**Dermatology.** **Lecture: 1**
**Dr. Intisar Ahmed** **Stage: 5**

# Psoriasis

## Introduction :

* Psoriasis occurs in **1% to 3%** of the population.
* The disease is transmitted genetically (polygenic inheritance).
*A child with one affected parent has a **14%** chance of developing the disease, and this rises to **41%** if both parents are affected.
* The disease is lifelong and the course is unpredictable characterized by chronic, recurrent exacerbations and remissions that are emotionally and physically debilitating.
*There may be many millions of people with the potential to develop psoriasis but certain environmental factors needed to precipitate the disease (stress, drugs, infection).
* Environmental factors also may modify the course and severity of disease.
* Extent and severity of the disease vary widely from patient to another as well as itching.
*It can start at any age but is uncommon under 10 years, and appears most often between **15 and 40** years.

## Pathogenesis :

* Psoriasis is a genetic, immune -mediated skin and/or joint inflammatory disease in which intralesional inflammation stimulates basal keratinocytes to hyperproliferate.
*Precipitating factors
1 Trauma: K¨obner phenomenon.
2 Infection: β-haemolytic streptococci, Staphylococcus aureus, HIV.
3 Hormonal: psoriasis frequently improves in pregnancy only to relapse postpartum.
4 Sunlight: improves most psoriatic pt but **10%** become worse.
5 Drugs: antimalarials, β-blockers, IFN-α, lithium and systemic steroids or potent topical steroids.
6 Cigarette smoking and alcohol.
7 Emotion.

* **Comorbidities** associated with psoriasis:
1. Crohn's dis and UC,
2. Cardiovascular disease,
3. Metabolic syndrome,
4. Lymphoma, non -melanoma skin cancer,
5. Depression/suicide,
6. Psychological/sexual dysfunction,
7. Smoking,
8. Alcohol,
9. Obesity,
10 . Quality of life.

## Histology:

-Parakeratosis (nuclei retained in the horny layer).
-Irregular thickening of the epidermis over the rete ridges, but thinning over dermal papillae. Bleeding may occur when scale is scratched off (Auspitz sign).
-Epidermal polymorphonuclear leucocyte infiltrates and microabscesses (described originally by Munro).
-Dilated and tortuous capillary loops in the dermal papillae.
-T-lymphocyte infiltrate in upper dermis.

## Clinical presentations :

A. Variations in the morphology of psoriasis :
*Chronic plaque psoriasis
* Guttate psoriasis
* Pustular psoriasis
* Erythrodermic psoriasis.

B. Variations in the location of psoriasis :
* Scalp psoriasis
* Psoriasis inversus (Flexural)
* Nail psoriasis
* Psoriatic arthritis
*Oral mucosa.

**Chronic plaque psoriasis**

* Chronic, noninflammatory, well-defined plaques.
* The plaques are irregular, round to oval.
* Predilection for **extensor** surfaces such as the elbows and knees but any site can be affected.
*The lesions are pink or red.
* Silvery scale.
* Tend to be **symmetrically** distributed.
* Plaques enlarge and then tend to remain stable for months or years.
* A temporary brown, white, or red macule remains when the plaque subsides.
* Auspitz sign.

**Guttate psoriasis (acute eruptive psoriasis)**

* More than **30%** of psoriatic patients have their first episode **before age 20**.
* An episode of guttate psoriasis might be the first indication of the patient's propensity for the disease.
* **Streptococcal pharyngitis** or a **viral upper respiratory tract infection** may precede the eruption by **1 or 2 weeks**.
* Scaling papules suddenly appear on the trunk and extremities, **excluding** palms and soles.
* The scalp and face may also be involved.
* Number varies, and their size may be that of a pinpoint up to 1 cm.
* It may resolve spontaneously and it responds more readily to treatment than does chronic plaque psoriasis.

**Psoriasis inversus (psoriasis of the flexural or intertriginous areas)**

* The gluteal fold, axillae, groin, submammary folds, retroauricular fold, and the glans of the uncircumcised penis may be affected.
* The deep red, smooth, glistening plaques may extend to and stop at the junction of the skin folds, as with intertrigo or Candida infections.
*The surface is moist and contains macerated white debris.
*Cracking and fissures are common at the base of the crease.
* Infection, friction, and heat may induce flexural psoriasis.
* Infants and young children may develop flexural psoriasis of the groin that extends onto the diaper area.

