

FREQUENCY OF ORAL LICHEN PLANUS IN HEPATITIS C VIRUS PATIENT VISITING PESHAWAR DENTAL COLLEGE

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ABSTRACT

Objective: The objective of this study was to find out the frequency of Oral Lichen Planus (OLP) in Hepatitis C virus (HCV) visiting Peshawar dental college. Study design: Descriptive Cross Sectional Study. Setting: Oral Medicine Department of Peshawar Dental College. Period: August 2013 to March 2018.

Materials and Methods: A total of 250 patients were included in this study. All patients visiting Oral Medicine Department Peshawar Dental College having HCV, included in this study were examined for OLP. The diagnosis of OLP was made on the basis of its clinical features and histopathology. A predesigned proforma was used for the OLP.

Results: Out of 250 patients having HCV, 45 (18%) patients were having OLP. The common age of presentation was third and fourth decade. Average age of patients was 45.81 years with SD± 10.7 years. Male to Female ratio was 2:1. Most common OLP pattern was Reticular type (44%) followed by Erosive type 22%. Most common site was Buccal Mucosa having 77.8% involvement followed by Lip 11.1%, Tongue 4.4% and Floor of Mouth 4.4%.

Conclusion: HCV has Extra Hepatic Manifestations like OLP.

Keywords: Hepatitis C virus, Oral Lichen Planus, Autoimmune

INTRODUCTION

Hepatitis C virus (HCV) is reported a serious public health issue globally.¹ Every year, estimated 3 to 4 million case are reported and about 120 to 130 individuals infected with HCV.²

Regions most commonly effected are Eastern Mediterranean and some parts of Europe. In general population the literature revealed that the prevalence of HCV ranges from 0.1 to 2.2%.³ HCV is presented in acute and chronic infection. In acute HCV infection patients are usually asymptomatic.

Near 15–45% of infected patients spontaneously

recover within 6 months of infection without any treatment.⁴ while 60–80% of patients may develop chronic infection. Complication of HCV are liver cirrhosis varies from 15–30%, 4 and Hepatocellular Carcinoma (1 to 8%).⁵

Lichen Planus is a an autoimmune disorder which usually affects skin and oral mucosa and also nails and genital organs.^{5,6} Lichen Planus most frequently effect middle age population and mostly female. The most prominent feature is Wickham's striation found on skin. The skin lesions of Lichen Planus which is found on hands is purplish, polygonal, , pruritic papules and plaques.⁷

About 30% to 50% of patients having Oral Lichen Planus (OLP) also have skin lesions, the presence of Wickham's striations help in the early diagnosis of OLP.⁷

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The main clinical types of OLP are: Papular (3.16%), reticular (65.36%), plaque-like (5.5%), atrophic (13.41), erosive (12.4%) and bullous (0 to 1%). These type of OLP some time present individually or in combination.⁷ According to literature some type of OLP may be premalignant.⁸ OLP is usually asymptomatic and patient present with white patch. While some patient's complaint of pain, burning sensation, ulcer, bleeding and roughness of oral mucosa. Most common clinical variant, in OLP is reticular type, other variant may also be found, there development and progression also varies in different individuals. The etiology is idiopathic, however many researchers consider it is autoimmune disorder. Genetic, environmental, stress, drugs and systemic disease may trigger OLP.⁹

Some conditions like diabetes mellitus hypertension, rheumatic disease, urolithiasis, HCV, exposure to some drugs, chemicals or dental restorations, and betel quid chewing are associated with OLP.¹⁰ Different studies conducted on different population show the prevalence of OLP in HCV is 0.5-35%.¹¹

Lodi et al¹² in his study, Hepatitis C virus infection in Lichen planus, which he conducted on 70 studies in 6378 patients. In his meta-analysis he found 23.3% of HCV patients had OLP which is highly significant and also concluded that it is based on different geographical locations. With significant variation found due to different geographical locations. High incidence of OLP among HCV was reported in Japan and Europe, the Mediterranean region.³ Petti et al,¹³ in his study found the association between OLP and HCV patient, in 2% cases.

