## Abstract

**Background** Lichen planus (LP) is a common inflammatory disorder of the skin and mucous membranes having an unknown etiology. In addition to skin and mucous membranes, it also involves nails and hair. Classically it is characterized by pruritic, purple, polygonal, plan-topped papules and may have different clinical presentations like erosive, hypertrophic, atrophic, follicular (Lichen planopilaris), linear, actinic, pigmentosus, annular, guttate, and vesicubullous. In recent years, many research articles showed association of Lichen planus with HCV infection. So, it is important to establish the clinical role of Lichen planus in the diagnosing of hepatitis C virus.

**Methods** This is a cross sectional study, having consecutive sampling of non probability type. It was conducted at department of dermatology, Sandeman (Provincial) Hospital/ Bolan Medical College Quetta between January 2018 to June 2018. All the patients of either gender, aged 30 to 60 years and clinically diagnosed with Lichen Planus were enrolled. After a complete history and clinical examination, anti HCV antibodies was checked by kit method in the institutional laboratory.

**Results** The mean age was 46.42 ±9.75 years. There were 89 (53.9%) females and 76 (46.1%) males. Mean duration of symptoms was 3.20±1.16 weeks. Frequency of positive anti HCV antibody was found in 53 (32.1%) patients while 112 (67.9%) patients were found to be negative.

**Conclusion** The results of high frequency of Anti HCV antibodies support a possible association with lichen planus.

## Key words

Anti HCV antibodies; Lichen planus; Lichen planopilaris; Hepatitis C; Quetta Extrahepatic manifestations; Oral LP; Balochistan.

## Introduction

Lichen planus (LP) is a chronic inflammatory condition of skin and mucous membranes. LP is

a combination of two Greek words (Leichen means tree moss) and (Planus means flat). The exact etiology is still a dilemma.<sup>1</sup> The most acceptable etiologies includes viral & bacterial infections, immunological disturbance, emotional instability, lichenoid drug or chemical eruptions and bone marrow transplantation. The classical presentation has mnemonic of 5 “Ps” purple, polygonal, plan-topped papules and

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pruritic. The disease in addition to its common manifestations of skin and mucous membrane, may involve nails and hair. The diversity of clinical presentation may include lesions like erosive, hypertrophic, atrophic, follicular (Lichen planopilaris), linear, actinic, pigmentosus, annular, guttate, and vesiculobullous.<sup>1,2</sup>

Hepatitis C virus (HCV) belongs to flavivirus, with single-stranded RNA. It replicates in the peripheral blood mononuclear cells and hepatocytes.<sup>1,3</sup> Recently it is observed that HCV presents with many extrahepatic manifestations, which include Lichen planus and porphyria cutanea tarda.<sup>1,3,11-17</sup> Its frequency shows considerable variation ranging from 62% in Japan to 4% in Northern France. However research articles from United Kingdom failed to show any association. The geographical origin of patients with endemic HCV needs further studies to reveal association with LP.<sup>1,3,5,11-17</sup>

The prevalence of LP is approximately 0.5% of the population all over the parts of the world.<sup>2,5</sup> Stark S K *et al.* reported frequency of LP 3.1%,<sup>1</sup> while Anwar S *et al.* reported LP 30% in Bahawalpur.<sup>6</sup> The prevalence of HCV is 3% of the world population.<sup>6,7,11-17</sup> The prevalence of hepatitis C is 5% in general population in Pakistan.<sup>8,9</sup> Another study from Pakistan has reported the frequency of anti-HCV antibodies in 23.4%.<sup>10</sup> This study aimed to observe the association of HCV in all types of LP of this region.

## Methods

This study was conducted from January 2018 to June 2018 at Dermatology Department of Sandeman (Provincial) Civil Hospital of Bolan Medical College Quetta, Balochistan. The objective was to determine the frequency of Anti-hepatitis C virus antibodies in LP patients

attending tertiary care hospital, Quetta. This was a cross-sectional study using (non-probability) consecutive sampling. The sample size calculated was 165 (n=165) with prevalence of anti HCV antibodies in these with lichen planus was 30%, confidence level was 95% and absolute precision was 7%. The study protocol and consent form were approved by the ethical committee of the hospital. The inclusion criteria were patients of any gender, between 30 to 60 years of age, clinically diagnosed with lichen planus. The exclusion criteria were patient having drug history, chemical exposure and dental fillings (Amalgams), diabetes mellitus, vitiligo, alopecia areata and ulcerative colitis.