**Erythrodermic psoriasis**

* Generalized erythrodermic psoriasis is a severe, unstable disease.
* It may appear as the initial manifestation of psoriasis but usually occurs in patients with previous chronic disease.
* The skin becomes universally and uniformly red with variable scaling.
* Malaise is accompanied by shivering and the skin feels hot and uncomfortable.
* **Precipitating** factors include the:

1. Administration of systemic corticosteroids
2. Excessive use of topical steroids
3. Use of tar and anthralin on acutely inflamed plaques
4. Abrupt discontinuation of systemic therapy
5. Phototherapy complications
6. Severe emotional stress
7. Infection.

***Treatment** includes:

-Bed rest,
-Initial avoidance of all UV light, wet compresses,
-liberal use of emollients,
-Increased protein and fluid intake,
-Antihistamines for pruritus,
-Avoidance of potent topical steroids, and, in severe cases,
-Hospitalization.
-Methotrexate, cyclosporine, or acitretin is used if rapid control is not obtained with topical therapy.

**Pustular psoriasis**

* Unusual manifestation of psoriasis.
* Triggering factors: pregnancy, rapid tapering of corticosteroids , hypocalcemia, infections.
* Generalized pustular psoriasis during pregnancy is also referred to as **impetigo herpetiformis**.
* 3 types:

**von Zumbusch pattern**:

- Generalized eruption starting abruptly with erythema and pustulation.
- The skin is painful
- The patient has a fever and feels ill.
- After several days, the pustules usually resolve and extensive scaling is observed.

**Pustulosis of the palms and soles:**

- Sterile" pustules of the palmoplantar surfaces admixed with yellow–brown macules.
- Chronic course.

**Acrodermatitis continua of Hallopeau:**

- Rare manifestation.
- Pustules on the distal portions of the fingers, and sometimes the toes.
- Pustulation is followed by scaling and crust formation.
- Accompanied by annulus migrans of the tongue.

*Rx: Acitretin, methotrexate, PUVA, narrow -band UVB, and intermittent courses of topical steroids under plastic occlusions.

**Psoriasis of the nails**

* Onycholysis: separation of the nail plate from the nail bed.
* Subungual hyperkeratosis: nail bed scale is retained, forcing the distal nail to separate from the nail bed.
* Pitting: Nail plate cells shedding leaving a variable number of tiny, punched-out depressions on the nail plate surface.
* Oil spot sign: Psoriasis of the nail bed may cause localized separation of the nail plate. Cellular debris and serum accumulate in this space.
* Nail dystrophy: Extensive involvement of the nail matrix results in a nail losing its structural integrity, resulting in fragmentation and crumbling.

**Psoriatic arthritis**

* Psoriatic arthritis (PsA) is a chronic inflammatory arthropathy of the **peripheral joints, spine, and entheses.**
* It may precede **(15%)**, accompany, or, more often, follow the skin manifestations.
* Psoriatic arthritis is **higher** among patients with **more severe** cutaneous disease.
* Nail involvement occurs in more than **80%** of patients with psoriatic arthritis, compared with **30%** of patients with uncomplicated psoriasis.
* Despite active treatment, psoriatic arthritis may be a **progressively deforming arthritis**.

Moll and Wright 1973 classification of psoriatic arthritis

1. **Asymmetric oligoarthritis** : small joints of fingers and toes, **most common** presentation.
2. **Symmetric polyarticular arthritis (RA -like)**: small joints of hands and feet, wrists, ankles, knees and elbows.
3. **Distal interphalangeal joint predominant**: Mild, chronic, not disabling, and associated with nail disease. Involves hands and feet. This is the **most classic** but uncommon presentation.

4. **Destructive polyarthritis (arthiritis mutilans)**: small joints of hands and feet (gross deformity and subluxation).
5. **Ankylosing spodylitis and sacroilitis.**

## Differential diagnosis:

1 Discoid eczema.
2 Seborrhoeic eczema.
3 Pityriasis rosea.
4 Secondary syphilis.
5 Cutaneous T-cell lymphoma.
6 Tinea unguium.

