

**COMPARISON OF SEROPOSITIVITY OF HCV BETWEEN ORAL LICHEN PLANUS AND HEALTHY CONTROL GROUP IN HAMEDAN PROVINCE (WEST OF IRAN)**  
**PORÓWNANIE POMIĘDZY HCV SEROPOZYTYWNYMI PACJENTAMI Z LISZAJEM PŁASKIM JAMY USTNEJ A ZDROWĄ KONTROLNĄ GRUPĄ Z PROWINCJI HAMEDAN (ZACHODNI IRAN)**

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#### Abstract

**Background:** Lichen planus is an idiopathic inflammatory disease of the skin, nail, hair and mucous membranes. Oral lichen planus (LP) is a chronic inflammatory condition that affects the oral mucous membranes with a variety of clinical presentations. Various etiologies include HCV suggested for LP, and the aim of this study was comparison of seropositivity of HCV in LP patients and control group.

**Methods:**All oral LP patients that were referred to dermatology clinic of farshchian hospital were entered in the study. Five cc of clot blood was taken from each patient and tested for anti-HCV and when anti-HCV tested positive another 2cc clot blood was taken for HCV-Rt-PCR test. The results were analyzed with SPSS 16. **Results:** This prospective cross-sectional study was conducted on 30 oral lichen planus patients [males 13(43.3%) females 17(56.7%)] with mean ages of 46±13.7 years and 60 healthy individual [males 26(43.3%) females 34(56.7%)]. There was no oral lichen planus patients who had anti-HCV positive while 2 males(3.3%) of healthy group had anti-HCV positive which was confirmed by HCV-Rt-PCR. **Conclusions:** This study showed that there is no correlation between seropositivity of HCV and oral lichen planus in our patients in the west of Iran.

#### Streszczenie

**Wstęp:** Liszaj płaski jest idiopatyczną zapalną chorobą skóry, paznokci, włosów i błon śluzowych. Liszaj płaski jamy ustnej (LP) jest przewlekłą chorobą zapalną, która wpływa na błony śluzowe jamy ustnej w różnych klinicznych prezentacjach. Jednym z czynników etiologicznych PL jest HCV, a celem tego badania było porównanie dodatniego HCV u pacjentów z LP oraz w grupie kontrolnej.

**Metody:** Pacjenci Kliniki Dermatologii szpitala w Farshchian z pełną ustną postacią LP zakwalifikowali się do badania. Od każdego pacjenta pobrano próbki po 5 cm<sup>2</sup> skrzepów krwi i badano na obecność przeciwciał anti-HCV, gdy wyniki anti-HCV były pozytywne skrzepy krwi badano testem HCV-RT-PCR. Następnie wyniki analizowano z SPSS 16. **Wyniki:** To prospektywne badanie przekrojowe było przeprowadzone na 30 pacjentach z liszajem płaskim jamy ustnej [13 mężczyzn (43,3%), 17 kobiet (56,7%)] w średnim wieku 46 ± 13,7 lat oraz na 60 zdrowych osobach, [26 mężczyzn (43,3%), 34 kobiet (56,7%)]. Liszaj płaski jamy ustnej nie występował u pacjentów, którzy byli anti-HCV, z kolei u 2 mężczyzn (3,3%) z grupy zdrowych stwierdzono pozytywne wyniki anti-HCV, które potwierdzone były w badaniu HCV-RT-PCR. **Wnioski:** Badanie wykazało, że nie znaleziono korelacji między dodatnim wynikiem HCV i liszajem płaskim jamy ustnej u naszych pacjentów w zachodniej części Iranu.

**Key words:** lichen planus; anti-HCV; HCV-Rt-PCR

**Słowa kluczowe:** liszaj płaski; anti-HCV; HCV-Rt-PCR

## Introduction

Lichen planus is a skin disease with the emergence of clinically flat papules with the appearance of a shiny purple polygon with different sizes. The disease can anywhere affect the body but most common sites are wrist, waist and around the ankle area. Mucosal involvement is very common. Approximately, 30-70% of patients have mucosal lesions [1]. Mucosal involvement, even alone and without skin symptoms can occur. In the mouth, the most common site is buccal mucosa and tongue [1,2]. Oral lichen planus is a chronic inflammatory condition of oral mucous membranes. Patterns of mucosal involvement in oral lichen planus include; reticular, papular, plaque-like, atrophic, and ulcerative. Prevalence of oral lichen planus in the community is 1-4%. It is a disease of middle aged people (between 30 to 70 years ) and is more common to women than men [3]. Different etiologies for it include autoimmune disease, drug reaction, diabetes mellitus, hypertension, kidney stones, psychological factors, and bacterial infections [4] And several viruses, including; herpes viruses, immunodeficiency virus, papillomavirus, the hepatitis viruses B and C have also been implicated as etiological agents [5,6]. But in general, etiology of oral lichen planus is still unknown (1). In addition, an autoimmune mechanism which activated T cells directly against basal keratinocyte cells is described [7].

In addition to feeding problems in the patients, the emergence of SCC associated with HCV postulated as a possible etiological factor of oral lichen planus can also create problems specific to HCV infection in an individual patient.