After a detailed history and complete examination, anti HCV antibodies was checked by screening in the institutional laboratory. During clinical examination, comfort and privacy of patients was maintained. The principal investigator followed the exclusion criteria strictly to control the bias. Data was collected on a preformed proforma and SPSS version 16 was used for analysis.

Mean and standard deviation was calculated for age of patients. Male and female ratio was calculated. Frequency and percentages were calculated for gender and anti HCV antibodies. To control effect modifier the data was stratified in various age groups, gender and duration of symptoms. Chi-square test was applied after data stratification by taking  $P \leq 0.05$  as significant. The result were described in tabulated form.

## Results

Our study was conducted at Sandeman (Provincial)/ Civil Hospital Quetta in department of dermatology, Bolan Medical College Quetta. The mean age was  $46.42 \pm 9.75$  years and duration of symptoms was  $3.20 \pm 1.16$  weeks (**Table 1**). Remarkable difference was revealed

**Table 1** Frequency distribution of age and duration of symptoms (n=165).

	Mean ±SD	Min.	Max.
Age of the patients (in yrs.)	46.42±9.75	31	57
Duration of symptoms (in weeks)	3.20±1.16	2	6

**Table 2** Comparison of age with Anti HCV status (n=165).

Age Group	Anti HCV		Total n (%)	p-value
	Positive n (%)	Negative n (%)		
≤45	30 (31.9)	64 (68.1)	94 (100)	0.948
>45	23 (32.4)	48 (67.6)	71 (100)	
Total	53 (32.1)	112 (67.9)	165 (100)	

In the relationship of anti HCV with gender (p-value 0.032), while insignificant relationship was observed for age and duration of symptoms (p-value >0.05) (Tables 2-4).

**Discussion**

The current article revealed that there was a significant association between LP and hepatitis-C sero-positive cases. The frequency of anti HCV antibody positivity was 32.1%. An international study by Stark S K *et al.* showed 3.1% HCV positivity which is much lower than our results because of the difference of region, as we have more prevalence of hepatitis C viral infection in this region (as supported by the study of Anwar S *et al.* Bahawalpur, Pakistan that showed 30% HCV positivity).

This finding reflects that for the proper treatment of HCV infection, infected persons should be diagnosed at the earliest. To prevent the fatal outcomes either successful management is needs to be introduced or proper and precise monitoring is mandatory.

In the context of above findings, to check hepatitis C virus infection, in the clinical role of lichen planus is of utmost importance. The oral and cutaneous examination is very easy and approachable clinical tool.

In asymptomatic patients of HCV infection, the findings of oral and skin LP may be used as an important marker for proper diagnosis and early management with improved outcomes.

Our study is unique in the sense that similar studies where all types of lichen planus patients were included have yet not been conducted nationally and or internationally so for.

Furthermore, the identification of extra hepatic findings of hepatitis C virus infection has pivotal implications for such patients and for their further management. If this is not valid association, the routine screening of HCV patients with Lichen planus may bring undue financial burden and unwanted harmful effects, i.e. increased anxiety.

So, it is necessary to find out, if there is any association of hepatitis C virus infection and lichen planus, so future guidelines regarding routine HCV screening of patients with Lichen planus can be suggested to physicians as per protocol.

A limitation of this study is that it was conducted in a single center and PCR test was not done for confirmation. In the future, we are planning to conduct multicenter randomized

**Table 3** Comparison of gender with anti HCV (n=165).

Gender	Anti HCV		Total n (%)	p-value
	Positive n (%)	Negative n (%)		
Male	18 (23.7)	58 (76.3)	76 (100)	0.032
Female	35 (39.3)	54 (60.7)	89 (100)	
Total	53 (32.1)	112 (67.9)	165 (100)	

**Table 4** Comparison of age with Anti HCV status (n=165).

Symptoms duration (in weeks)	Anti HCV		Total n (%)	p-value
	Positive n (%)	Negative n (%)		
≤3	43 (31.6)	93 (68.4)	136 (100)	0.764
>3	10 (34.5)	19 (65.5)	29 (100)	
Total	53 (32.1)	112 (67.9)	165 (100)	

trials, along with PCR confirmation in collaboration with institutional representation from all provinces of our country.

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