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ORIGINAL ARTICLE

Prevalence of desquamative gingivitis in patients with oral lichen planus

Thaís Cristina Esteves-Pereira [1]
Milena Moraes de-Carvalho [2]
Isabella Rodrigues de-Almeida [3]
Carine Ervolino de-Oliveira [4]
João Adolfo Costa Hanemann [3]
Felipe Fornias Sperandio [5]
Marina Lara de-Carli [3]*

Abstract:

Introduction: Given the stress-related nature of desquamative gingivitis (DG), knowing its clinical and epidemiological aspects becomes essential during the COVID-19 pandemic. Therefore, the aim of the present study was to assess the prevalence of DG in patients with oral lichen planus (OLP). **Material and methods:** All cases displaying clinical and histopathological diagnoses of OLP, treated at our institution from 2000 to 2019 and presenting DG lesions at the time of initial examination were included in the study. Epidemiological, clinical and treatment data were analyzed, including OLP classification. **Results:** The results showed that 23.3% of the cases presented DG at the time of diagnosis, all were women, with a mean of 46 years old, and diagnosed with erosive OLP. Most were White; the most frequent occupations were homemaker and general services assistant. Half of the included patients presented lesions both in marginal and/or inserted gingiva in the anterior and posterior regions, and the majority (71.4%) related pain or discomfort or burning sensation. Topical triamcinolone acetonide aqueous solution ranging from 0.1%, 0.2% and 0.3% was prescribed for all patients, showing lesion recurrence in 21.4% of them. **Conclusion:** DG affected women with an average age of 46 years. Triamcinolone acetonide was the drug of choice for the treatment of DG; however, the recurrence rate was high. Therefore, the findings of this study highlight the need for further studies to elucidate the DG behavior and the lesion response to different therapies.

Keywords: Autoimmune Diseases; Gingivitis; Lichen Planus; Oral. Prevalence

[1] Universidade Estadual de Campinas, Oral Diagnosis Department - Piracicaba - SP - Brasil.
[2] Universidade do Estado de São Paulo, Department of Diagnosis and Surgery - Araraquara - SP - Brasil.
[3] Universidade Federal de Alfenas, School of Dentistry - Alfenas - MG - Brasil.
[4] Universidade Federal de Alfenas, Department of Pathology and Parasitology - Alfenas - MG - Brasil.
[5] University of Saskatchewan, College of Dentistry - Saskatoon - SK - Canadá.

Correspondence to:
Marina Lara de-Carli.
E-mail: marina.carli@unifal-mg.edu.br

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INTRODUCTION

Autoimmune gingival lesions represent a challenge to the dentist and demand certain knowledge for their correct diagnosis, management and treatment[1,2]. Although different oral manifestations such as white plaque, fine white radiating striae, bullae or ulceration can occur in autoimmune mucocutaneous disorders[3], desquamative gingivitis (DG) remains the most common gingival manifestation1]. DG can be defined as a clinical picture or a gingival response to various immunological disorders and indicates the presence of areas of smooth erythema, desquamation, and erosion of the gingiva, regardless of the etiopathogenesis[1,2,4,5]. This condition can be present in oral lichen planus (OLP), mucous membrane pemphigoid and pemphigus vulgaris in up to 75%, 9% and 4% of the cases, respectively; DG also commonly has its diagnose delayed[6].

OLP represents the main autoimmune disease affecting the oral cavity and the most common cause of DG[6]. In addition to diagnosing and treating DG the dentist may provide careful clinical surveillance given the somewhat unclear potential of malignant transformation of OLP[5,7]. To this date, the accurate etiology of OLP remains unknown. The development of OLP lesions appears to be multifactorial and caused by a dysregulated T cell-mediated response to exogenous triggers and/or autoimmune response to antigens of the basal layer of the mucosal epithelium[5]. Several potential OLP triggers have been proposed, such as genetic background, psychological stress, viral infections, systemic diseases and hypersensitivity reactions[5,8]. Genetic polymorphisms of several cytokines, familial cases and hereditary predisposition due to chromosome mutation have also been reported[8]. However, psychological stress plays an important role in the occurrence and progression of chronic diseases[5,8–10].