Alaizari et al¹⁴ did a study based geographical differences. According to his study, they found out the relation of Hepatitis C with OLP to be 4% in France, 30% in Italy and 62% in Japan. In his study he reported a 6 time higher association of OLP in HCV patients.

The pathogenesis of OLP caused by HCV is unknown.¹⁵ Several theories focused on different factors that may contribute to the development of OLP.⁵

Major parenchymal cells of the liver called hepatocytes which play a vital role in metabolism detoxification and protein synthesis are the main site of HCV replication, this virus also showed replication in non-hepatic cells. Different biopsies of

skin and oral mucosa showed viral RNA with higher rate being in oral tissue.¹⁶ Biopsy reports confirmed the presence of the of viral RNA in keratinocytes (primary type of cell found in epidermis) of 69% of patients.¹⁷

It is considered that due the presence of HCV in oral mucosa causes antigenic changes in its structure that activate cytotoxic T lymphocytes or the initiate humoral response and produce antibodies against oral mucosa.¹⁸

Previous studies were done on different population of Karachi Pakistan, in which only generalized Lichen Planus with third generation ELISA technique for HCV was studied in 82 patients. While this study was done on Peshawar population in which OLP with PCR report for HCV was studied in 250 patients.

Therefore, the aim of this study was to find the frequency of OLP in HCV patients of age 20- 70 years, visiting Oral Medicine Department of Peshawar Dental College. This will aid the clinicians in providing data for OLP in HCV patients.

MATERIALS AND METHODS

This descriptive cross sectional study was conducted at Oral Medicine Department Peshawar Dental College from August 2013 to March 2018, The Sample Size was 250 patients, the sample size was calculated through WHO sample size calculation methods using 35% prevalence of OLP in HCV patient. 95% confidence interval and 6 % margin of error, by using Consecutive (non-probability sampling technique).

The study was conducted after approval from college ethical board committee. All patients meeting the inclusion criteria of age range 20 to 70 years and both gender were included in this study. The purpose of this study were explained to all patients and written informed consent was obtained. A detailed history and oral examination were done for all HCV patients having Hepatitis C test and PCR report. Among those patients in whom OLP was detected, were further examined for OLP type and site and suspected cases were diagnosed through biopsy. All information such as address, age, gender, type and site of OLP were noted in predesigned proforma. Strict exclusion criteria were followed. All the data were analyzed by using SPSS version 23. Percentage and Frequencies

were calculated for categorical variables like gender, type and site of OLP. Mean and standard deviation were calculated for quantitative variables like age. Male to Female ratio were calculated. Effect modifiers were controlled through stratification of age, gender, site, type, to see the effect of these outcome variable. Results were presented in the form of Tables and Graphs.

RESULTS

Out of total 250 patients there were 151(60%) males and 99(39%) females. (Figure 1). The male to female ratio was 2:1. The Mean age of patients was 45.8 years with $SD \pm 10.7$ ranging from 20 to 70 years. The patient's age was divided into five categories. In category one (20-30 years), number of patients were 15 (6%), in category two (31-40 years), number of patients were 80 (32%). In category three (41-50 years), four (51 -60 years) and five (61-70 years), number of patients were 85 (34%), 40 (16%) and 30 (12%) respectively (Figure 2). OLP was found in 45 (18%) patients out of 250 patients. The most common type of OLP was Reticular type observed in 20(44%) patients followed by Erosive type 10(22%).

Atrophic type noted in 5(11.1%) patients, Plaque type in 11.1% and Papular type in (8.9%) patients. while Desquamative were found in (2.2%) patients (Table 1).

Common site was buccal mucosa having (77.8%)

involvement followed by lip (11.1%), tongue (4.4%), floor of mouth (4.4%) and gingiva, (2.1%). (Table 2).