Chronic hepatitis C is often asymptomatic and is usually discovered accidentally. Extrahepatic involvement includes; thyroiditis, delayed skin porphyria, cryoglobulinemia, and glomerulonephritis, especially membranoproliferative glomerulonephritis, sicca syndrome, thrombocytopenia, lichen planus [8,9], diabetes mellitus and lymphoproliferative disorders [10]. The first association between oral lichen planus and hepatitis C virus was reported in 1991 [11] and since then, several articles about the relationship between hepatitis C virus in oral lichen planus have been published [12-17]. Most cases of HCV associated with oral lichen planus have been obtained from studies in the Mediterranean area, whereas in countries like Egypt and Nigeria that have the highest prevalence of HCV, a significant difference has not been reported [13,18]. Therefore, some researchers have suggested that there cannot be explained any relationship between oral lichen planus and HCV only based on the increased incidence in the general population [19] and some workers believe that this controversy is related to different geographical areas [20]. Overall, the relationship between oral lichen planus with HCV infection still remains disputed. Recently, the emphasis on being disputed and the need for more studies based on an accurate methodology without selection bias and the possible confounding factors such as age have risen [21]. This study was designed in the West region of Iran considering the importance of relationship between hepatitis C viruses in oral lichen planus .

## Methods

This prospective cross-sectional study was conducted on all patients enrolled with a diagnosis of mucosal lichen planus within 18 months from the start of the study who were referred to the department of dermatology or Farshchian hospital (Skin Center in Hamedan province). Five milliliter of blood clots were taken from each patient, and was saved at a temperature of minus 70 degrees Celsius after centrifugation till anti-HCV testing (DIA-PRO kit Italy) was done. Study design was such that if the anti-HCV was positive, two milliliter of blood clots would be taken from a patient in sterile conditions in a special tube for HCV-Rt-PCR test (Sinazhen kit Iran). Controls were randomly selected from the general population, and were age and gender matched. An inclusion criterion was developing oral lichen planus, which was diagnosed by a dermatologist and defined according to pathology.

Exclusion criteria were lack of consent to participate in the study, and a previous history of hepatitis C in the control group.

The data collection tool for demographic and clinical profile of patients was a questionnaire. Finally, the data were analyzed by SPSS software.

## Results

30 patients with oral lichen planus and 60 healthy controls enrolled in the study. Number of patients with oral lichen planus in men and women were 13 (43.3%) and 17 (56.7%), and number of healthy men, and women were 26 (43.3%) and 34 (56.7%), respectively. The mean age of patients with oral lichen planus was  $46 \pm 13.7$  years (range 22-80 years), and control was  $46 \pm 14$  years (range 22-80 years) old. Between the two groups in terms of sex and age, there was no significant difference. Among the oral lesions, 86.7% cases had bilateral involvement. Most patients [29 (96.7%)] had buccal involvement, followed by lip, so that six patients (20%) had involvement in this area. Palatal involvement in a patient (3 / 3%) had the lowest rate (Tab. 1).

Involvement area	Number	Percentage
Buccal	29	96.7
Lip	6	20
Gum	4	13.3
tongue	5	16.7
Palate	1	3.3
Oral floor	4	13.3

**Table 1. Frequency of involvement area in patients with oral lichen planus**

In most patients who were enrolled in the study, clinical forms of oral lesions, was erosive ulcerative [18 patients (60%)]. And the lowest form of involvement was plaque-like with one case (3.3%) (Tab. 2).

Clinical form	Number	Percentage
Atrophic	3	10
Ulcerative (erosive)	18	60
reticular	13	43.3
plaque-like	1	3.3

**Table 2. Frequency of clinical forms of oral lesions in patients with oral lichen planus**

Most patients had no clinical symptoms [21 (70%)] and only nine cases (30%) had. Smoking or smoking history existed only five cases (16.7%). None of the patients with oral lichen planus were infection hepatitis C. Two patients (3.3%) in the control group had hepatitis C infection that confirmed by HCV-Rt-PCR. The difference was not significant (Tab. 3).

Study groups	anti-HCV (+) N (%)	anti-HCV (-) N (%)	$\chi^2$	P.value*
Oral lichen planus	0(0)	30(100)	0.8	P=0.21
Healthy	2(3.3)	58(96.7)		
Total	2(2.2)	88(97.8)		

\* Pearson chi-square test

**Table 3. Comparison of frequency of HCV infection among patients with oral lichen planus, and healthy individuals**

### Discussion

In the present study, none of the patients was suffering from hepatitis C. This study showed that there is no relation between oral lichen planus and hepatitis C infection in the region of Hamadan (West of Iran). Furthermore, in the present study, confounding factors that could affect the outcome of this study such as age [21] and sex also were eliminated. The lack of association has been reported in several other studies [13,18,23,22].

Most cases of oral lichen planus associated with HCV have been reported from studies in Mediterranean area. In countries that have the highest prevalence of HCV (such as Egypt and Nigeria), significant difference in oral lichen planus associated with HCV has not been reported in the case group when compared with the control group [13,18].

Although two patients in the control group were positive for hepatitis C which was confirmed by PCR, the two had no clinical manifestations of disease and were found accidentally. Like this study, it has been reported in literature that chronic hepatitis C is often asymptomatic and is often discovered accidentally [8-10]. Statistical analysis of differences in hepatitis C infection in two groups was not significant. Although reports about the association between oral lichen planus and hepatitis C virus infection is contradictory and controversial, and given that a number of researchers said this association depend on geographical areas [20], this study is of the opinion that in Hamedan province (West of Iran) there is no association between them.

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