

Epidemiological profile between 2020-2021 of patients with lichen planus treated in a tertiary hospital

Perfil epidemiológico entre 2020-2021 de pacientes com líquen plano tratados em hospital terciário

Fernanda Del Rio^{a*}, Thayane Lemos, Felipe Tavares, Manuela Cabral, and Ana L. Sampaio

Department of Dermatology, Pedro Ernesto University Hospital, Universidade do Estado do Rio de Janeiro, Rio de Janeiro, Brazil

^aORCID: 0000-0003-4446-634X

Abstract

Background: Lichen planus (LP) is a chronic inflammatory dermatosis of unknown etiology that manifests in various clinical forms on the skin, oral and genital mucosa, scalp, and nails. Reports have suggested that anxiety, stress, diabetes, autoimmune diseases, drugs and genetic predisposition may be triggers of the disease. Meanwhile, the association of LP with hepatitis C virus infection remains controversial. **Objectives:** To analyze the epidemiological profile of patients treated in a tertiary hospital and compare our findings with those in the literature. **Methods:** We conducted a retrospective cross-sectional observational study of patients with lesions of histopathologically confirmed LP who were treated in a tertiary hospital from January 2020 to January 2021. Additionally, we analyzed the association of LP with comorbidities, including hepatitis C and smoking. **Results:** Overall, 24 patients were included in the study. Of these, 19 (79%) were women, and 13 (55%) had comorbidities, including hypertension and diabetes mellitus. Additionally, 29% of the patients were smokers. The most common forms of LP found were cutaneous (15 patients, 63%), followed by a cutaneous plus nail (four patients, 17%), cutaneous plus oral (three patients, 12%) and nail (two patients, 8%) forms. Moreover, 20/24 (83%) patients with documented serology for hepatitis C showed negative results; however, one of these patients was treated for HCV 5 years before the onset of LP. **Conclusions:** The present study demonstrated that LP is more prevalent in women and those with higher phototypes (Fitzpatrick > III). In addition, it has several associated comorbidities. Meanwhile, although the association of LP with hepatitis C has been reported, we did not observe this in our study. Future studies with larger sample sizes should be conducted to confirm our results.

Keywords: Cutaneous lichen planus. Hepatitis C. Lichen planus. Mucous lichen planus. Research article.

Resumo

Fundamentos: Líquen Plano (LP) é uma dermatose inflamatória crônica de etiologia desconhecida, que se manifesta de várias formas clínicas na pele, mucosa oral e genital, couro cabeludo e unhas. Relatos sugerem que ansiedade, diabetes, doenças autoimunes, drogas, estresse e predisposição genética podem ser gatilhos da doença. Enquanto isso, a associação do LP com a infecção pelo vírus da hepatite C permanece controversa. **Objetivos:** Analisar o perfil epidemiológico dos

*Corresponding author:

Fernanda Del Rio
E-mail: fedelrio@hotmail.com

Received: 10-10-2022

Accepted: 30-11-2022

DOI: 10.24875/PJDV.22000031

Available online: 07-02-2023

Port J Dermatol and Venereol. 2023;81(1):2-6

www.portuguesejournalofdermatology.com

2795-501X / © 2022 Portuguese Society of Dermatology and Venereology. Published by Permanyer. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

doentes observados em um hospital terciário e comparar os nossos achados com os da literatura. **Métodos:** Realizou-se um estudo observacional transversal retrospectivo de doentes com lesões de LP histopatológico confirmados que foram tratados em um hospital terciário de janeiro de 2020 a janeiro de 2021. Além disso, analisamos a associação do LP com comorbilidades, incluindo hepatite C e o tabagismo. **Resultados:** Ao todo, 24 doentes foram incluídos no estudo. Destes, 19 (79%) eram mulheres e 13 (55%) tinham comorbilidades, como, por exemplo, hipertensão e diabetes. Além disso, 29% dos doentes eram fumantes ativos. As formas mais comuns de LP encontradas foram formas cutâneas (15 doentes, 63%), seguidas pela cutânea associada ao acometimento ungueal (4 doentes, 17%), cutânea associada ao acometimento oral (3 doentes, 12%) e ungueal (2 doentes, 8%). Além disso, 20/24 (83%) doentes apresentaram dosagem serologia documentada para hepatite C; destes, um caso positivo foi tratado 5 anos antes do início do LP. **Conclusões:** O presente estudo demonstrou que o LP é mais prevalente em mulheres e aqueles com fototipos mais elevados (Fitzpatrick > III). Além disso, apresenta diversas comorbilidades associadas. Embora tenha sido relatada associação de LP com hepatite C, não observamos isso no nosso estudo. Estudos futuros com tamanhos amostrais maiores dimensões devem ser realizados de modo a confirmar nossos resultados.

Palavras-chave: Líquen plano. Líquen plano cutâneo. Líquen plano mucoso. Hepatite C.

