Dermatology

Psoriasis

Introduction

- Psoriasis is a chronic, immune-mediated, inflammatory skin disorder characterized by well-demarcated, erythematous plaques with silvery-white scales.
- It is a relapsing-remitting disease with significant systemic and psychosocial impact, affecting both skin and joints (in psoriatic arthritis).
- It is non-infectious and results from dysregulated immune response, leading to keratinocyte hyperproliferation and inflammatory cell infiltration in the dermis and epidermis.

Epidemiology

- **Global prevalence**: ~2–3% of the population
- **India**: Around 0.4–2.8%
- **Age of onset**: Bimodal
    - Type I (early-onset): <40 years (more severe, familial)
    - Type II (late-onset): >40 years
- **Sex**: Equal prevalence in males and females
- **Genetic predisposition**: Family history seen in up to 30% cases

Etiopathogenesis

Genetic Factors

- HLA-Cw6: Strong association (especially in early-onset)
- PSORS1 to PSORS9: Identified loci associated with disease susceptibility

Immunological Factors

- T-cell-mediated autoimmune disease
- Central role of Th1 and Th17 cells
- Key cytokines: **TNF-α, IL-23, IL-17, IL-22, IFN-γ**
- Immune activation triggers keratinocyte proliferation and inflammation

Environmental Triggers

- **Infections**: Streptococcal throat infections (guttate psoriasis)
- **Drugs**: Lithium, beta-blockers, antimalarials, NSAIDs
- **Stress**: Psychological stress can exacerbate flares
- **Skin trauma**: Koebner phenomenon (lesion at site of trauma)

- **Obesity**, smoking, and alcohol consumption worsen disease

Clinical Features / Symptoms

Common Types of Psoriasis

Type	Features
Plaque Psoriasis (Psoriasis vulgaris)	Most common (~80%). Symmetrical plaques with scaling on extensor surfaces
Guttate Psoriasis	Small drop-like lesions, often after streptococcal pharyngitis
Inverse Psoriasis	Affects skin folds (axilla, groin), minimal scaling
Pustular Psoriasis	Sterile pustules, can be localized (palms/soles) or generalized (life-threatening)
Erythrodermic Psoriasis	Generalized redness and scaling involving >90% body surface, systemic symptoms

Nails and Joints

- Nail pitting, onycholysis, oil-drop sign
- Psoriatic arthritis in 10–30% of patients

Systemic Symptoms

- Fatigue, depression, increased cardiovascular risk, metabolic syndrome

Diagnosis & Investigations

Clinical Diagnosis

- Primarily clinical; based on morphology and distribution of lesions

Supporting Investigations

- Skin biopsy (if uncertain): shows acanthosis, parakeratosis, Munro microabscesses
- PASI Score (Psoriasis Area and Severity Index): Quantifies severity
- DLQI (Dermatology Life Quality Index): Assesses quality of life
- **Blood tests**: CBC, LFT, RFT, lipid profile, uric acid
- HIV, Hepatitis B/C screening before immunosuppressants
- X-ray/MRI for joint involvement (in Psoriatic Arthritis)

Treatment Goals / Therapeutic Objectives

- Achieve complete or near-complete skin clearance
- Reduce relapses and flares
- Improve patient quality of life (QoL)

- Prevent or manage psoriatic arthritis
- Minimize adverse drug reactions
- Address psychosocial impact
- Long-term disease control and remission

Non-Pharmacological Therapy

- **Patient education**: Disease is chronic, non-infectious, and manageable
- **Moisturization**: Daily emollients reduce dryness and scaling
- **Avoid triggers**: Smoking, alcohol, stress, trauma
- **Sunlight**: Natural phototherapy beneficial (UVB)
- **Diet**: Weight reduction if obese; anti-inflammatory diet