## Treatment of psoriasis

*Education
*Topical treatment
*Phototherapy
*Systemic treatment

### Topical therapy :

• All topicals require **length** treatment time to give relief that is often temporary.
• **Compliance** is a problem, patients become discouraged with moderately effective and expensive topical treatment that lasts weeks or months.
• Limited disease **(<20%** body surface area) can be managed with topical therapy only .

### Topical steroids

*The regular use of topical corticosteroids is less controversial under the following circumstances.
1 In 'limited choice' areas such as the face, ears, genitals and flexures_Mild or moderately potent steroid can be used for 2–4 weeks.
2 For allergic or irritant reactions to other topicals_moderately potent preparations.
3 For unresponsive psoriasis on the scalp, palms and soles_moderately potent, potent and very potent.
4 For patients with minor localized psoriasis_moderately potent or potent preparations.
* Rapid response.
* Convenient, and not messy.
* Best results occur with pulse dosing (2 weeks of medication and 1 week of lubrication only).
*Plastic occlusion is very effective but not used in intertriginous areas and not with

superpotent steroids.
*__S.E__.: dermal atrophy, tachyphylaxis, early relapses, striae, dyspigmentation, telangectasia, adrenal suppression caused by systemic absorption.

## Calcineurin inhibitors (topical immunomodulators)

*Tacrolimus and pimecrolimus are useful where **chronic** treatment of psoriasis on the face, genitals or intertriginous areas is needed.

## Intralesional steroid

Patients with
*a few
*small
*chronic psoriatic plaques of the scalp or body can be effectively treated with a **single or few** intralesional injection of triamcinolone acetonide.
• Remissions are long.
• The face and intertriginous areas are **avoided** here.

## Tazarotene

*Is a topically active retinoid.
*Reducing keratinocyte proliferation, normalizing the disturbed differentiation and lessening the infiltrate of dermal inflammatory cells.
*Recommended for chronic stable plaque psoriasis on trunk and limbs covering up to 20% of the body.
*Applied once a day, in the evening, and can be used for courses of up to 12 weeks.
*S.E: irritation.
*C.I: pregnancy or during lactation.
*Females of child bearing age should use adequate contraception during therapy.

## Calcipotriene (Dovonex cream) 0.005%

* Is a vitamin D 3 analogue.
* Inhibits epidermal cell proliferation and enhances cell differentiation.
* Well tolerated.
* Long remissions possible.
* Burning, skin irritation, expensive .
* Valuable for long term scalp treatment programs (Dovonex scalp solution).
* Not more than 100g per week is used
* Newer combination product (Dovobet) is more effective (calcipotriene hydrate plus betamethasone dipropionate).
• Hypercalcemia can occur

## Dithranol (anthralin)
## Coal tar preparations
## Salicylic acid

## Ultraviolet light B

* Wave length = (290 -320nm)
* Both broadband UVB and narrowband UVB can be used.
* Treatment with narrow band UVB (311 nm) is superior to treatment with broadband UVB.
* The most effective is to use UVB in combination with topical agents; tar, or tazarotene.
* Also, combination with systemic agents can be very effective as methotrexate or acitretin.
* UVB is the treatment of choice in **guttate psoriasis.**
*Treatments is twice to three times weekly for 8 weeks or until the skin clears.
* Save for pregnant women and children.

## Photo chemotherapy

* Also called PUVA.
*An oral dose of psoralens (photosensitizers) is taken 1-2 hr before exposure to long-wave ultraviolet radiation (UVA: 320–400 nm).
*Treatment is given two or three times a week with increasing doses of UVA, depending on erythema production and the therapeutic response.
*Protective goggles are worn during radiation and UVA opaque plastic glasses must be used after taking the tablets and for 24 hours after each treatment.
* PUVA is indicated for the **symptomatic control of severe, recalcitrant , and disabling plaque psoriasis that is not responsive to other forms of therapy.**
* Pustular psoriasis of the palms and soles responds best to PUVA -acitretin.
* Because of the concerns about long -term toxicity, PUVA is most appropriate for severe psoriasis in patients **older than 50 years of age**.

