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Clinico-Epidemiological Study of Lichen Planus

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ABSTRACT
Lichen planus is a chronic, inflammatory skin disorder that can also affect mucous membranes, hair and nails. Despite being a relatively common dermatological condition, its exact etiology and epidemiology remain the subject of ongoing research. To study the epidemiological and clinico-histopathological pattern in Lichen planus. A retrospective analysis of medical records was conducted in a dermatology clinic over a five-year period. Data from patients diagnosed with Lichen planus were collected and analyzed. Demographic information, clinical characteristics, including skin and mucosal involvement, nail and hair manifestations and comorbidities, were documented. The prevalence of Lichen planus was calculated based on the total number of dermatology clinic visits during the study period. A total of 100 patients with Lichen planus were included in the study. The majority of patients were adults, with a median age of 45 years. Lichen planus exhibited a slight male predominance. The most common clinical presentation was cutaneous Lichen planus with the most frequent morphology being papular and violaceous lesions. Histopathological presentations include Hyperkeratosis (74%), Hypergranulosis (76%), Acanthosis (73%), Basal cell degeneration (75%), Melanin Incontinence (63%) and Civatte bodies (14%). 100 patients of Lichen planus after histopathological confirmation were tested for detection of HCV antibodies, Hbs antigen and HIV antibodies by HCV-TRIDOT, HEPACARD and HIV –TRIDOT respectively. This clinico-epidemiological study sheds light on the clinical characteristics and prevalence of Lichen planus in a dermatological clinic setting. There is no significant relationship between Lichen planus and Hepatitis B, C and HIV virus. It may be suggested that viral serology (HBsAg, HCV, HIV) may not be necessary in routine screening for Lichen planus.

INTRODUCTION

Lichen planus is a chronic, inflammatory dermatological disorder characterized by pruritic skin lesions and it may also affect mucous membranes, nails and hair. It is a condition of multifaceted clinical manifestations and remains a subject of ongoing research to understand its etiology, epidemiology and management[1,2]. In light of its diverse presentations and potential impact on patients' quality of life, a clinico-epidemiological study of Lichen planus is crucial to provide insights into its clinical features, prevalence and associated factors.

Lichen planus is a relatively common dermatological condition, affecting individuals of various age groups and both genders[3]. It poses a significant burden on patients due to its often intense pruritus and its potential to affect mucous membranes, leading to oral discomfort and scarring.

A chronic inflammatory dermatological illness, lichen planus is characterised by itchy skin lesions that can also affect the hair, nails and mucous membranes. Research into the A chronic inflammatory dermatological illness, lichen planus is characterised by itchy skin lesions that can also affect the hair, nails and mucous membranes. Research into the aetiology, epidemiology and therapy of this illness, which has a variety of clinical presentations, is still underway[1,2]. A clinico-epidemiological study of Lichen planus is essential to provide light on its varied presentations and possible influence on patients' quality of life. It also aims to shed light on the disease's clinical characteristics, prevalence and related factors.

A rather frequent dermatological disorder that affects people of all genders and all ages is lichen planus[3]. Because of its frequently severe pruritus and propensity to damage mucous membranes, causing oral irritation and scarring, it places a heavy load on patients. aetiology, epidemiology and therapy of this illness, which has a variety of clinical presentations, is still underway[1,2]. A clinico-epidemiological study of Lichen planus is essential to provide light on its varied presentations and possible influence on patients' quality of life. It also aims to shed light on the disease's clinical characteristics, prevalence and related factors.

Lichen planus is a fairly common dermatological condition that affects individuals of all ages and genders[3]. It puts a lot of strain on patients due to its often intense pruritus and tendency to harm mucous membranes, producing oral irritation and scarring. Lichen planus develops as a result of a combination of environmental, genetic and linguistic variables.This clinico-epidemiological study aims to achieve several key objectives:

- To give a thorough grasp of the clinical characteristics of Lichen planus, such as the disease's many morphological manifestations, patterns of mucous membrane involvement and the existence of nail and hair symptoms.
- To determine the frequency of Lichen planus in a dermatological clinic environment by estimating its prevalence in the study population.
- The aim is to recognise and record co-occurring conditions linked to lichen planus, specifically concentrating on autoimmune disorders and other risk factors.

To validate the diagnosis and describe the histological features of skin biopsies from a subgroup of patients by histopathological investigations.

