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Original Article

Association of hepatitis C virus with various forms of lichen planus

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Abstract

Background The association of lichen planus with hepatitis C (HCV) has been widely reported in the literature. However, there are wide geographical variations in the reported prevalence of HCV infection in patients with lichen planus.

Objective This study was conducted to determine the frequency of hepatitis C in our patients with lichen planus.

Methods During the year 2017, 105 cases of lichen planus, were diagnosed. Male to female ratio was 1:2.2. Mean age was 34.92±12.72. They were diagnosed on the basis of the usual clinical features and, if necessary, typical histological findings. The patients were screened for the presence of anti-HCV antibodies by third generation ELISA and liver function tests.

Results Hundred and five patients were studied. Male to female ratio was 1:2.2. Mean age was 34.92±2.72. Out of these, 33 were found to be HCV positive. Out of total oral LP seen ulcerative type was 10.4% and rest were whitish lace like pattern. Amongst cutaneous involvement cases, sub varieties seen were classical LP 16%, hypertrophic LP 5%, segmental LP 5%, flexural LP 3%, actinic 3%, annular 1%, while nail involvement, lichen planopilaris constituted 3% of the total cutaneous component. Genital mucosal involvement was 0.1%.

Conclusion Our study showed that about one third of the study population had HCV positivity. An important negative finding was the uncommon varieties of cutaneous lichen planus seen in our study i.e.; Hypertrophic, segmental, flexural, actinic, annular were not found previously to be associated with HCV. HCV appears to have an etiologic role for lichen planus in our region.

Key words
Lichen planus, hepatitis C, hypertrophic LP

Introduction

Lichen planus is a chronic inflammatory, noninfectious muco-cutaneous disorder that affecting approximately 2% of general adult population.[1] 25% of patients may present without skin lesions. Oral lichen planus can occur as lacy white streaks, whitish papules and plaques, atrophic, erosive and bullous forms They are painless or symptomatic depending upon their morphology. They can appear on buccal mucosae, tongue, gingivae, palate, lips and retro-molar pad area; whereas palatal lesions are uncommon.[2] Incidence is more in women as compared to men in a ratio of 2:3.[3]

Cutaneous lesions are often self-limiting, whereas oral forms are chronic with very little chances of spontaneous remission, are often a

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source of morbidity and are potentially premalignant.[3,4]

The etiopathogenesis is multifactorail involving genetic, environmental and lifestyle factors and liver disease. The exact cause is to be found out yet but is considered to be an autoimmune disease. CD8+ T lymphocytes and chemical mediators such as cytokines & tumour necrosis factor get attached to the epidermis/epithelium which results in their death.

Diagnosis is made on clinical and/or histopathological basis. Histopathology is characterized by uneven epidermal/epithelial thickness, basal cell degeneration and a band-like infiltrate, comprising of mononuclear cells at the dermo-epidermal junction. Due to increased risk of squamous cell carcinoma in ulcerative pattern, regular follow-up should be carried out and change in symptoms needs to be documented. Various types and their associations need to be studied extensively to help with adequate management in due time.[5]

Objectives

To determine the association between Hepatitis C virus infection and various forms of lichen planus.

Material and Methods

For this cross-sectional survey four departments at 3 hospitals combined their data: Dermatology OPD, Gujranwala Medical College, Gujranwala, Dermatology OPD, Lahore General Hospital, Medical OPD, Lahore General Hospital, Dermatology OPD, Mayo Hospital, Lahore. Sample technique used was non- probability purposive sampling. Patients included were of lichen planus confirmed clinically and/or histopathologically, if in doubt and of either sex >10 years of age.

105 patients who fulfilled the inclusion criteria were enrolled in the study. Informed consent was taken and recording of demographic data, complete history was done. Examination was performed and investigations were carried out to see the association of hepatitis C. Pre designed proforma was used to collect the desired information.

SPSS 20 was used to enter data and analyse it. Quantitative data is presented by mean±SD while qualitative data by frequency table & percentages.

Results

Total of hundred and five patients were studied. Male to female ratio was 1:2.2. Mean age was 34.92±12.72. Out of hundred and five patients, thirty three were found to be HCV positive. Different varieties of lichen planus are shown in **Table 1**.

Results of associations of HCV are shown in the **Table 2**.

Out of total oral LP seen ulcerative type was 10.4% and rest were whitish lace like pattern.

Amongst cutaneous involvement cases, sub varieties seen were classical LP 16%, hypertrophic LP 5%, segmental LP 5%, flexural LP 3%, actinic 3%, annular 1%, while nail involvement, lichen planopilaris constituted 3% of the total cutaneous component. Genital mucosal involvement was 0.1%.

Table 1 different variety of lichen planus

Mucocutaneous	43	40.95%
Cutaneous	39	37.14%%
Oral mucosal	23	21.90%

Table 2 Associations of HCV with lichen planus

Erosive / Ulcerative	11	33%
Mucocutaneous	19	57.5%
Cutaneous	3	9%

Discussion

Our study showed that about one third of the study population had HCV positivity. An important negative finding was the uncommon varieties of cutaneous lichen planus seen in our study i.e. Hypertrophic, segmental, flexural, actinic, annular were not found to be associated with HCV. Similarly no association was found between HCV and lichen planus of nails, lichen planopilaris and lichen planus of genital mucosa.

Various studies have been conducted worldwide to see the etiology and association of cutaneous and oral lichen planus with hepatitis C and B. Conflicting results have been found regarding this very association from different areas.

Our results were supported by the study done by Nagao et al. who studied the prevalence of hepatitis B and C virus infection in 45 patients with oral lichen planus in Japan. 62% were positive for serum anti-HCV while 60% for HCV RNA. Their results supported HCV as a major cause of oral lichen planus.[6]

Asaadtonsi et al. from Saudi Arabia studied 114 cases of lichen planus, 26.3% were HCV positive and out of 65 controls subjects 4.6% were positive. The difference was significant.[7] Jubert et al. found out that patients with severe mucosal lesions had abnormal liver test.[8]

Contrary to our study Ingafou et al. could not detect any co-occurrence in British patients.[9]

Supporting the above fact, Eisen narrated that no routine screening for hepatitis is needed in oral lichen planus patients in America.[10]

Donempudi et al. from India was unable to find any significant association between the two.[11]

Similarly, Meij et al. investigated the prevalence of HCV infection 55 patients in the Netherlands. No evidence of HCV infection was found.[12]

The reason of differences in associations could be a small sample size of studies, different cultural setups, geographical location, environmental factors, and genetic predisposition.

Results from a local study carried by Javed et al. from Karachi, Pakistan showed HCV positivity in 18% of lichen planus patients i.e. Age, gender, morphological pattern and site of involvement had no effect of HCV positivity.[13]

Out of other countries of the region, Hepatitis C is more prevalent in Pakistan. Various districts of Punjab like Gujranwala, Mianwali, Rahim Yar Khan are worst afflicted. Prevalence of HCV in Gujranwala, Lahore and Sialkot district has been seen as 23.8%, 15.9%, 15.6% respectively.[14]

One of the possible explanations could be the presence of host rather than viral factors might be crucial to cause HCV positivity. HLA class ll HLA-DR 6 allele might be the influencing factor in the outcome of HCV infection and appearance of extrahepatic symptoms.

This could to some extent explain the different geographical co-occurrence of HCV and LP. We strongly recommend hepatitis serology of all lichen planus patients so that the associated liver disease could be picked up in time and treatment instituted accordingly. Further studies are required to see the prevalence of viral hepatitis in different regions of our country. Cutaneous examination can be a guide towards vigilant systemic workup of silent disease.

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