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Research Article

Across Tongues and Territories: Mapping Oral Lichen Planus in India's Diverse Landscape of Care

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Abstract

Background: Oral Lichen Planus is a chronic autoimmune mucocutaneous potentially malignant disorder with a significant female predominance. The higher prevalence of Oral Lichen Planus among peri and post-menopausal women suggests that declining estrogen levels may play a key role in immune dysregulation and mucosal integrity. Additionally, women with Oral Lichen Planus frequently present with hypertension and impaired glucose tolerance, especially in their late 40s and 50s, these findings align with the broader concept of Grinspan's Syndrome.

Objective: To systematically analyze clinical patterns, systemic comorbidities, therapeutic response in Oral Lichen Planus over the past decade.

Methodology: This study was conducted as a narrative literature review with elements of a systematic approach aimed at analyzing trends, advancements and regional variations in the treatment of Oral Lichen Planus (OLP) in the women over the last two decades (2007 to 2025). The primary objective was to critically evaluate the therapeutic strategies used, with a focus on North and South India and identify evidence based gaps and gender specific patterns.

Important Mention: Ethical Considerations

As this study involved secondary analysis of previously published data, no ethical approval or patient consent was required. However, only peer reviewed and ethically approved research studies were included to maintain academic integrity.

Introduction

Oral Lichen Planus is a chronic T -cell mediated mucocutaneous disorder that predominantly affects the oral cavity [1-6] and is notably more prevalent in females, particularly in the 30-60 age group. Characterized by a range of clinical presentation from asymptomatic reticular patterns to painful erosive and ulcerative lesions – Oral Lichen Planus not only impact oral function and quality of life but also carries a small yet significant risk of malignant transformation. Its pathogenesis multifactorial, involving T- cell mediated autoimmune responses, hormonal imbalances, stress and genetic predisposition – factors which disproportionately affect women [7-15].

In India a country marked by vast cultural, dietary, socioeconomic, and healthcare disparities, clinical profile and management of Oral Lichen Planus vary slightly across regions. Women in North India often presents with more symptomatic lesions, possibly due to higher tobacco use, psychological stress and delayed healthcare access. In contrast South India demonstrates relatively earlier diagnosis, better treatment adherence, and wider use of alternative therapies such as Ayurvedic or herbal interventions, possibly influenced by stronger public health outreach and cultural receptivity to integrative medicine.

While topical corticosteroids remain the mainstay of Oral Lichen Planus therapy across India, emerging modalities – such as calcineurin inhibitors, low level laser therapy, biologics and herbal extracts like curcumin and aloe vera are being increasing explored in urban and tertiary care centers and access to these treatment and adherence to long term management vary widely in different regions.

This paper presents a comprehensive comparative analysis of Oral Lichen Planus in women across different parts of India, with particular emphasis on epidemiological patterns, clinical manifestations and evolving treatment modalities, The goal is to highlight region specific challenges and propose context sensitive, gender responsive strategies for more effective and equitable management of oral lichen planus in women [16-21].

Comparative Studies of Oral Lichen Planus in North India, South India and West Bengal

Table 1, Figure 1.

Citation: Eduardo Domínguez-Adame MD PhD, Andrea Scammon Duran MD, Elena Guarnieri MD. Prone Thoracoscopic Excision of Esophageal Diverticulum: Minimally Invasive Surgery. J Dent & Oral Disord. 2025; 11(2): 1193.

Table 1: Comparative studies of oral lichen planus in North India, South India and West Bengal.

