

## Impact of oral lichen planus on quality of life.

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### Abstract

**Background:** Oral Lichen planus is a chronic, inflammatory, mucocutaneous disease with female predominance. The aim of this study was to investigate the psychological problems and oral health-related quality of life in patients with OLP. **Material and Methods:** Sixty patients were divided into two groups, Group A and Group B. Group A (n=30) received topical triamcinolone acetonide 0.1%. Group B (n=30) received topical triamcinolone acetonide 0.1% along with lycopene 8 mg twice daily. Quality of life was measured using the European Organization for Research and Treatment of Cancer Quality of Life head and neck 35 Questionnaire. **Results:** At the end of third month Group B had better outcome than Group A. **Conclusion:** Oral lichen planus has a significant psychological impact on patients. Hence quality of life should become an essential tool in clinical practice to better understand patient reported outcomes.

**Key words:** Oral lichen planus, quality of life,

### Introduction

Oral Lichen planus (OLP) is a chronic, inflammatory, mucocutaneous disease that affects 1-2% of the general population. It most frequently seen in the middle aged and the elderly populations with a female to male ratio of approximately 2:1.<sup>1</sup> About 30-70% of patients with skin lesions have oral involvement, while 15% present with only oral involvement.<sup>2</sup> Oral

lichen planus primarily affects the buccal mucosa, gingiva and the dorsal surface of the tongue. Clinical variants of oral lichen planus include reticular, plaque-like, papular, erosive, atrophic, hypertrophic and vesicullo-bullous form. Of these, the reticular form is the commonest while bullous is the rarest.<sup>3</sup> Although the exact etiopathogenesis of OLP remains unclear, immunological mechanisms are likely to play an important role.<sup>4,5</sup> Malignant transformation of oral lichen planus occurs

in about 1% of patients but is more prevalent among those with atrophic and erosive lesions<sup>6,7</sup> The most commonly used drugs in the treatment of OLP are Corticosteroids, immunosuppressants such as cyclosporin, tacrolimus, other drugs such as azathioprine, calcineurin inhibitors, mycophenolate mofetil, dapsone, retinoids, and hydroxychloroquine can be used in recalcitrant cases.<sup>8</sup>

Symptoms of oral lichen planus can impair patient's quality of life (QoL). Literature demonstrated that the QoL of patients affected by OLP has been less studied. Hence the aim of this study was to investigate the psychological problems and oral health-related quality of life in patients with OLP.

## Material and Methods

This study was conducted in Dr. H.S.R.S.M. Dental College Hingoli, India, during one complete calendar year from June 2016 to May 2017. We identified 60 OLP patients attending the dental outpatient department (OPD). A detailed case history of all patients was recorded and diagnosis of OLP was made by clinical and histopathologic examination. Sixty patients were divided into two groups, Group A and Group B. Group A (n=30) received topical triamcinolone acetonide 0.1%. Group B

(n=30) received topical triamcinolone acetonide 0.1% along with lycopene 8 mg twice daily. There were no restrictions on patient selection with regard to history of areca nut use, disease stage and demographic characteristics. First follow-up was scheduled 15 days after initial treatment and the subsequent assessments were made 30 days to 45 days after initial treatment. The ethical committee of the institute approved the study and treatment was carried out with the patients' permissions.

Quality of life was measured using the European Organization for Research and Treatment of Cancer Quality of Life head and neck 35 Questionnaire (EORTC QLQ-C35). The head & neck cancer module is meant for use among a wide range of patients with head & neck cancer, varying in disease stage and treatment modality.<sup>9,10</sup> The EORTC QLQ-C35 is a well-known instrument for measuring quality of life in head and neck cancer patients and contains 35 items that measure symptoms and side effects of treatment, social function and body image/sexuality. Seven multi-item scales are incorporated in the head & neck cancer module that assess pain, swallowing, senses (taste and smell), speech, social eating, social contact and sexuality. Other than this there are eleven single items.

## Results

In this study we had 60 patients with ages between 28 and 55 years. Most of the patients were females (85%). OLP lesions was more frequently located on the buccal mucosa (87%), followed by labial mucosa (35%), dorsum of tongue (22%) and gingival (20%). At the end of 45 days Group A and Group B showed 75% and 87% decrease in size of the lesion respectively. Burning sensation of oral mucosa was decreased by 82% and 90% in group A and group B respectively ( $Z > 1.96$ ,  $P < 0.05$ ) (Table I). The QLQ-H&N35 questionnaire was applied before starting the treatment, and subsequently at 15, 30 and 45 days later. After 15, 30 and 45 days of treatment, compared to before starting the treatment, all symptom scales of the quality of life were affected negatively. At the end of 3rd month after the treatment, there was a decrease in the pain, in swallowing problems, in speech problems, in problems with eating in a social environment, in problems with socializing with other people, in feeling sick, in loss of sexual desire and in opening mouth. Compared with Group A, Group B had better outcome in burning sensation, pain, swallowing, senses (taste/smell), speech, social eating, social contact, teeth, dry mouth, sticky saliva, and feeling ill, but with statistically significant difference in pain,

senses (taste/smell), speech, social eating, social contact, teeth and opening mouth.