DISCUSSION

OLP is chronic inflammatory autoimmune disorder that affect the oral mucosa and skin. Literature has revealed the association between OLP and HCV.¹⁹ The association between OLP and HCV was found for the first time in 1980. The prevalence of the OLP with HCV has been found to be between 0.5-35% in studies conducted in various geographic areas.²⁰ This association has also been found in other countries like United states America, Germany, Italy, Spain and Iran.²¹ In 1991, Mokni et al²² reported the first case of histologically confirmed OLP in a patient with HCV infection, suggesting an association between the two. Several research favored the connection between OLP and HCV. Thongprasom K et al²⁰ reported a variation in the prevalence of OLP with HCV between 16% and 55% for the study groups and between 0.17% and 4.7% for controls groups.

A longitudinal study conducted in Japan on a group of patients diagnosed with HCV showed an incidence of OLP of 12.5%²³. While Nagao reported HCV antibodies in 68% of patients with OLP.²³

Cacoub et al²⁴ conducted a study in HCV patients to find extrahepatic manifestations. 74% patients have manifestations including arthralgia, myalgia, OLP(1%), Pruritus(15%). These are extra hepatic manifestations that are found in the body. He

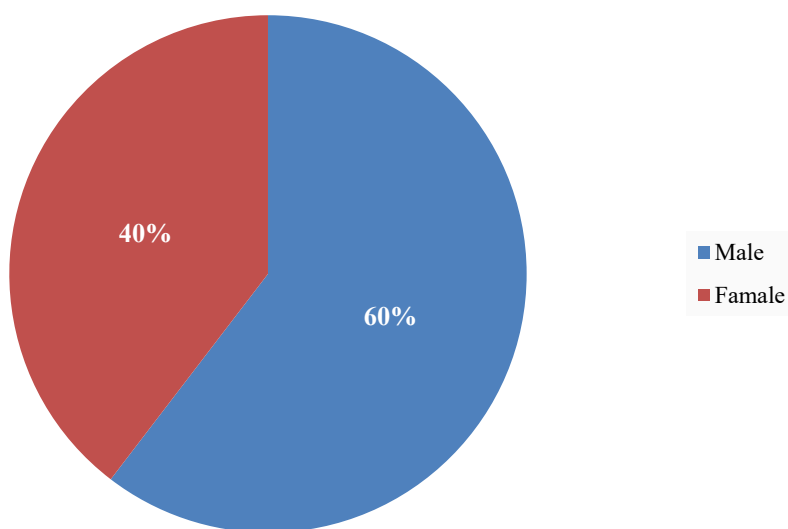


Fig 1: Gender Distribution

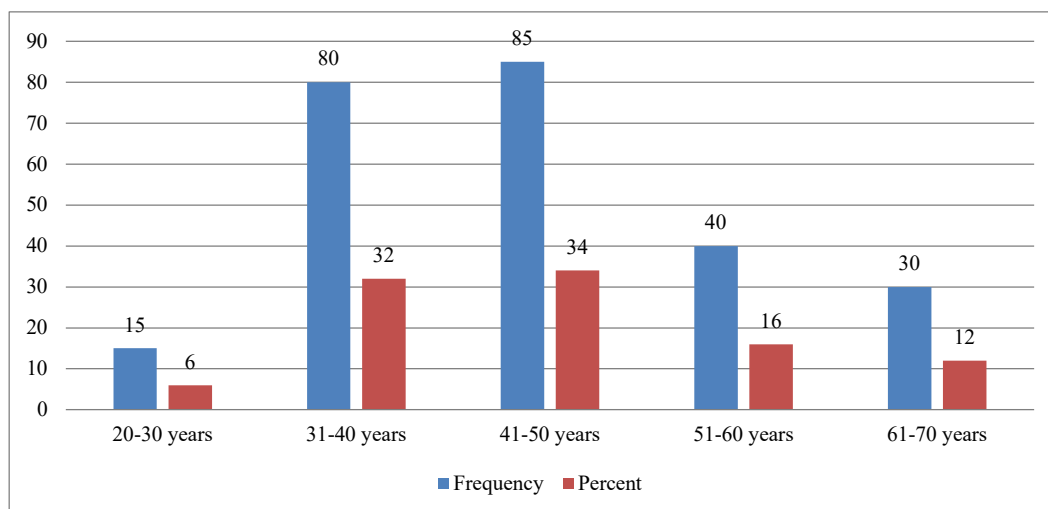


Fig 2: Age Distribution

Table 1: Distribution of OLP Type

Type	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Reticular	20	8	44.4	44.4
Erosive	10	4	22.2	66.7
Papular	4	1.6	8.9	75.6
Plaque	5	2	11.9	86.7
Desquamative	1	.4	2.2	88.9
Atrophic	5	2	11.1	86.7
Total	45	18	100	100

Table 2: Site Involvement of OLP

Type	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Buccal Mucosa	35	14	77.8	77.8
Tongue	2	.8	4.4	82.2
Floor Of Mouth	2	.8	4.4	82.2
Gingiva	1	.4	2.2	86.9
Lip	5	2	11.1	88.9
Total	45	18	100	100

concluded female gender, old age were the main risk factor not geographical location. Garcovich et al.²⁵ Showed 17% skin manifestation in HCV patient.²⁵

In the present study, among 250 patients, only 45 patients diagnosed with OLP. The most common type noted were reticular OLP(44.4%), while the most common site involved were buccal mucosa (77.8%)

According study conducted in department of

dermatology at ziauddin medical university Karachi Pakistan on 63 HCV patients. 21% cases had oral lesion like OLP.²⁶

Campisi et al,²⁷ conducted a study on 260 patients to find any association between OLP and HCV. No significant difference about association was found between HCV and OLP in general population. Age-stratified prevalence of OLP in HCV was observed in a study conducted in Italy. The low