PUVA Side effects

* **Short -term side effects:**
- Painful erythema,
- Dark tanning,
- Pruritus,
- Nausea, and
- Nevere sunburn.

* **Long term side effects:**
- Skin aging,
- Skin tumors as actinic keratoses, squamous cell carcinoma (SCC), malignant melanoma,
- Lentigines, Small black macules,
- Cataracts.

## Systemic treatment of psoriasis

Indications
* Moderate -to -severe psoriasis (**20% or more** involvement of body surface area).
* Patient is **unresponsive** to topical therapy.

## Retinoids

*Acitretin 10–25 mg/day
* Pustular psoriasis mainly.
* S.E: dry lips, mouth, vagina and eyes, peeling of the skin, pruritus and unpleasant paronychia, hair thinning or loss, depression, teratogenicity.
* Follow up Ix:
-Liver function test and serum lipids.
-Yearly X-rays to detect disseminated interstitial skeletal hyperostosis (DISH) syndrome.
*Acitretin should not normally be prescribed to women of childbearing age, If used effective oral contraceptive measures must be taken and should continued for **3 years** after treatment has ceased.
* Blood donation should be avoided for a similar period.

## Methotrexate

*Initial trial dose 2.5 -5 mg given orally once a week and increased gradually to a maintenance dose of 7.5 - 20 mg/week.
*IM injection also available.
*S.E: nausea, malaise, marrow suppression, teratogenic, hepatic fibrosis.
*Follow up Ix:
-CBC,
-LFT,
-RFT,
-liver biopsy.
*Folic acid, 5mg/day, taken on days when the patient does not have methotrexate.

*Women must use highly effective means of contraception during treatment, after discontinuing MTX, wait at least **one ovulatory cycle** before attempting to become pregnant.
*MEN must use highly effective means of contraception, after discontinuing MTX, **wait 3 months** before attempting to have partner become pregnant.

## Cyclosporin

*Is effective in severe psoriasis.
*The initial daily dose is 3–4 mg/kg/day and not 5 mg/kg/day.
*S.E: hypertension, hirsutism, gingival hyperplasia, kidney damage and persistent viral warts, skin cancer.
*Follow up Ix:
-Blood pressure,
-Renal functions test,
-S. electrolyte.
*Treatment should not continue for longer than 1 year without careful assessment and close monitoring.

## Biologic

*Drugs (eg., adalimumab and etanercept ) are safe and effective and are rapidly becoming the preferred systemic therapy for psoriasis.
*Very expensive.

### Determining the end of treatment

• Induration disappeared.
• Residual erythema, hypopigmentation , or brown hyperpigmentation is common when the plaque clears.
. Patients frequently mistake the residual color for disease and continue treatment.
. If the plaque cannot be felt by drawing the finger over the skin surface, treatment may be stopped.

## Treatment options in psoriasis

| Type of psoriasis | Treatment of choice | Alternative treatments |
|---|---|---|
| Stable plaque | Vitamin D analogue (long term)<br>Local corticosteroid (short term)<br>Corticosteroid–calcipotriol combination (short term)<br>Narrowband UVB phototherapy | Tazarotene<br>Dithranol<br>Coal tar |
| Extensive stable plaque (>30% surface area) recalcitrant to local therapy | Narrowband UVB<br>PUVA<br>PUVA + acitretin | Methotrexate<br>Ciclosporin<br>Acitretin<br>Fumarates<br>Biological agents |
| Widespread small plaque | UVB | Vitamin D analogue<br>Coal tar<br>Systemic therapies |
| Guttate | Systemic antibiotic<br>Emollients while erupting; then UVB | Weak tar preparation<br>Mild local steroids |
| Facial | Mild to moderately potent local corticosteroid | Tacrolimus<br>Calcitriol |
| Flexural | Mild to moderately potent local steroid tacrolimus<br>Vitamin D analogue (caution: may irritate. Calcitriol less irritant than calcipotriol) | Coal tar |
| Pustular psoriasis of hands and feet | Moderately potent or potent local steroid<br>Local retinoid | Acitretin<br>Topical PUVA |
| Acute erythrodermic, unstable or generalized pustular | Inpatient treatment with ichthammol paste<br>Local steroid may be used initially with or without wet compresses | Gentle phototherapy (UVB), acitretin<br>Methotrexate, ciclosporin<br>Biological agents |

# Lichen Planus

## Introduction:

* Lichen planus (LP) is a unique inflammatory **cutaneous** and **mucous membrane** reaction pattern of **unknown** etiology (mediated immunologically).
* The disease may occur at any age, it is rare in children younger than 5 years.
* The mean age of onset is **40** years in males and **46** years in females.
* The main eruption clears within **1** year in about **70%** of patients, but **50%** of eruptions recur.
* Approximately **10%** of patients have a positive family history.
* Cutaneous and oral LP may be associated with **hepatitis C virus** (HCV).