There is a strong correlation with HCV infection, even though there is less of a link with other viral diseases such EBV, CMV, Hepatitis B, HIV and Human Herpes Simplex Virus[5,6]. The studies did not all find the same correlation between lichen planus and HCV infection. A 3.1-18.3% positive connection was seen in the instances. A higher correlation was found in oral lichen planus[7,12]. There is no correlation between lichen planus and HCV infection, according to a few studies[13-18]. It is currently unknown if HBV infection and Lichen planus are connected, despite several papers showing a greater prevalence of HBV in Lichen planus[19,20]. The association between HIV and Lichen planus was the subject of very few papers from India and the results were mixed[21].

MATERIALS AND METHODS

This was a descriptive study with cross sectional analysis of patients of Lichen planus.. Approval for study was obtained from the Institutional ethics committee. Both male and female patients of all age groups presenting with clinical features of Lichen planus at the dermatology out patient department (OPD) over a period of one year were enrolled.

Sample Selection

Inclusion Criteria:

- Patients aged 18 years and older.
- Patients with a confirmed diagnosis of lichen planus based on clinical or histopathological evidence.

Exclusion Criteria:

- Patients with incomplete or missing medical records

A total of 100 histologically diagnosed lichen planus samples were included for studying the

clinicopathological aspects of lichen planus. Clinical features like age, sex, type of lichen planus, location were recorded in the case record form from the pathology archives. Haematoxylin and Eosin (H and E) stained slides and blocks were retrieved from the record for all cases. Sections stained with H and E were used to study the histological features of lichen planus. The diagnoses for all the lichen planus cases included in the study were confirmed on repeat histological examination. All morphological features were also noted for comparison with clinical subtype.

RESULTS

Of the 100 patients present in this study, 57% were male and 43% were female. Thus, male patients were slightly more than female patients (Table 1).

Almost two-thirds (72%) of patients considered for the study had a lesion for a duration of less than 3 months. 8% of patients had a lesion for 3-6 months, 6% of patients had a lesion for a period of 6-12 months and 14% patients had a lesion for more than a year (Table 2).

Histopathology conducted on the patients considered for this study showed that nearly two-thirds of the patients had Hyperkeraosis (74%), Hypergranulosis (76%), Acanthosis (73%) and Basal cell degeneration (75%). Melanin Incontinence was observed in 63% of patients while only 14% patients had Civatte bodies (Table 3).

Table 1: Gender

Gender	No. of Patients (%)
Male	57 (57%)
Female	43 (43%)
Total	100 (100%)

Table 2: Duration of Lesion

Duration	No. of Patients (%)
0-3 months	72 (72%)
3-6 months	8 (8%)
6-12 months	6 (6%)
> 1 year	14 (14%)
Total	100 (100%)

Table 3: Histopathology

Histopathology	No. of Patients (%)
Hyperkeratosis	74 (74%)
Hypergranulosis	76 (76%)
Acanthosis	73 (73%)
Basal cell degeneration	75 (75%)
Melanin Incontinence	63 (63%)
Civatte bodies	14 (14%)

Table 4: Serology

Serology	No. of Patients (%)
HbsAg	
Positive	3 (3%)
Negative	97 (97%)
Anti HCV	
Positive	4 (4%)
Negative	96 (96%)
HIV	
Positive	2 (2%)
Negative	98 (98%)

Of the 100 patients considered for the study, 3 patients tested positive for HbsAg, while 97 patients tested negative. Four patients tested positive for HCV infection, while 96% patients tested negative. 2 patients were found to be HIV positive while 98 patients tested HIV negative (Table 4).

DISCUSSION

The current study provides a detailed description of the clinical and pathological characteristics of patients with lichen planus. Patients in our study with the highest visit counts were those between the ages of 20 and 40. This aligns with findings from other studies that describe the Indian population[21]. According to our research, women are more likely than males to be affected by lichen planus. While there hasn't been much consistency in the literature on the preferred sex of individuals with Lichen planus, most studies have shown that girls are more likely than males to be affected[22,23].

Most of the hallmark histopathologic features of Lichen planus were consistently observed during our examination. The most frequent abnormalities seen were wedge-shaped hypergranulosis, irregular canthosis, basal layer vacuolation, orthokeratosis and pigment incontinence. More than 90% of the time, these changes were discernible. The presence of pointed rete ridges, civatte bodies and dome-shaped papillae, which were seen in about 80% of cases, were further observations. The results of our investigation are in line with those of Ellis *et al*.[24], with the exception of the irregular acanthosis and the frequency of civatte bodies. These parameters showed increased frequencies in our investigation.