sample size in our study did not permit age stratification. Studies with larger samples may prove these controversial findings.

Nagao et al²⁸ in his study, Hepatitis C virus RNA in OLP and oral cancer tissues, also identified viral replication in OLP patient on histopathology in HCV Patient, indicating its role in pathogenesis. Arrieta et al,²⁹ conducted a study on detection of HCV in epithelial tissues on 23 patients having OLP, in which 14 patients were having HCV antibody in epithelial tissues, while 5 patients having HCV, OLP was not detected. This showed that the virus replicates in epithelial cells. As the HCV antibodies were also found in the normal mucosa it has been concluded that the virus has no direct impact on keratinocytes.²⁹

Carrozzo et al³⁰ in their study who worked on HCV and OLP geographical heterogeneity related to HLA-DR6 found high frequency HLA class II allele HLA-DR6 in OLP Patients. This association could give possible explanation of the geographical heterogeneity of the association between HCV and OLP. Definitive association among OLP and HCV still not determined. Therefore, cohort studies should be conducted to clear-up and to investigate the epidemiologic and pathologic aspects of the OLP and HCV association.³¹

Grossman et al,³² show significant result about the relation between OLP and HCV having frequency 4.7%. Although the frequency of OLP in patients with HCV in this study was low. But it may be probably due to different methods of study used.

A study conducted on 263 patients by Mignogna MD et al, the HCV RNA was found in the saliva, skin and oral mucosa of OLP patients, which gave a proof of a cause-effect relationship between the two diseases.³³ From these studies two common general hypothesis can be derived about OLP in patients with HCV, the first one to be is that the virus is capable of multiplication, development and proliferation in oral epithelium and is a factor in contributing to development of OLP in oral cavity. The second, hypothesis shows that HCV can cause autoimmune reactions by mutation and replication which may affect immune system and immune cell like T cell.³⁴ Some literature reports that OLP in HCV affected patients arise due to cytotoxicity of hepatocytes.³⁵

In our study we found a possible association

between OLP and HCV, but further studies with large sample sizes must be conducted to know this association more deeply. Control groups should also be included in future studies to enhance the results.

CONCLUSIONS

HCV has extra Hepatic manifestations like OLP. Age, gender, type and site of involvement have no effect of HCV sero positivity.

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