TOPIC	NORTH INDIA	SOUTH INDIA	WEST BENGAL
1.Prevelance	~0.7%	~0.15%-0.63%	~0.1-0.2%
2.Gender predeliction	• F:M=1.5:1(Amit and Divya 2022) [8] • 37.34years (Kumar and kashyap 2022)	M: F=1:1.8(Vijayan et al) [9]	Female (housewives) (Tathagata et al 2025) [2]
3.Mean age group	• 37.34 years (Kumar and Kashyap2022)[8] • 31-40(Amit K 2022)	• 40-55 years • 51±10.1years (Anuna et al) [20]	Middle aged adults (Ganesh Kumar Kushwaha et al 21-40 yrs) [3]
4.Common clinical variant	Reticular followed by erosive (Mohan et al study)[15]	Reticular followed by erosive (Anuna Laila Matthew study 2016) [20]	Reticular (Arif Mohiddin Study) [11]
5.Common sites	• Bilateral buccal • mucosa96% (Kaushik et al 2021)[12] • Skin upto 7% (Mohan et al 2017)	• Buccal and Mucosa • Wrist and Forearm 45% (PM Omal 2012) • [18]	Posterior Buccal Mucosa
6.Comorbidities	• Hypertension(15%) • Diabetes Mellitus (4%) • Hypothyroidism(2% Kaushik and Gupta 2021)[12]	Diabetes and Hypersensitivity relation (Varghese et al 2016)[16]	Allergens Hypersensitivity)
7.Etiologies	• Intake of spicy food • Occupational stress • Tobacco chewing involving ...GATS-2(2016 -2017 report) [17]	• Reverse smoking habits • Autoimmunity Stress • Smoking, chewing, alcoholism [20]	• Spicy foods • Autoimmune • Hepatitis C infection • Humoral immunities(A rif et al)[11]
8.Diagnosis	Hematological immunological Histopathological	Hematological ,Immunological Histological	Hematological ,Immunological Histopathological
9.Treatment	First line treatment: Clobetasol 0.05% (Topical)or Triamcinolone acetonide Multivitamin, Antioxidants, Folic acid	Similar first line Systemic corticosteroid (Prednisolone)10mg 4 times Triamcinolone topical (most common)	0.05%Clobetasol Proprionate Apremilast usage recorded (Shiladitya Shil et al study 2023)[5]
10.Prognosis Follow up	Patient follow up compliances are often irregular and lower specially in North urban areas in North India	Better follow up and prognosis due to greater patient awareness	Significant improvement on the oral lesions after 6 weeks follow up

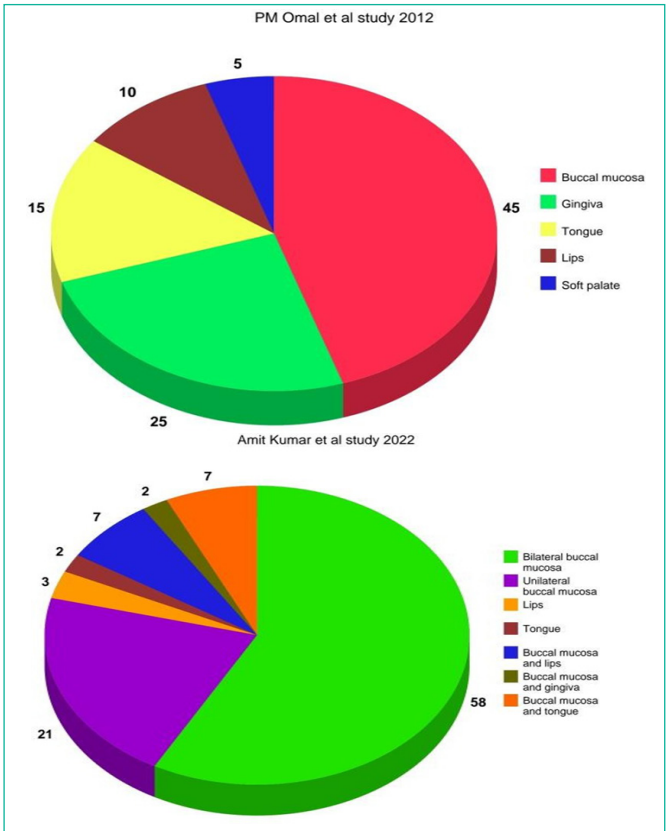

Figure 1: Graphical Representation of South India V/S North India OLP Sites.

