

Quantitative Analysis of Candidiasis and Pyrosis in Oral Lichen Ruber

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Summary

All oral lichen ruber (OLR) cases seen at the Department of Oral Medicine, School of Dental Medicine University of Zagreb, from January 1, 1995 to December 31, 1998, were included in this retrospective study. The aim of the study was to assess the prevalence of *Candida* (*C. albicans*) infection and burning mouth syndrome (BMS) in OLR patients. The mean age of the examined men and women was 53 and 55 years, respectively. In women, the prevalence of OLR was twice as high as in men (66.6% : 33.3%). OLR most commonly occurred between the age of 40 and 60 years. The most frequent type of OLR was lichen planus (69%). *C. albicans* was detected in 75 of 174 (43.1%) patients, while BMS was present in 62 (35.6%) patients. There were 39 (22.4%) patients with candidiasis (without BMS), 26 (14.9%) with BMS (without candidiasis), and 36 (20.7%) with both candidiasis and BMS. The high prevalence of *C. albicans* infection and BMS concurrence indicates to the need for simultaneous treatment of both entities.

Key words: oral lichen ruber, candidiasis, pyrosis.

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Introduction

Lichen ruber is a chronic inflammatory disease of the skin and mucosa. It belongs to autoimmune mucocutaneous disorders which may eventually convert into a precancerous lesion (1). Lichen ruber may exclusively involve the skin or mucosa, or both (2,3). Oral lichen ruber (OLR), diabetes mellitus, and hypertension have been described as a triad of symptoms named Grinspan syndrome (2). Although the exact cause of lichen is unknown, experimental observations suggest it to be an inflammatory, T-cell mediated immune response (2-5). Deposits of IgG, IgM, C3 and C4 have been found in skin and oral lesions (3).

Candidiasis or moniliasis is the most common oral fungal infection caused by *C. albicans*. *C. albicans* is a normal commensal of the oral cavity flora which may under certain conditions assume a pathogenic role and lead to clinical manifestations (6).

Burning mouth is a symptom occurring in the form of transient or persistent burning sensation in oral mucosa of uniform or varying severity (7,8) in the mouth with otherwise normal mucosa (9). When restricted to the tongue, it is called glossopyrosis.

In the present study, data on patients treated at the Department of Oral Medicine, Zagreb University School of Dental Medicine, from January 1, 1995

till December 31, 1998, were retrospectively examined. The aim of the study was to determine the following:

1. proportion of patients with diagnosis of OLR;
2. proportion of patients with *C. albicans* infection;
3. proportion of patients with symptoms of pyrosis;
4. prevalence of candidiasis, pyrosis, and of both candidiasis and pyrosis in OLR; and
5. proportion of patients with a diagnosis of OLR in the total Department casuistics.

Patients and Methods

Records of patients with a diagnosis of OLR, treated during the four-year period (1995-1998) were selected from the Department files. A card containing the following data was designed for each individual patient: 1) file number, age, sex, occupation and duration of OLR (history) until examination in the Department; 2) clinical picture of lichen (planus with variations, erosive, bullous), presence of *C. albicans* and pyrosis; 3) history data, diagnoses of systemic diseases; and 4) laboratory tests (blood glucose, lipids, cholesterol, triglycerides, urea, creatinine, AST, ALT, and GGT).

The diagnosis of *C. albicans* infection was based on the finding of an oral mucosa swab cultured on Sabouraud agar at 37 C for 48 hours. The diagnosis of pyrosis was made on the basis of history data.

Results

During the period from January 1, 1995 till December 31, 1998, analyzed in this retrospective study, OLR was diagnosed in 174 out of 3802 patients during their first visit. Sample characteristics and results obtained are shown in Tables 1-7. The data presented in Table 1 reveal the rate of OLR in the Department casuistics during the study period to be 4.58%, indicating that OLR was found in every 22nd patient. Patient distribution according to 10-year age groups corresponded to the gaussian curve pattern (Table 3). In the OLR patient sample, *C. albicans* infection was detected in almost every second patient, and pyrosis in more than every third

patient (Tables 4 and 5). Table 6 presents overall data on the OLR patient sample, showing that candidiasis was found in almost every fourth patient, pyrosis in every sixth, and both candidiasis and pyrosis in every fifth. In other words, six out of 10 OLR patients were affected by either candidiasis or pyrosis or both. Therefore, treatment of OLR should also include therapy for candidiasis and pyrosis when appropriate.

Discussion

The finding of twofold prevalence of OLR in women (66.6%) and of its occurrence after the age of 40 are consistent with literature reports (1,10). The most common morphological variation was lichen planus (69.0%), followed by the erosive form (29.3%). The bullous variation along with erosive form was recorded in only three (1.7%) cases. Bullae and vesicles as oral mucosa efflorescence rarely persist in the mouth, because they rupture soon due to the pressure on oral mucosa during mastication and deglutition. Most of the erosive forms are probably preceded by the vesiculobullous form, which ruptured at the time of examination. Table 8 shows the prevalence of *C. albicans* infection in OLR, which is comparable to findings reported elsewhere.

Van der Waal (14) differentiates idiopathic and symptomatic burning mouth syndrome. In the group of symptomatic burning mouth syndrome, the symptoms may include oral mucosa lesions; fissured, rhomboid or geographic tongue; leukoplakia; erythroplakia; oral hairy leukoplakia; foliaceous papillitis; infections, especially with *C. albicans*; and oral lichen. He emphasizes the erosive variation of oral lichen which results in a sensation of pain and burning in the mouth (14). In our OLR patient sample, 62 of 174 (35.6%) patients reported the symptom of burning mouth.

Conclusions

The results obtained in the study with respect to the aim of the study and procedures performed pointed to the following conclusions:

1. About 1000 new patients are examined in the

Department of Oral Medicine, Zagreb University School of Medicine in Zagreb per year.

2. OLR is diagnosed in every 22nd (4.58%) of these patients.
3. OLR is twice as frequent in women as in men, occurring at a mean age of 54 years. The patients' age distribution follows the gaussian curve pattern, according to which OLR most commonly occurs between the age of 40 and 60.
4. *C. albicans* infection was present in 75 (43.1%) patients.
5. The symptom of pyrosis was recorded in 62 (35.1%) patients.
6. In the treatment of patients with a diagnosis of OLR, *C. albicans* infection should be confirmed or excluded by laboratory tests, and a symptom of pyrosis by history data. If either or both are present, they should be treated simultaneously with OLR.