Table 1: Mode of management of OLP

Mode of management	No. of patients	Relief of symptoms / signs		
		Size of lesion	Burning sensation	
Triamcinolone acetonide 0.1%	30	75%	82%	$Z > 1.96$ $P < 0.05$
Lycopene 16 mg/day + Triamcinolone acetonide 0.1%	30	87%	90%	

## Discussion

In clinical trials and in routine treatment, QOL is an important outcome to be considered. It refers to the patient's perception of the effects of the disease and the impact on the patient's daily functioning. Because of the unknown risk of malignant transformation, oral potentially malignant disorders could have a significant psychological impact on patient. Tadakamadla J et al proved that OLP have a significant impact on the QoL of affected individuals.<sup>11</sup> Parlatescu I et al<sup>12</sup> assessed QoL by using the Romanian version of the short form of the Oral Health Impact Profile (OHIP-14). The most prevalent OLP clinical

form was keratotic form, followed by atrophic, erosive-ulcerative, and bullous forms. A negative social impact was reported on psychological discomfort domain for OLP, as compared with healthy controls. They concluded that psychological therapy and meeting the educational needs might improve the OHRQoL of patients with common clinical forms of OLP.

In a study by Vilar Villanueva M et al<sup>13</sup> OLP patients showed higher scores on Hospital Anxiety and Depression Scale (HADS) (Anxiety  $P < 0.01$ , Depression  $P < 0.05$ ) and Oral Health Impact Profile 14 (OHIP-14) (Physical pain  $P < 0.05$ , Psychological discomfort  $P = 0.001$ ). Patients with reticular lesions obtained higher scores in HADS (Anxiety  $P = 0.001$ , Depression  $P < 0.001$ ), whereas patients with atrophic/ ulcerative lesions obtained higher scores in OHIP-14 ( $P = 0.02$ ). They concluded that psychological disorders play an important role as a trigger for OLP and are responsible for many relapses. Psychological support would be advisable in order to improve their mental health, as this would have a positive impact on their quality of life and would lead to a better progression of the disease. Patients with OLP had higher levels of anxiety, depression, and lower quality of life. The patient's psychological problems are related to their quality of life, and the psychological

state of patients with OLP needs more attention. In a study by Yang C et al<sup>14</sup> each of OHIP-14 scores and HADS scores in OLP was higher than the control group, and there was significant difference in the patients groups with the control cases ( $P < 0.05$ ). Positive correlations existed between the psychological problems and the quality of life of OLP patient ( $r_s > 0$ ,  $P < 0.05$ ). In our study at the end of 45 days Group A and Group B showed 75% and 87% decrease in size of the lesion respectively. Burning sensation of oral mucosa was decreased by 82% and 90% in group A and group B respectively ( $Z > 1.96$ ,  $P < 0.05$ ).

Małgorzata Radwan-Oczko et al<sup>15</sup> detected that the longer the duration of subjective symptoms, the poorer the quality of life and the higher the level of perceived stress (PSS). Also, the higher the PSS results, the greater the anxiety and depression on Hospital Anxiety and Depression Scale (HADS). Likewise, higher level of depression in HADS was strongly correlated with worse quality of life. ( $p \leq 0.05$ ). They detected a relationship between duration of the disease, level of perceived stress and quality of life. The longer the disease lasts, the higher it tends to catastrophize. This may influence development or increase of the anxiety and depression and may decrease patients'

quality of life. They concluded that effective treatment of clinical stage of OLP will reduce their experience of pain, subjective discomfort and anxiety. It will eliminate one of the major stressors to which patients are exposed and reduce their chance to develop depressive symptoms and significantly improve their quality of life. Chaithra Kalkur et al<sup>16</sup> stated that psychological assessment using DASS-42 reveals lichen planus patients showed higher frequency of psychiatric co morbidities like depression, anxiety and stress compared to control group. This study has provided evidence that the DASS-42 questionnaire is internally consistent and valid measures of depression, anxiety, and stress. Psychiatric evaluation can be considered for patients with oral lichen planus with routine treatment protocols are recommended. DASS-42 Questionnaire can also be used to determine the level of anxiety, stress and depression in diseases of the oral mucosa like recurrent aphthous stomatitis, burning mouth syndrome and TMD disorders. Greater severity of OLP is associated with increased levels of anxiety, higher scores of oral health impact profile, and decreased QoL. Zucoloto ML et al<sup>17</sup> stated that patients with OLP had higher scores for the OHIP-14 dimensions physiological discomfort and social limitation compared with controls. In addition, higher scores for physical pain, physical disability,

social disability, and handicap were detected among patients with greater severity.