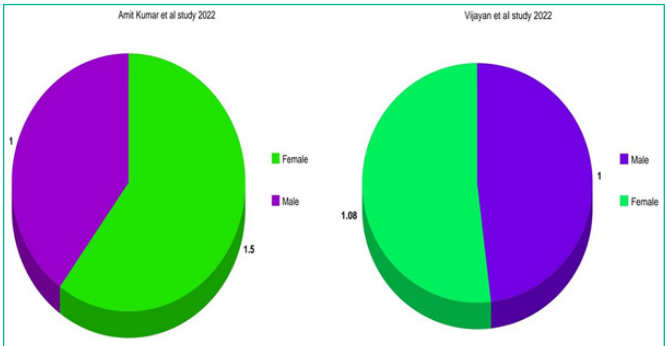

Figure 2: North India V/S South India Predilection of OLP.

Treatment Protocol

According to 2025 study on Pharmacological Treatment of Oral Lichen Planus [1].

1st line of treatment:

Table 2, Figure 2.

Mechanism of Action: (Raghavendra Kini et al study) [19]

EXUDATION OF LEUCOCYTES AND PLASMA CONSTITUENTS

⇩

DECREASE IN EDEMA AND MAINTAINENCE OF CELLULAR MEMBRANE INTEGRITY

⇩

INHIBITION OF LYSOZYME RELEASE FROM GRANULOCYTES, INHIBITION OF PHAGOCYTOSIS

⇩

STABILIZATION OF THE MEMBRANE OF THE INTRACELLULAR LYSOZYMES, WHICH CONTAIN HYDROLYTIC ENZYMES CAPABLE OF CELL DIGESTION AND EXTENSION OF INFLAMMATORY TISSUE DAMAGE

⇩

PROLIFERATION OF FIBROBLAST WITH DECREASE IN FIBROSIS

Mechanism of Action of Retinoids:

Antikeratinizing and immunomodulator effects (Table 3, Figure 3).

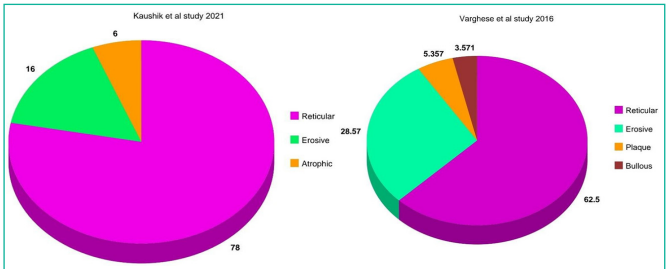

Figure 3: North India V/S South India OLP Variant.

Table 2: 1st line of treatment.

TOPICAL CORTICOSTEROIDS	INTRALESIONAL CORTICOSTEROIDS	SYSTEMIC CORTICOSTEROIDS
• 0.025% Clobetasol Proprionate • 0.1% Dexamethasone • Triamcinolone acetonide (0.025% - 0.5%) 2 to 4 • times daily • ALL ARE TYPICALLY APPLIED TWICE A DAILY FOE 1 -2 MONTHS	• Triamcinolone acetonide • Dexamethasone • Methyl Prednisolone, • found to be more effective in ulcerative lichen planus • Triamcinolone (40mg/ml) • 0.5 ml is more preferred than o.3 ml	• Used in severe • /widespread/Refractory oral lichen planus • 30 - 80 mg/day or 0.5mg/ day of prednisolone/ methylprednisolone up to 2 weeks • 5mg Betamethasone for 2 • consecutive days each week for 3 months.

Table 3: Antikeratinizing and immunomodulator effects.

RETINOIDS	CYCLOSPORINE
• Alitretinoin (30 mg/day) and Isotretinoin (0.5 – 1 mg /kg /day)	• For topical use, cyclosporine 100mg/ ml is recommended as mouthwash or adhesive – based form, used 2-3 times daily for 1 month

Table 4: 2nd Line of Treatment.

TOPICAL CALCINEURIN INHIBITORS	TOPICAL SULFASALAZINE	HYDROXY CHLOROQUINE SULPHATE	AZATHIOPRINE	METHOTRAXATE	MYCOPHENOLATE MOFETIL	BIOLOGICS
0.03% or 0.1% tacrolimus,1%pimecrolim us (twice daily for 4 to 8 weeks)	30mg/5ml solutions (3 times a day for 8 weeks)	200 – 400 mg/day for 2 months	2mg/kg/day for ranging from 3 to 7 months	15mg/week for 3 months	1 to 3 gm/day for 4 weeks	Infliximab Tildrakizumab Guselkumab can be used with uncertain efficacy

NOTE

1. Corticosteroids remain the standard of care,
2. calcinurin inhibitors like tacrolimus and less commonly cyclosporin are used in refractory cases,
3. Adjuntive therapy like Multivitamins, antioxidants, iron are used.