Accordingly, OLP patients have shown higher levels of anxiety, greater depression and increased vulnerability to psychological disorders when compared to healthy patients[9,10], including exacerbation of OLP lesions during episodes of psychological stress. There is evidence that OLP may be associated with hepatitis C virus (HCV) infection; nevertheless, is has been suggested that this association may vary according to geographic location and population heterogeneity[11]. The link between OLP and other systemic diseases, such as diabetes mellitus, thyroid disorders, graft versus host disease (GVHD), has also been studied[12]. Studies have recently associated OLP development after COVID-19 infection[13–15].

Being a condition with potential increase during the pandemic by COVID-19, knowing the clinical aspects of DG and its treatment becomes mandatory. Therefore, the aim of this study was to evaluate the prevalence of DG in patients with OLP.

MATERIALS AND METHODS

The study was approved by the Human Research Ethics Committee of the Universidade Federal de Alfenas (protocol # 3.014.372). A retrospective medical chart review of all patients who were diagnosed with OLP at Laboratory of Oral Pathology of our institution was conducted from 2000 to 2019.

All cases histopathologically diagnosed as OLP, treated at the Oral Medicine Clinic of our institution, and presenting DG lesions at the time of the diagnosis, were included in the study. Clinical and histopathological criteria for OLP diagnosis proposed by Cheng et al.[16] were utilized: "1. Clinical criteria: multifocal symmetric distribution; white and red lesions exhibiting one or more of the forms reticular/papular, atrophic (erythematous), erosive (ulcerative), plaque, bullous; 2. Histopathological criteria: band-like or patchy, predominantly lymphocytic infiltrate in the lamina propria confined to the epithelium-lamina propria interface; basal cell liquefactive (hydropic) degeneration; lymphocytic exocytosis; absence of epithelial dysplasia; absence of verrucous epithelial architectural change" (Table 1).

Table 1. Clinical and histopathological criteria for OLP diagnosis according to Cheng et al.[16]

Clinical criteria	Histopathological criteria
White and red lesions exhibiting one or more of the forms reticular/papular, atrophic (erythematous), erosive (ulcerative), plaque, bullous.	Band-like or patchy, predominantly lymphocytic infiltrate in the lamina propria confined to the epithelium-lamina propria interface;
Multifocal symmetric distribution;	Basal cell liquefactive (hydropic) degeneration;
	Lymphocytic exocytosis;
	Absence of epithelial dysplasia;
	Absence of verrucous epithelial architectural change.

Epidemiological data were collected from the medical records of the included patients, such as sex, age, race, systemic diseases, evolution time of the lesion(s), family history of OLP, occurrence of lesions in the skin and other mucous membranes; and clinical data, such as the clinical classification of OLP as reticular or erosive

according to Zakrzewska et al.[17], pain symptomatology, discomfort or burning sensation, lesion location, the type of treatment used, time, dose and route of drug administration, adverse effects, occurrence of opportunistic infections, recurrence rate of the lesions and malignant transformation of OLP lesions.

RESULTS

The results showed that 23.3% of OLP cases presented DG at the time of diagnosis, all were women and diagnosed with erosive OLP. The age ranged from 17 to 63 years, with a mean of 46 years old (Table 2). Most were White; the most frequent occupations were homemaker and general services assistant. Regarding systemic diseases at the time of diagnosis, gastritis was the most frequent affecting 3 (21.4%) patients, followed by arterial hypertension and hypothyroidism, each affecting 2 (14.3%) patients. Depression and panic syndrome also affected 2 (14.3%) patients each.

Table 2. Age distribution of the patients.