***Various patterns** of lichen planus:
1. Actinic: Sun -exposed areas
2. Annular: Trunk, external genitalia
3. Atrophic: Any area
4. Erosioulcerative: Soles of feet, mouth
5. Follicular (lichen planopilaris): Scalp
6. Guttate (numerous) small papules: Trunk
7. Hypertrophic: Lower limbs (especially ankles)
8. Linear (Zosteriform): leg, scratched area
9. Nail disease: Fingernails
10. Papular (localized): Flexor surface (wrists and forearms)
11. Vesiculobullous: Lower limbs, mouth.

## Clinical presentations :

* The **five Ps** rule of lichen planus : pruritic, planar (flat -topped), polyangular, purple papules.
* The primary lesion is a **<1cm flat -topped papule** with an irregular angulated border (polygonal papules).
* Close inspection of the surface shows a lacy, reticular pattern of crisscrossed, whitish lines (**Wickham's striae**).
* Papules may aggregate and Koebnerize.
* Clear with post inflammatory hyperpigmentation.
* Main site of involvement is **flexor** surfaces of the wrists and forearms, legs immediately above the ankles and the lumbar region.
*White asymptomatic lacy lines, dots, and small white plaques, are also found in the mouth, particularly inside the cheeks, in about **50%** of patients.
*Oral lesions may be the sole manifestation of the disease.
*The genital skin may be similarly affected.

*The nails involved in about **10%** of patients (fine longitudinal grooves, destruction of entire nail fold and bed).
*Scalp lesions can cause a patchy scarring alopecia.
* Itching is variable; **20%** of patients with LP do not itch.
* The course is **unpredictable**.
* Some patients experience spontaneous remission in a few months, but the most common localized papular form tends to be chronic and endures for an average of approximately 4 years.

**Lichenoid eruptions:** have a similar appearance and occur from
* drugs (e.g., gold, chloroquine, methyldopa, penicillamine ),
* chemical exposure (film processing),
* bacterial infections (secondary syphilis),
* and post –bone marrow transplants (graft -versus -host reaction).

## Complications
*Nail and hair loss can be permanent.
*The ulcerative form in the mouth may lead to squamous cell carcinoma.

## Differential diagnosis
-Psoriasis,
-Pityriasis rosea,
-Parapsoriasis,
-Mycosis fungoides (cutaneous T-cell lymphoma),
-Discoid lupus erythematosus,
-Tinea corporis,
-Nummular eczema.

## Histology
-Hyperkeratosis,
-Prominent granular layer,
-Basal cell degeneration,
-Sawtooth dermoepidermal junction,
-Colloid bodies,
-Band-like upper dermal lymphocytic infiltrate.

# Treatment:

## Therapy for cutaneous lichen planus

1. Topical steroids
2. Intralesional steroids
3. Systemic steroids
4. Acitretin
5. Azathioprine
6. Cyclosporine
7. Antihistamines
8. Light therapy
9. PUVA (psoralen + UVA light) and broadband and narrow -band UVB therapy.
10 . Tacrolimus ointment: Ulcerative lichen planus of the sole may respond to topical tacrolimus 0.1% ointment.

## Therapy for mucous membrane lichen planus

The course of oral and vaginal lichen planus can extend for years.
Consider a biopsy to establish the diagnosis.
Most patients are asymptomatic (non -erosive type) and do not need treatment.
1.Tacrolimus ointment and pimecrolimus cream.
2.Corticosteroids (topical, systemic and intralesional)
3.Dapsone
4.Hydroxychloroquine
5. Azathioprine
6.Mycophenolate mofetil