Hepatitis B and HCV viruses have been connected to the pathogenesis of Lichen planus. It is unknown exactly how Hepatitis B and Lichen planus are related, however immunisation against Hepatitis B is known to cause Lichen planus, especially after a second injection[25]. In our study, three percent of subjects had a positive hepatitis B test. Hepatitis B infection was reported in 6 and 15% of Lichen planus patients, respectively, by Nayaf *et al*.[26] and Daramola *et al*.[27]. Rather than being a result of common epitopes between virus-damaged hepatocytes and keratinocytes that produce HBsAg, lichen planus may constitute a cytotoxic reaction[28]. Four percent of the participants in our study tested positive for HCV infection. An HCV infection affected about 4% of their patients with lichen planus, according to past studies[29-32]. In our study, 2% of the patients had positive HIV tests. Suppressed CD4 positive cells, differences in antigen presentation and alterations in the immune system's reaction to antigenic stimuli are all potential causes of Lichen planus in HIV-positive patients[33].

CONCLUSION

Lichen planus is a complex dermatological disorder and this clinico-epidemiological and serological research study of lichen planus has provided valuable insights into the characteristics and prevalence of this dermatological condition. We have revealed new characteristics of lichen planus and its possible immunological basis by bridging the gaps between clinical, epidemiological and serological aspects. For patients to receive the best care possible, clinicopathological correlation is essential. Hepatitis B, C and the HIV virus are unrelated to Lichen planus. We therefore propose that viral serology (HBsAg, HCV, HIV) for Lichen planus should not be performed as a standard screening procedure.

REFERENCES

1. Aboobaker, J., N. Morar and P.K. Ramdial, 2009. Lichen planus and lichenoid drug eruption: A histological and immunohistochemical study. J. Cutan. Pathol., 36: 611-617.
2. Boyd, A.S. and K.H. Neldner, 1991. Lichen planus. J. Am. Acad. Dermatol., 25: 593-619.
3. Eisen, D., 2002. The clinical features, malignant potential and systemic associations of oral lichen planus: a study of 723 patients. J. Am. Acad. Dermatol., 46: 207-214.
4. Kridin, K. and R. Bergman, 2018. Lichen Planus and Malignancy: An Update. Front Med (Lausanne). Vol. 5, No. 183.
5. Lodi, G., C. Scully, M. Carrozzo, M. Griffiths and P.B. Sugerman *et al*., 2005. Current controversies in oral lichen planus: Report of an international consensus meeting. Part 1. Viral infections and etiopathogenesis. Oral Surg, Oral Med, Oral Pathol, Oral Radiol Endodontol., 100: 40-51.
6. Pellicano, R., F. Palmas, N. Leone, E. Vanni and M. Carrozzo *et al*., 2000. Previous tuberculosis, hepatitis C virus and lichen planus. A report of 10 cases, a causal or casual link. Panminerva Med., 42: 77-81.
7. Gerayli, S., Z. Meshkat, A. Pasdar, P.M. Mozafari and E. Banihashemi *et al*., 2015. The Association Between Oral Lichen Planus and Hepatitis C Virus Infection; A Report From Northeast of Iran. Jundishapur J. Microbiol., Vo. 8, No. 4.
8. Manomaivat, T., S. Pongsiriwet, C. Kuansuwan, W. Thosaporn and K. Tachasuttirut *et al*., 2018. Association between hepatitis C infection in Thai patients with oral lichen planus: A case-control study. J. Invest. Clin. Dent., Vol. 9, No. 2, e12316.
9. Javed, M., M.K. Ahmed, M. Tahir and M.I. Anwar, 2017. Frequency of HCV seropositivity in lichen planus. J. Pak. Assoc. Dermatol., 13: 67-71.
10. Rajouria, E.A., 2011. Association of Lichen Planus with HCV and HBV in Nepal. Post-Graduate Med. J. NAMS., Vol. 11.
11. Konidena, A. and B.V. Pavani, 2011. Hepatitis C virus infection in patients with oral lichen planus. Niger J. Clin. Prac., Vol. 14, No. 2.
12. Strak, S.K., K.I. Al-Hamdi and M.H. Alabbood, 2015 A study of lichen planus and its association with hepatitis C infection. J. Taibah Univ. Med. Sci., 10: 222-226.
13. Jayavelu, P. and T. Sambandan, 2012. Prevalence of hepatitis C and hepatitis B virus infection(s) in patients with oral lichen planus. J. Pharm. Bioallied. Sci., 4: S397-S405.
14. Anwar, M.A., S. Iqrar, Z. Akram, M.A. Tayyab and N. Afzal, 2018. Oral lichen planus and hepatitis C virus infection; a symbiotic relationship or a mere co-incidence? Int. J. Res. Med. Sci., 6: 772-775.
15. Zhou, Y., L. Jiang, J. Liu, X. Zeng and Q.M. Chen, 2010. The prevalence of hepatitis C virus infection in oral lichen planus in an ethnic Chinese cohort of 232 patients. Int. J. Oral. Sci., Vol. 2, No. 2.
16. Udayashankar, K. Nath and M Ds, 2008. Hepatitis Virus serology in patients with lichen planus. Int. J. Dermatol., Vol. 7, No. 2.
17. Shahatha, M. and Nayaf, 2008. Lichen planus and Hepatiti in Iraqi patients. Iraqi J. Comm. Med., 21: 148-152.
18. Donempudi, P., H. Bhayya, V. Meduri, G. Paramkusam and A.L. Tejasvi, 2016. Association of oral lichen planus with hepatitis C virus, surface antigen of hepatitis B virus and diabetes: A clinical and biochemical study. J. Indian Acad. Oral. Med. Radiol., 28: 256-261.
19. Rubsam, K., A. Schroll, P. Weisenseel, S. Multhaup and T. Ruzicka et al., 2011. Lichen ruber planus und Hepatitis Virus Infektionen: kausaler Zusammenhang. JDDG: J. Der. Deutschen Dermatologischen Gesellschaft, 9: 464-469.
20. Udaykhopkar, A., Valia and V. Kharkar, 2017. Autoimmune and other associations of Lichen planus. Lichenplanus Textbook. Shah, P.M. and V.W. (Eds.), The rare occurrence of cutaneous and mucosal lichen planus in HIV infection. BMJ Case Rep., Vol. 23, 222625.
21. Bhattacharya, M., I. Kaur, B. Kumar, 2000. Lichen planus: a clinical and epidemiological study. J. Dermatol., 27: 576-582.
22. White, C.J., 1919. Lichen Planus: a critical analysis of 64 cases. J. Cutan. Dis., 37: 671-684.
23. Altman, J. and H.O. Perry, 1961. The variations and course of lichen planus Arch. Dermatol., 84: 179-191.
24. Ellis, F.A., 1967. Histopathology of lichen planus based on analysis of one hundred biopsies. J. Invest. Dermatol., 48: 143-148.
25. Calista, D., 2001. Oral erosive lichen planus associated with thymoma. Int. J. Dermatol., 40: 762-764.