Pharmacological Therapy

A. First-Line Drugs (based on severity)

Mild-to-Moderate Psoriasis

1. **Topical Corticosteroids (Clobetasol, Betamethasone)**
   - **Dose:** Once/twice daily
   - **Duration:** Short-term (2–4 weeks), then taper
   - **Mechanism:** Anti-inflammatory, antiproliferative
2. **Topical Vitamin D3 Analogues (Calcipotriol)**
   - Often combined with corticosteroids
   - Slower onset but better for long-term maintenance
3. **Coal tar, Salicylic acid, Tazarotene: Adjuncts**

Moderate-to-Severe Psoriasis

4. **Phototherapy (NB-UVB or PUVA)**
   - **Frequency:** 2–3 sessions/week
   - **Duration:** Weeks to months
   - Requires eye/genital protection
5. **Systemic Therapy:**
   - **Methotrexate**: 7.5–25 mg weekly, with folic acid
   - **Cyclosporine**: 2.5–5 mg/kg/day (short-term)
   - **Acitretin**: 25–50 mg/day (not in women of childbearing age)

Biological Agents (for severe/refractory cases)

Class	Drug	Mechanism
Anti-TNFα	Etanercept, Adalimumab, Infliximab	Inhibit TNF-α
Anti-IL-12/23	Ustekinumab	Inhibit IL-12 and IL-23
Anti-IL-17	Secukinumab, Ixekizumab	Block IL-17A
Anti-IL-23	Guselkumab	Inhibit IL-23

B. Alternative / Adjunct Therapies

- **Apremilast** (PDE4 inhibitor): 10–30 mg BID (oral)
- **JAK inhibitors** (Tofacitinib): Used off-label
- **Hydroxyurea**, **Mycophenolate mofetil**: Rare, in special cases

Individualized Patient-Specific Therapeutic Plan

Factor	Considerations
Age	Children: Prefer topical; avoid systemic unless severe
Pregnancy	Avoid methotrexate, acitretin, biologics unless benefits outweigh risks
Renal/Hepatic Impairment	Avoid methotrexate (hepatotoxic), cyclosporine (nephrotoxic)
Comorbidities	Cardiovascular disease, depression, arthritis guide therapy
Allergies	Check prior to biologics or systemic drugs
Psoriatic Arthritis	Prefer biologics or methotrexate over topical agents

Controversies / Special Considerations

- Biologic therapies cost vs benefit in Indian settings
- Long-term immunosuppression risks (TB reactivation, malignancy)
- **COVID-19**: Immunosuppressive therapy safety debated
- **Biosimilars** vs original biologics: Regulatory and clinical uncertainty
- Newer agents like Deucravacitinib (TYK2 inhibitor) under study

Monitoring Therapy

Parameter	Frequency
PASI / BSA / DLQI	Monthly initially, then every 3–6 months

CBC, LFT, RFT	Every 1–3 months on systemic therapy
Lipid profile, uric acid	Every 6–12 months
Screening for TB, HIV, Hepatitis B/C	Before starting biologics
Skin cancer screening	Long-term phototherapy/ immunosuppression

Adverse Effects & Management

Drug	Common Adverse Effects	Management
Methotrexate	Hepatotoxicity, bone marrow suppression	Monitor LFT, CBC; use folic acid
Cyclosporine	Nephrotoxicity, hypertension	Monitor BP, RFT
Acitretin	Teratogenicity, hyperlipidemia	Avoid in childbearing women
Biologics	Injection reactions, infections	Screen for TB, monitor closely
Topical steroids	Skin atrophy, tachyphylaxis	Limit duration, use intermittently

Follow-up and Patient Counseling

Follow-Up

- Every 4–8 weeks initially, then quarterly for stable patients
- Evaluate:
  - Skin lesion control
  - Drug side effects
  - Adherence
  - Psychosocial well-being

Patient Counseling

- Chronic disease: Lifelong management required
- Importance of adherence to therapy
- Trigger avoidance (alcohol, stress, trauma)
- Skin care (moisturizing, sun exposure)
- Safe use of systemic drugs (monitoring and contraception)

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