COMPARISON OF SEROPOSITIVITY OF HCV BETWEEN ORAL LICHEN PLANUS AND HEALTHY CONTROL GROUP IN HAMEDAN PROVINCE (WEST OF IRAN)

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Confl icts of interest: None

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: Total of oral LP patients that refer to dermatology clinic in Farshchian hospital entered to study. Five cc clot blood took from each one and tested for anti-HCV when anti-HCV would positive another 2cc clot blood took for HCV-Rt-PCR test. Then results analyzed with SPSS 16.

Results: This prospective cross-sectional study was conducted to 30 oral lichen planus patients [men 13(43.3%) women 17(56.7%)] with mean ages of 46±13.7years and 60 healthy individual [man 26(43.3%) woman 34(56.7%)]. There was no oral lichen planus patients who had anti-HCV positive whiles 2 men (3.3%) of healthy group had anti-HCV positive which 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 cm² skrzepów krwi i badano na obecność przeciwiec PL anty-HCV, gdy wyniki anty-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 lizjarem 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 anty-HCV, z kolei 2 mężczyzn (3,3%) z grupy zdrowych stwierdzono pozytywne wyniki anty-HCV, które potwierdzono były w badaniu HCV-Rt-PCR. Wnioski: Badanie wykazało, że nie znaleziono korelacji między dodatnim wynikiem HCV i lizjarem płaskim jamy ustnej u naszych pacjentów w zachodniej części Iranu.

Key words: lichen planus; anti-HCV; HCV-Rt-PCR
Słowa klucze: 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 is determined. The disease can anywhere can affect the body but most common infection sites are wrist, waist and around the ankle area. It has a different form. Mucosal involvement is very common. Approximately, 30-70% of patients have mucosal lesions [1]. Mucosal involvement, even alone and without skin symptoms 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 are involved in different ways. Types 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 until 70 years old) and is more common to women than men [3].

Different etiologies for it are expected to 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 [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 and makes possible the emergence of SCC, associated with HCV as a possible etiology of oral lichen planus can be also creating problems specific to HCV infection in individual patients.

Chronic hepatitis C is often asymptomatic and is discovered accidentally mostly. 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] 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 hasn’t been reported [13,18]. Therefore, some researchers have suggested that cannot be explained any relationship between oral lichen planus and HCV only based on the increased incidence of general population [19] and some said this controversy related to different geographical areas [20]. Overall, the relationship between oral lichen planus with HCV infection remains disputed yet. In a review article recently published, 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 has risen [21]. Considering the importance of object and relationship between hepatitis C viruses in oral lichen planus in the West region of Iran, this study was conducted.

Methods

This prospective cross-sectional study was conducted on all patients diagnosed with 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), were enrolled. Five milliliters of blood clots were taken from each patient, was saved at a temperature of minus 70 degrees Celsius after centrifugation until anti-HCV testing (DIA-PRO kit Italy). Study design was such that if the anti-HCV was positive two milliliters 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 randomly selected from the general population, and Age and gender matched. An inclusion criterion was developing oral lichen planus, which diagnosed by a dermatologist and defined according to pathology. Exclusion criteria were lack of consent to participate in the study, and had a history of hepatitis C in the control group, formerly.

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

Results

According to the method designed, 30 patients with oral lichen planus and 60 healthy controls were enrolled. 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±13.7 years (range 22-80 years), and control was 46±14 years (range 22-80 years) old.

Between the two groups in terms of sex and age, there was no significant difference and matched.

Oral lesions 86.7% cases were bilateral. Most patients [29 (96.7%)] had buccal involvement, then the most common site of involvement was in the lip, so that Six patients (20%) had involvement in this area. Palate with a patient (3 / 3%) had the lowest rate (Tab. 1).

<table>
<thead>
<tr>
<th>Involvement area</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buccal</td>
<td>29</td>
<td>96.7</td>
</tr>
<tr>
<td>Lip</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>Gum</td>
<td>4</td>
<td>13.3</td>
</tr>
<tr>
<td>tongue</td>
<td>5</td>
<td>16.7</td>
</tr>
<tr>
<td>Palate</td>
<td>1</td>
<td>3.3</td>
</tr>
<tr>
<td>Oral floor</td>
<td>4</td>
<td>13.3</td>
</tr>
</tbody>
</table>

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

In most patients who were enrolled to 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).
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).

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

<table>
<thead>
<tr>
<th>Clinical form</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atrophic</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Ulcerative (erosive)</td>
<td>18</td>
<td>60</td>
</tr>
<tr>
<td>reticular</td>
<td>13</td>
<td>43.3</td>
</tr>
<tr>
<td>plaque-like</td>
<td>1</td>
<td>3.3</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Study groups</th>
<th>anti-HCV (+) N (%)</th>
<th>anti-HCV (-) N (%)</th>
<th>( \chi^2 )</th>
<th>P.value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral lichen planus</td>
<td>0(0)</td>
<td>30(100)</td>
<td>0.8</td>
<td>P=0.21</td>
</tr>
<tr>
<td>Healthy</td>
<td>2(3.3)</td>
<td>58(96.7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2(2.2)</td>
<td>88(97.8)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Pearson chi-square test

**Discussion**

In the present study, none of the patients were 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 hasn’t been reported among the case group with the control group [13,18]. Although two patients in the control group were positive for hepatitis C that 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.

**REFERENCES:**