Patients with severe OLP may benefit from additional therapeutic treatments, such as psychological and/or psychiatric management, concomitant to treatment specific to oral lesions. In our study after 15, 30 and 45 days of treatment, compared to before starting the treatment, all symptom scales of the quality of life were affected negatively. Mergoni G et al<sup>18</sup> evaluated the effects of oral healthcare motivation on clinical variables in patients with gingival oral lichen planus. Their study showed that plaque control improved both quality of life (OHIP-14) and gingival lesion clinical severity. Regression analysis showed a significant positive trend of OHIP-14, plaque index and Escudier index in the intervention group compared to controls ( $p < 0.05$ ).

## Conclusion

Oral lichen planus has a significant psychological impact on patients. Hence quality of life should become an essential tool in clinical practice to better understand patient reported outcomes. And the European Organization for Research and Treatment of Cancer Quality of Life head and neck 35 Questionnaire (EORTC QLQ-

C35) can be used successfully in oral lichen planus.

### Financial support and sponsorship

Nil.

### Conflicts of Interest

There are no conflicts of interest.

### References

1. Alam F, Hamburger J. Oral mucosal lichen planus in children. *Int J Paediatr Dent* 2001; 11: 209-14.
2. Warin RP, Crabb HS, Darling AI. Lichen planus of the mouth. *BMJ* 1958;1: 983-4.
3. Unsal B, Gultekin SE, Bal E, Tokman B. Bullous oral lichen planus: Report of two cases. *Chin Med J (Engl)* 2003; 116: 1594-5.
4. Garcovich S, Garcovich M, Capizzi R, Gasbarrini A, Zocco MA. Cutaneous manifestations of hepatitis C in the era of new antiviral agents. *World J Hepatol* 2015; 7: 2740-8.
5. Salgado DS, Jeremiah F, Cappella MV, Onofre MA, Massucato EMS, Orrico SRP. Plaque control improves the painful symptoms of oral lichen planus gingival lesions. A short-term study. *J Oral Pathol Med* 2013; 42: 728-32.
6. Crincoli V, Di Bisceglie MB, Scivetti M, et al. Oral lichen planus: update on etiopathogenesis, diagnosis and treatment. *Immunopharmacol Immunotoxicol* 2011; 33: 11-20.
7. Parashar P. Oral lichen planus. *Otolaryngol Clin North Am* 2011; 44: 89-107.
8. Lavanya N, Jayanthi P, Rao UK, Ranganathan K. Oral lichen planus: An update on pathogenesis and treatment. *J Oral Maxillofac Pathol* 2011;15:127-32.
9. Bjordal K, Ahlner-Elmqvist M, Tollesson E, Jensen AB, Razavi D, Maher EJ, et al. Development of a European Organization for Research and Treatment of Cancer (EORTC) questionnaire module to be used in quality of life assessments in head and neck cancer. EORTC Quality of Life Study Group. *Acta Oncol.* 1994;33:879-85.
10. Bjordal K, Hammerlid E, Ahlner-Elmqvist M, de Graeff A, Boysen M, Evensen JF, et al. Quality of life in head and neck cancer patients: validation of the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire H&N35. *J Clin Oncol.* 1999;17:1008-19.

11. Tadakamadla J, Kumar S, Laloo R, Gandhi Babu DB, Johnson NW. Impact of oral potentially malignant disorders on quality of life. *J Oral Pathol Med* 2018;47:60-5.
12. Parlatescu I, Tovar M, Nicolae CL, Sfeatcu R, Didilescu. Oral health-related quality of life in different clinical forms of oral lichen planus. *Clin Oral Investig* 2019; May 17.
13. Vilar-Villanueva M, Gándara-Vila P, Blanco-Aguilera E, Otero-Rey EM, Rodríguez-Lado L, García-García A, Blanco-Carrión A. Psychological disorders and quality of life in oral lichen planus patients and a control group. *Oral Dis* 2019;25:1645-51.
14. Yang C, Liu L, Shi H, Zhang Y. Psychological problems and quality of life of patients with oral mucosal diseases: a preliminary study in Chinese population. *BMC Oral Health* 2018; 27;18:226.
15. Małgorzata Radwan-Oczko, Edyta Zwyrtek, Joanna Elżbieta Owczarek, Dorota Szcześniak. Psychopathological profile and quality of life of patients with oral lichen planus. *J Appl Oral Sci* 2018; 26: e20170146.
16. Chaithra Kalkur, Atul Prahlad Sattur, Kruthika Satyabodh Guttal. Role of Depression, Anxiety and Stress in Patients with Oral Lichen Planus: A Pilot Study. *Indian J Dermatol* 2015; 60: 445-9.
17. Zucoloto ML, Shibakura MEW, Pavanin JV, Garcia FT, da Silva Santos PS, Maciel AP, de Barros Gallo C, Souza NV, Innocentini LMAR, Humberto JSM, Motta ACF. Severity of oral lichen planus and oral lichenoid lesions is associated with anxiety. *Clin Oral Investig* 2019;23:4441-8.
18. Mergoni G, Magnani V, Goldoni M, Vescovi P, Manfredi M. Effects of oral healthcare motivation in patients with gingival oral lichen planus: A randomized controlled trial. *Oral Dis* 2019;25:1335-43.

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