Introduction

Lichen planus (LP) is a chronic, autoimmune, and inflammatory condition that affects the skin and is mediated by T cells. Notably, it is more prevalent in middle-aged women^{1,2}. The etiology of the disease remains unknown, but possible trigger factors have been identified, including anxiety, diabetes, autoimmune diseases, drugs, stress and genetic predisposition. LP can affect several parts of the body, such as the skin, nails, and oral, vulvovaginal, esophageal, laryngeal, and conjunctival mucous membranes. LP has different subtypes that can be characterized depending on the site of involvement and morphology of the lesion. Most cases manifest with violaceous papules or plaques, which can be very pruritic and can be covered by white striations (Wickham striae)^{3,4}. The disease affects < 1% of the world's adult population; however, the oral form, which is the most prevalent, is present in up to 4% of adults⁵. Currently, epidemiological studies regarding LP are few and do not reflect the situation in Brazil.

Several studies have reported a relationship between hepatitis C virus infection and LP, and they have suggested that hepatitis C could be an etiological agent of LP⁶. However, the causal relationship between the two diseases has not been established; if they are related, it is unknown whether LP lesions are triggered directly by the virus or through an immunological reaction. Meanwhile, a higher prevalence of the oral LP subtype has been described in patients with positive hepatitis C serology. Nevertheless, data regarding the relationship between hepatitis C and LP remain controversial and vary depending on the country and prevalence of hepatitis C^{7,8}.

Objectives

This study assessed the epidemiological profile of patients with LP treated in a tertiary hospital and compared the findings with those in the literature.

Materials and methods

We conducted a retrospective cross-sectional observational study that evaluated the electronic medical records of patients with histopathologically confirmed LP who presented to the dermatology service from January 2020 to January 2021. Histopathological findings of LP included orthokeratic hyperkeratosis, wedge hypergranulosis, irregular acanthosis in sawtooth arrangement, dermoepidermal band-like inflammatory infiltrate, and liquefaction degeneration of the basal layer⁹. Additionally, patient data, including comorbidities, smoking, and hepatitis C serology, were obtained from the medical records, if available. Patients without histopathological confirmation of LP were excluded from the study.

Results

A total of 24 patients were included in the study. The mean age of the participants was 53.6 years, 16 (66.6%) patients were Fitzpatrick phototype IV/V, and 19 (79%) were women. Of the 24 patients, 13 (55%) had comorbidities. Among the most prevalent comorbidities were hypertension (10 patients, 42%), diabetes mellitus (six patients, 25%), hyperthyroidism (one patient, 4%), dyslipidemia (two patients, 8%), and depressive disorder (three patients, 13%), and seven patients reported smoking habits (29%). Overall, 22 (92%) patients had cutaneous lesions, six (25%) had nail lesions, and three

Table 1. Epidemiological profile of the 24 patients with lichen planus

Variables	Number (n = 24)	%
Age		
< 20	1	4%
20-40	2	8%
40-60	11	46%
> 60	10	42%
Phototype		
I or II	8	33.33%
III or IV	8	33.33%
V or VI	8	33.33%
Gender		
Men	5	21%
Women	19	79%
Comorbidities		
Yes	13	55%
No	11	45%
Related comorbidities		
Hyperthyroidism	1	4%
Diabetes <i>mellitus</i> type 2	4	17%
Diabetes insulin-dependent	2	8%
Prediabetes	2	8%
Dyslipidemia	2	8%
Depression	3	13%
Hypertension	10	42%
Patients with more than one comorbidity	8	62%
Smoking		
Yes	7	29%
No	17	71%
Sub-type of LP		
Cutaneous	15	63%
Cutaneous + nail	4	17%
Cutaneous + oral	3	12%
Nail	2	8%
Types of cutaneous LP (n = 15)		
Classical LP	9	60%
Pigmented LP	2	13%
Hypertrophic LP	1	7%
Inverted LP	1	7%
Overlap between lupus erythematosus and LP	2	13%
HCV serology (n = 20)		
HCV positive	0	0%
HCV negative	20	100%

(12%) had oral mucosal lesions. Meanwhile, 15 (63%) had cutaneous LP, nine (60%) had classical LP, two (13%) had pigmented LP, one (7%) had hypertrophic LP, and one (7%) had inverted LP. Notably, there were two (8%) cases of lupus erythematosus/LP overlap. Moreover, six (25%) patients presented with nail alterations and chromonychia due to LP. Regarding hepatitis C serology, 20 patients (83%) had documented serology for hepatitis C, but only one patient (4%) had a positive serology, underwent treatment 5 years before the appearance of lesions and currently has a negative serology (Table 1).

Discussion

Our findings show that patients with higher phenotypes have a higher prevalence of LP, which is consistent with data in the literature^{10,11}. Notably, hypertension and diabetes were highly prevalent among our patients with LP. In several studies, dyslipidemia is associated with LP, but diabetes and hypertension are not; this may be attributed to metabolic syndrome alterations, which is a known risk factor for LP and other inflammatory dermatoses such as psoriasis^{12,13}.

From 2000 to 2021, 279,872 confirmed cases of hepatitis C were reported in Brazil; however, there is a decreasing trend in the number of cases. In 2016, there were 25,324 reported cases of hepatitis C, with a prevalence of 1.22%/100,000 inhabitants. In 2019 before the COVID-19 pandemic, there were 23,111 reported cases of hepatitis C, with a prevalence of 1.09%/100,000 inhabitants¹⁴. The decrease in the number of cases may be attributed to the introduction of antiretroviral drugs capable of curing the disease, which are distributed free of charge by the unified health system.