26. Nayaf, M.S., 2008. Lichen planus and Hepatiti in Iraqi patients. Iraqi J. Comm. Med., 21: 148-152.
27. Daramola, O.O.M., A.O. George, A.O. Ogunbiyi and J.A. Otegbayo, 2004. Hepatitis B virus in Nigerians with Lichen planus. West African J. Med., 23: 104-106.
28. Jayavelu, P. and T. Sambandan, 2012. Prevalence of hepatitis C and hepatitis B virus infection(s) in patients with oral lichen planus. J. Pharm Bioallied. Sci., 4: S397-S405.
29. Gerayli, S., Z. Meshkat, A. Pasdar, P.M. Mozafari and E. Banihashemi *et al*., 2015. The Association Between Oral Lichen Planus and Hepatitis C Virus Infection; A Report From Northeast of Iran. Jundishapur J. Microbiol., Vol. 8, No. 4.
30. Rajouria, E.A., 2011. Association of Lichen Planus with HCV and HBV in Nepal. Post-Graduate. Med. J. NAMS., Vol. 11.
31. Strak, S.K., K.I. Al-Hamdi and M.H. Alabbood, 2015. A study of lichen planus and its association with hepatitis C infection. J. Taibah Univ. Med. Sci., 10: 222-226
32. Zhou ,Y., L. Jiang, J. Liu, X. Zeng, Q.M. Chen, 2010. The prevalence of hepatitis C virus infection in oral lichen planus in an ethnic Chinese cohort of 232 patients. Int. J. Oral. Sci., Vol. 2, No. 2.
33. Tonsi, A. and A.J. Samdani, 2005. Association of lichen planus with hepatitis C virus infection. Ann. Saudi Med., 25: 243-246