Age	Patients (%)
11 to 20 years old	1 (7.14%)
21 to 30 years old	1 (7.14%)
31 to 40 years old	3 (21.43%)
41 to 50 years old	3 (21.43%)
51 to 60 years old	5 (35.72%)
61 to 70 years old	1 (7.14%)
Total	**14 (100.0%)**

OLP was classified as erosive in all (100.0%) patients, as DG is a gingival manifestation of the erosive form. The patients reported pain or discomfort or burning sensation in 71.4% of cases, evidencing the need for early management. On intraoral exam, 3 patients (21.4%) had lesions involving marginal and/or inserted gingiva in the anterior teeth, 4 patients (28.6%) had lesions in the posterior region (Fig 1A). Seven (50.0%) presented lesions both in marginal and/or inserted gingiva in the anterior and posterior regions (Fig 1B) (Table 3). OLP evolution time was longer than six months in 64.3% of the patients, representing a chronic condition, capable of causing difficulties during feeding, phonation and even compromising aesthetics, reducing the quality of life of affected patients.

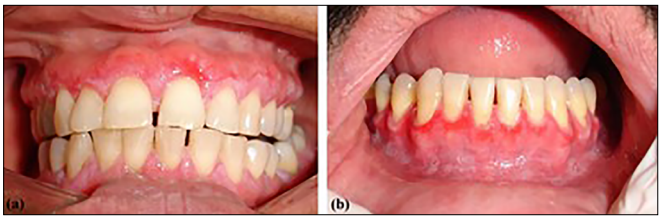

Figure 1. Desquamative gingivitis. A. A 49-year-old female with erythema and desquamation of the marginal gingiva in the region of tooth 21, extending to the attached gingiva. B. A 38-year-old male presenting generalized manifestation of desquamative gingivitis affecting the marginal gingiva of the entire mandibular arch.

Table 3. Location of desquamative gingivitis lesions.

Location of lesions	Patients (%)
Lesions involving marginal and/or inserted gingiva in the **anterior teeth**	4 (28.6%)
Lesions involving marginal and/or inserted gingiva in the **posterior teeth**	3 (21.4%)
Lesions both in marginal and/or inserted gingiva in the **anterior and posterior regions**	7 (50.0%)
Total	**14 (100.0%)**

Topical triamcinolone acetonide aqueous solution was the drug of choice for the treatment of OLP. The concentration ranged from 0.1%, 0.2% to 0.3% and was prescribed for all (100.0%) patients. Ten (71.4%) patients used 4 times a day and 4 (28.6%) used 3 times a day. For one (1.6%) patient was prescribed clobetasol propionate 0.05% aqueous solution due to lack of response with triamcinolone acetonide 0.2% aqueous solution. Four (28.6%) patients were referred for evaluation with a dermatologist due to the presence of skin lesions. Regarding the side effects of the use of corticosteroids in the treatment of OLP, 2 (14.3%) patients developed oral candidiasis, being treated with Fluconazol 150 mg, 1 tablet a day, for 7 days.

Among the 14 patients in the study, 9 (64.3%) attended the 2-week follow-up visit, with 1 showing complete improvement (11.1%) and 8 showing partial improvement (88.9%). At the 4-week follow-up, 8 (57.1%) patients attended, of which 1 (12.5%) showed complete improvement, 6 (75.0%) partial improvement and 1 (12.5%) worsened of the clinical condition. Eight (57.1%) patients were present at the 8-week follow-up, 1 (12.5%) had total improvement, 4 (50.0%) had partial improvement, 1 (12.5%) had no improvement and 2 (25.0%) worsening of the clinical picture. The follow-up period for patients ranged between 2 weeks and 11 months, with a mean of 4 months.

Concerning OLP recurrence, 3 (21.4%) patients showed relapse of the lesions. The mean interval for the reappearance of the lesions was 45 months (approximately 3 years and 9 months), ranging between 3 months and 10 years. Two (14.3%) patients had a second relapse of the disease, with reappearance intervals ranging between 2 and 10 years after diagnosis. There was malignant transformation of OLP lesion in only one (7.1%) patient, 2 years after the diagnosis of OLP. The lesion located on the inserted gingiva of the upper left premolars was microscopically diagnosed as squamous cell carcinoma.

