

# Lichen Planus



## Definition

- Lichen Planus is a common inflammatory disorder of skin characterized clinically by distinctive, violaceous, flat topped papules; and histologically by a band like lymphocytic infiltrate at the dermo-epidermal junction.

## Epidemiology :

- **Risks** for the condition include:
  - Exposure to medicines, dyes, and other chemicals (including gold, antibiotics, arsenic, iodides, chloroquine, quinacrine, quinide, phenothiazines, and diuretics)
  - Diseases such as hepatitis C
- **Race:** No racial predispositions.
- **Sex:** Lichen Planus affects **women more** compared to men **(3:2) ratio**.
- **Age:** More than **two thirds** of lichen planus patients are **aged 30-60 years**; however, lichen planus **can occur at any age**

# Etiology

- T-cell-mediated autoimmune disease
- **CD8+ T-cells** trigger the apoptosis of oral epithelial cells.
- Antigen associated with the **major histocompatibility complex (MHC) class I** on keratinocytes
- **Grinspan's syndrome**: lichen planus, diabetes mellitus and vascular hypertension

## Commonly affected areas

- Lower legs, inner aspect of thighs
- Forearms, arms
- Lower back
- Oral cavity
- Genitals
- Nails





# TYPES OF CUTANEOUS LICHEN PLANUS

## HYPERTROPHIC PLAQUES



## VESICULAR LICHEN PLANUS



## LICHEN PLANUS PEMPHIGOIDES

Mechanism involves keratinocyte antigen expression or unmasking of an antigen that may be a self-peptide or a heat shock protein



T cells (mostly CD8+, and some CD4+ cells) migrate into the epithelium



These migrated CD8+ cells are activated directly by antigen binding to major histocompatibility complex (MHC)-1 on keratinocyte or through activated CD4+ lymphocytes



The activated CD8+ T cells in turn kill the basal keratinocytes through tumor necrosis factor (TNF)- $\alpha$

(N Lavanya, P Jayanthi, Umadevi K Rao, and K Ranganathan. Oral lichen planus: An update on pathogenesis and treatment. J Oral Maxillofac Pathol. 2011 May-Aug; 15(2): 127-132.)

## Signs and Symptoms:

- The following may be noted in the **patient history**:
  - Lesions **initially developing** on **flexural surfaces** of the limbs, with a **generalized eruption** developing after a **week** or more and maximal spreading within **2-16 weeks**
  - **Pruritus of varying severity**, depending on the type of lesion and the extent of involvement
  - Oral lesions that **may be asymptomatic, burning, or even painful**
  - In cutaneous disease, lesions typically resolving within **6 months** (>50%) to 18 months (85%); **chronic disease is more likely oral lichen planus** or with large, annular, hypertrophic lesions and mucous membrane involvement



# LICHEN PLANUS – THE 6 Ps'

- **P** - **P**ruritic
- **P** – **P**lanar
- **P** – **P**olygonal
- **P** - **P**urple
- **P** - **P**laques
- **P** – **P**apules



The  
Indian  
Medical  
Student

# Diagnostic tests

## ■ Histological exam

- ☐ Requires biopsy
- ☐ Varies based on the type of lesion
- ☐ Typically: epithelial hyperplasia, orto and para keratosis, acanthosis, atrophic areas w/ loss of rete pegs, dense accumulation of T-lymphocytes in the basilar cell layer

## ■ Direct Immunofluorescent examination

- ☐ Requires biopsy
- ☐ Differentiates between other autoimmune conditions
- ☐ Detects shaggy deposition of fibrinogen along the basement membrane

## Management

- Lichen planus is a **self-limited disease** that usually **resolves within 8-12 months**.
- Mild cases can be **treated with fluorinated topical steroids**.
- More severe cases, especially those with scalp, nail, and mucous membrane involvement, **may necessitate more intensive therapy**.

## Treatments and Rationale

- Treatments may include:
  - Antihistamines
  - Medicines that calm down the immune system, such as cyclosporine (in **severe** cases)
  - **Lidocaine** mouthwashes to **numb the area** and make eating more comfortable (for mouth sores)
  - **Topical corticosteroids** (such as clobetasol) or oral corticosteroids (such as prednisone) **to reduce swelling and lower immune responses**
  - **Corticosteroids shots** into a sore
  - **Vitamin A as a cream** (topical retinoic acid) or taken mouth (acitretin)
  - **Dressings** placed over skin medicines **to protect from scratching**
  - **Ultraviolet light therapy** for some cases



# lichen planus

ASHISH SINGH  
MEDICOWESOME

## EPIDEMIOLOGY

- Age: peak at 30-60 years
- Sex: F>M (3:2)
- Prevalance: 0.1-4% (rare)

## PATHOPHYSIOLOGY

- Sawtooth lymphocytic infiltrates at dermo-epidermal junction
- Increased thickness of
  - a. stratum corneum (with parakeratosis)
  - b. stratum granulosum
  - c. stratum spinosum (with colloid bodies)
- Liquefactive degeneration of stratum basale

## ASSOCIATIONS

- Hepatitis C
- Ulcerative colitis
- Aplastic anaemia
- Vitiligo, diabetes and other autoimmune conditions

## CLINICAL FEATURES

### Skin lesion (6 Ps):

- Pruritic, Polygonal, Purple, Planar, Papule and Plaque
- Most common site: scalp + flexor aspects of wrists. Can involve lower back, genital and shins.
- Associated with scarring alopecia

### Mucosal lesion

- White lace-like/ reticulae (Wickham striae)
- Most common site: buccal mucosa

## DIAGNOSIS

- Mainly clinical
- Supported by histopathology

## TREATMENT

- Spontaneous remission in 6 months to 2 years
- 1st line: topical steroids
- 2nd line: topical cyclosporine, tacrolimus, isotretinoin
- Diffuse involvement: oral steroids