Although an association between LP and hepatitis C were reported by several studies, variables, such as the location where the studies were conducted, should be considered. In countries with a higher prevalence of hepatitis C, a greater association between the two diseases was reported. Meanwhile, there are authors who argue that the association between hepatitis C and LP may be the result of variants of the virus found only in certain geographic regions^{7,15}. Despite the known association between LP and hepatitis C, we did not find an association between the two diseases.

In our study, most of the patients were women over 50 years old. Additionally, there was a high prevalence of comorbidities, including hypertension and diabetes,

and smokers among the study population. Smoking is considered to be associated with oral LP¹⁰; in our study, smoking was associated with a greater predisposition for the cutaneous form of LP. The most evident LP subtype in our study was the classical cutaneous subtype, followed by the nail and oral subtypes.

The limitations of our study were the limited sample size and short analysis time. Oral biopsies were rarely performed and could justify the reduced number of oral variants.

Conclusion

Hepatitis C virus is reported to be an etiological agent of LP, suggesting that cutaneous and mucosal lesions may be caused by either the direct action of the virus or by an induced immune response⁷. However, in our sample, there was only one case of LP with a previous hepatitis C, and this patient developed LP 5 years after completing antiviral treatment.

Further studies are suggested to elucidate both the association and etiology. The association between the two diseases is controversial and varies according to the literature used as a reference.

Funding

None.

Conflicts of interest

None.

Ethical disclosures

Protection of human and animal subjects. The authors declare that no experiments were performed on humans or animals for this study.

Confidentiality of data. The authors declare that no patient data appear in this article.

Right to privacy and informed consent. The authors declare that no patient data appear in this article.

References

- Schwager Z, Stern M, Cohen J, Femia A. Clinical epidemiology and treatment of lichen planus: a retrospective review of 2 tertiary care centers. *J Am Acad Dermatol.* 2019;81:1397–9.
- Canto AM, Müller H, Freitas RR, da Silva Santos PS. Líquen plano oral: diagnóstico clínico e complementar. *An Bras Dermatol.* 2010;85:669–75.

3. LI C, Tang X, Zheng X, Ge S, Wen H, Lin X, *et al.* Global prevalence and incidence estimates of oral lichen planus: a systematic review and meta-analysis. *JAMA Dermatol.* 2020;156:172–81.
4. Gorouhi F, Davari P, Fazel N. Cutaneous and mucosal lichen planus: a comprehensive review of clinical subtypes, risk factors, diagnosis, and prognosis. *Sci World J.* 2014;2014:742826.
5. Arnold DL, Krishnamurthy K. Lichen Planus In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022.
6. Azulay-Abulafia L *et al.* Atlas de Dermatologia – Da semiologia ao diagnóstico – 3ª edição, Rio de Janeiro, 2020;689–90.
7. Guerreiro TDT, Machado MM, Freitas THP. Associação entre líquen plano e infecções pelo vírus da hepatite C: um estudo prospectivo envolvendo 66 pacientes da clínica dermatológica da Santa Casa de Misericórdia de São Paulo. *An Bras Dermatol.* 2005;80:475–80.
8. Rocha MR, Lins L, Cattony AC. Associação entre líquen plano e o vírus da hepatite C: um estudo de metanálise. *Rev Port Estomatol Med Dent Cir Maxilofac.* 2018;59:2–9.
9. Ronald Rapini, *Dermatopatologia Prática – 2ª edição – Rio de Janeiro, Brasil* Capítulo 2; 56: Elsevier 2013.
10. Silverman S, Gorsky M, Lozada-Nur F, Giannotti K. A prospective study of findings and management in 214 patients with oral lichen planus. *Oral Surg Oral Med Oral Pathol.* 1991;72:665–70.
11. Kanwar AJ, Dogra S, Handa S, Parsad D, Radotra BD. A study of 124 Indian patients with lichen planus pigmentosus. *Clin Exp Dermatol.* 2003;28:481–85.
12. Aryanian Z, Shirzadian A, Hatami P, Dadras H. High incidence of metabolic syndrome components in lichen planus patients: a prospective cross-sectional study. *Int J Clin Pract.* 2022;2022:7184678.
13. González-Moles MÁ, Warnakulasuriya S, González-Ruiz I, González-Ruiz L, Ayén Á, *et al.* Worldwide prevalence of oral lichen planus: a systematic review and meta-analysis. *Oral Dis.* 2021;27:813–28.
14. Gisondi P, Fostini AC, Fossà I, Girolomoni G, Targher G. Psoriasis and the metabolic syndrome. *Clin Dermatol.* 2018;36:21–28.
15. MS/SVS/DCCI - Departamento de Doenças de Condições Crônicas e Infecções Sexualmente Transmissíveis. Notas:(1) Dados até 31/12/2019; disponíveis em <http://indicadoreshepatites.aids.gov.br/>, acessados em 05/09/2022.