



Original Article

Prevalence of Oral *Lichen Planus* in HCV⁺ Patients in Shiraz, South of Iran

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Abstract

Background: The association between oral *Lichen planus* (OLP) as a common oral disease and HCV infection as an etiological factor in the development of hepatocellular carcinoma has been widely reported. However, there are wide geographical variations in the reported prevalence. This study was performed to determine the prevalence of *L. planus* in HCV+ patients in Shiraz, southern Iran.

Methods: Seventy-six HCV+ positive patients (59 males and 17 females) aged between 28 and 58 years were enrolled as the case group and 90 HCV-patients (79 males and 11 females) aged between 26 and 62 years entered the study as the control group. 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 polymerase chain reaction test (PCR) was performed. Oral cavity of all patients was clinically examined for the presence of different types of erosive and keratotic lesions of OLP.

Results: Erosive and keratotic lesions of OLP were detected in buccal mucosa of two cases (2.6%) in the case group and in one patient of the control group (1.1%).

Conclusion: There was no statistically significant relationship between OLP and HCV infection in Shiraz (P value=0.57). Further studies are needed to focus on other groups in different regions of Iran to determine whether testing for HCV infection is necessary in patients with OLP.

Keywords: Prevalence; Oral; *Lichen Planus*; HCV; Southern Iran

Introduction

Oral *Lichen planus* (OLP) is relatively a common chronic inflammatory mucocutaneous disease. Oral lesions are characterized by raised multifiform white lesions accompanied by areas of erosions and pigmentation.¹ This mucocutaneous disease was first described by Wilson (1896) who reported approxi-

mately a 6% prevalence.² *Lichen planus* is a disease of adulthood with an age range of 30-70 years.³

Oral lesions are present in 70-77% of dermatological diseases infected to *L. planus*.⁴ A high prevalence of *Candida albicans* together with OLP occurs due to impairment of cellular immunity.⁵ HCV is a single stranded virus and a bloodborne pathogen while the important roots of its transmission are blood transfusion, percutaneous exposure from contaminated needles and occupational exposure to the blood.⁶ Hepatitis C affected 170 millions people worldwide. Extra hepatic manifestations of chronic hepatitis C infection are clinically evident in nearly

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40% of patients.⁷ Some studies on selected populations confirmed a significant association between OLP and HCV infection as an extrahepatic manifestation,^{8,9} but others have not confirmed this finding.^{10,11} So this study was conducted to determine the frequency of OLP in HCV⁺ patients in Shiraz, southern Iran .

Materials and Methods

In this cross sectional study, 76 hepatitis C infected patients were selected as case group and 90 HCV negative patients as the control group. Most of these patients were addicted, hemophilic or thalassemic (17 thalassemic, 2 hemophilic and 140 IV drug abusers and seven more patients that were neither addicted, nor hemophilic nor thalassemic). These cases were selected from outpatients during an 11 month period from 2005 through 2006. Blood samples were collected from all the cases to check for HCV antibody. In positive cases, confirmatory polymerase chain reaction test (PCR) was performed. The demographic data such as age, gender, duration of illness and other systemic diseases were recorded. A thorough clinical examination was carried out for any oral mucosal change.

Results

Two HCV⁺ patients (2.6%) had bilateral keratotic and erosive lesions of OLP on the buccal mucosa. One of those patients (a 54 year old man) showed keratotic lesions of OLP on the buccal mucosa and the tongue. Among the cases, 17 patients (22.4%) were female and 59 (77.6%) were male. The case group aged between 28 to 58 years and the control group age range was 26-62 years. In the control group, 11 subjects (12.2%) were female and 79 (87.8%) were male. The prevalence of oral *Lichen planus* in HCV⁺ and HCV⁻ patients was demonstrated in Table 1 showing a low prevalence of OLP in HCV⁺ patients.

Table 1: Prevalence of oral *Lichen planus* (OLP) in HCV⁺ and HCV⁻ patients in Shiraz, southern Iran.

	OLP+	OLP-	Total
	No. (%)	No. (%)	No. (%)
HCV+	2(2.6)	74(97.4)	76(100)
HCV-	1(1.1)	89(98.9)	90(100)

P Value = 0.57

Discussion

In recent years, both mucosal and cutaneous *L. planus* have been reported as extrahepatic manifestations of HCV infection.¹² However, there are wide geographical variations in distribution of the disease. The present reports indicate that the prevalence of HCV antibodies in OLP patients is significantly higher than that in the general population. HCV infection is widespread showing a 3% of the world infections. The proposed mechanisms resulting in OLP infection are due to capability of HCV for cytopathic replication in cell types outside the liver,¹³ 2) triggering an autoimmune process that is directed against antigens expressed on extrahepatic cells,¹⁴ 3) persistent infection that can lead to immune complex formation with antibodies, followed by deposition on small blood vessels, 4) triggering of immunological processes leading to dermatological manifestations that are the activated CD8 T cells, cytokines and expansion of certain B cell clones.^{14,15}

The first case of HCV⁺ *L. planus* patients was reported from France in 1991. So far many case control studies were undertaken implicating or refuting HCV association in OLP. Most of the positive studies are in Japan, Spain and Italy.^{11,16-18} UK studies have persistently failed to depict an association between hepatitis C infection and *L. planus*.^{19,20} A Brazilian study showed that the frequency of OLP in HCV⁺ patients was about 4.7% and was significantly higher in cases than the control group.²¹ No association was found between OLP and HCV infection in our patients. Probably, regional variations in HCV prevalence accounts for the positive correlation between HCV infection and *L. planus*, especially oral and erosive varieties, in most reports. Routine liver function tests and further screenings on the basis of abnormal values will be a fair protocol to follow, especially in areas where the prevalence of HCV infection is low.

The prevalence of disease was low in the studied population which suggests a study on a larger sample size to confirm the results.

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Conflict of interest: None declared.

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