DISCUSSION

The role of stress as a trigger for the development of OLP, associated with immune system dysregulation, is well known[8,10]. Levels of stress, anxiety and psychological disorders are higher among OLP patients[9]; furthermore, acute and chronic psychosocial stress might induce alterations in innate and adaptive immune responses. Considering the current pandemic situation caused by SARS-CoV-2, patients have shown increased levels of stress due to numerous changes in daily life and even during COVID-19 treatment[18–20], which can be explained by the fear of contamination, both for the person itself or their family as well as constantly dealing with self-isolation, freedom impairment and increasing sense of helplessness, enforcement of hygiene methods like washing and disinfecting hands frequently, wearing masks, sterilizing surfaces and keeping up with the news about the spread of the disease and its victims.

Brazil has currently over 34,568 million confirmed cases of COVID-19 contamination[21], with a direct impact on the economic and nutrition areas, and specially on health, considering the economic recession that directly affects health expenditures[22,23]. Thus, an increase in the prevalence of DG may occur, and the dentist should be alerted to perform early diagnosis and adequate treatment.

The results of our study highlighted the prevalence of patients from 40 to 60 years old, as reported in the literature[24,25]. At 40 years, the risk of developing OLP is 3.43 higher when compared to 30 years, increasing significantly and progressively after reaching 40 years[24]. Furthermore, all included patients were women, reenforcing the predilection of females to develop OLP[5,25].

Concerning the oral mucosal area affected by OLP lesions, almost half of patients show gingival lesions and approximately 10% of cases present only gingival involvement[1]. Atrophic-erosive OLP lesions in the gingiva are described as DG, which might affect the marginal area and the whole thickness of the inserted gingiva[1,6,8]. In fact, our results showed half of the patients showed involvement of the marginal and inserted gingiva, in the anterior and posterior region. To the best of our knowledge, there is no sufficient current evidence to demonstrate whether DG lesions caused by OLP are more frequent in the anterior or posterior region or even in both locations, highlighting the need for research in DG.

The aim of OLP treatment is to control symptoms towards healing erosive and plaque lesions and improving patients' quality of life, as well as to prevent recurrences and the presumable risk of malignant transformation of OLP[26–28]. Corticosteroids are the first-choice drugs for OLP management[26,27], and might be presented in variable concentrations and excipients, such as mouthwash and paste. Topical medication is preferred due to its accessibility and ease of use, besides avoids systemic distribution of drugs[26–28]. Triamcinolone acetonide 0.1%, fluocinolone acetonide 0.1%, fluocinonide 0.05% and clobetasol propionate 0.05% have been the mostly investigated and used topical corticosteroids for treating OLP[8]. So far, there is no conclusive evidence that one corticosteroid is more effective than other[29,30]. In our study, triamcinolone acetonide aqueous solution was prescribed for all (100.0%) patients; the mouthwash was well accepted by them. The prolonged used of this medication can result in oral candidiasis, as seen in 14.3% of the included patients; the contact with the oral mucosa might damage its barriers and cause immunodepression, favoring the appearance of candidiasis[8].

The main limitations in the present study were the lack of data at the medical records in describing DG lesions and treatment response and the low rate of OLP patients returning for follow-up, highlighting the need to appropriately inform patients of the importance of lesion follow-up.

CONCLUSION

In conclusion, DG represented an important clinical manifestation of OLP, affecting women with a mean of 46 years old. The prevalence of GD in patients with OLP was 23.3%. The majority were symptomatic and were localized or generalized in the gingival tissue. Triamcinolone acetonide was the drug of choice for treating DG; however, recurrence rate was high. Further studies to elucidate the DG clinical behavior and lesion response to different therapeutics are mandatory.

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CONFLICT OF INTEREST

The authors state no conflict of interests. All authors have read and approved the final article.

INFORMED CONSENT

The present study was retrospective through medical records analysis. Informed consent was present in the medical record.

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