2nd Line of Treatment: [1]

Table 4, Figure 4.

Mechanism of Action of Calceurin Inhibitors

A Calcineurin inhibitor, suppressing the synthesis of pro – inflammatory cytokines and inhibiting the formation of active T cells.

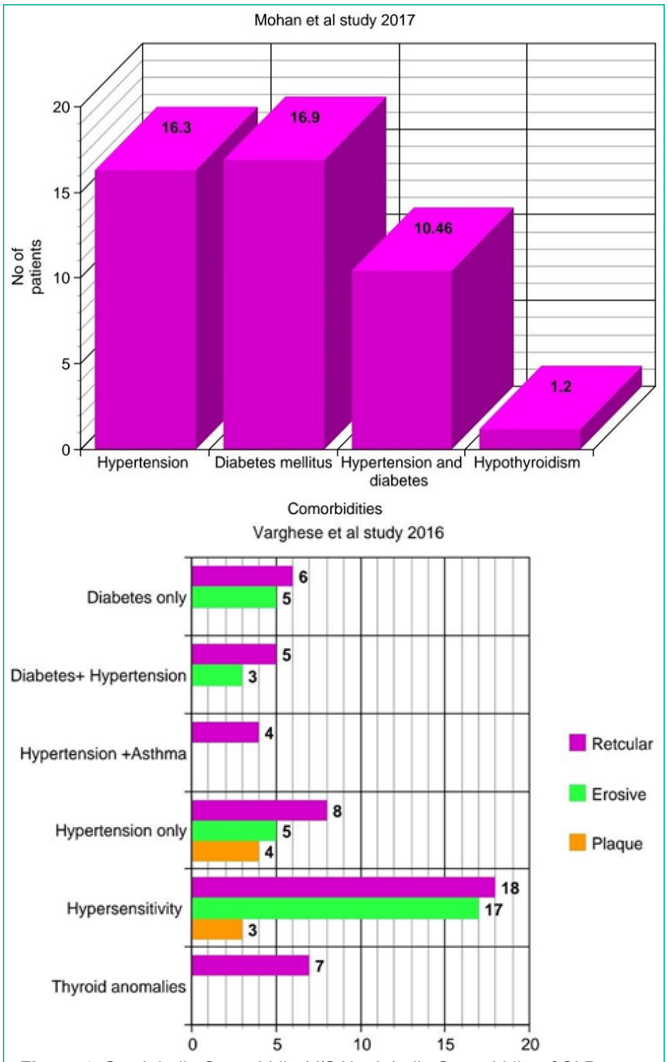

Figure 4: South India Comorbidity V/S North India Comorbidity of OLP.

Table 5: 3rd Line of Treatment.

LOW LEVEL LASER THERAPY	PHOTODYNAMIC THERAPY	NEUTRACEUTICALS
Helium Neon (633 nm), ruby (694 nm), argon (488 and 524 nm) laser twice a week for 5 weeks.	Photosensitizer (methylene blue, toluidine blue) with 630 – 660 nm wavelength of light for 2 minutes (twice a week for 1 month)	Aloe vera gel or mouthwash

3rd Line of Treatment: [1]

Table 5.

Conclusion

From North India to South India and the cultural corridors of Bengal, Oral Lichen planus whispers a story of pain that knows no boundaries. The challenge now is to bridge these gaps – not just with medicine but with awareness, access, proper treatment protocol with empathy. Following observations are drawn below

- Oral Lichen Planus in women is a multifactorial condition shaped by hormonal vascular and metabolic factors
- Grinspan syndrome may represent a broader spectrum where ever borderline systemic changes deserve clinical attention.
- Multidisciplinary care and regular follow up all critical to prevent complications including malignant transformations.

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