REPUBLIC OF IRAQ

Ministry of Higher Education and Scientific Research
University of Babylon Collage of pharmacy

Graduation Research

Pathogenesis and advanced treatment of psoriasis

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- قال تعالى:

- قُلْ هَلْ يَسْتَوِي الَّذِينَ يَعْلَمُونَ وَالَّذِينَ لاَ يَعْلَمُونَ إِنَّمَا يَتَذَكَّرُ أُوْلُو الألبابِ

اهداء

هذا البحث اهداء الى الوالدين الكريمين حفظهما الله والى كل افراد اسرتنا

الى كل الأصدقاء ومن كانوا برفقتنا ومصاحبتنا اثناء دراستنا في الجامعة

والى كل من لم يدخر جهدا في مساعدتنا

والى كل من ساهم في تلقيننا ولو بحرف في حياتنا الدراسية

كما نهدي هذا البحث الى شهداء ثورة تشرين رحمهم الله

Introduction

- **Psoriasis is a chronic inflammatory skin disease characterized by sharply demarcated erythematous plaques with whitish scale.**
- **The prevalence of psoriasis varies with the country, and psoriasis can appear at any age, suggesting that ethnicity, genetic background, and environmental factors affect the onset of psoriasis.**
- **Genetic factors play a significant role in the pathogenesis of psoriasis.**

Introduction

- **Psoriasis susceptibility 1 (PSORS1), which lies within an approximately 220 kb segment of the major histocompatibility complex on chromosome 6p21, is a major susceptibility locus for psoriasis**

- **HLA-Cw6 is the susceptibility allele within PSORS1; it is associated with early onset and severe and unstable disease.**

Aim

This article reviews current concepts in pediatric psoriasis including epidemiology, clinical features, diagnosis, the role of topical and systemic agents and the association with other .morbidities in childhood

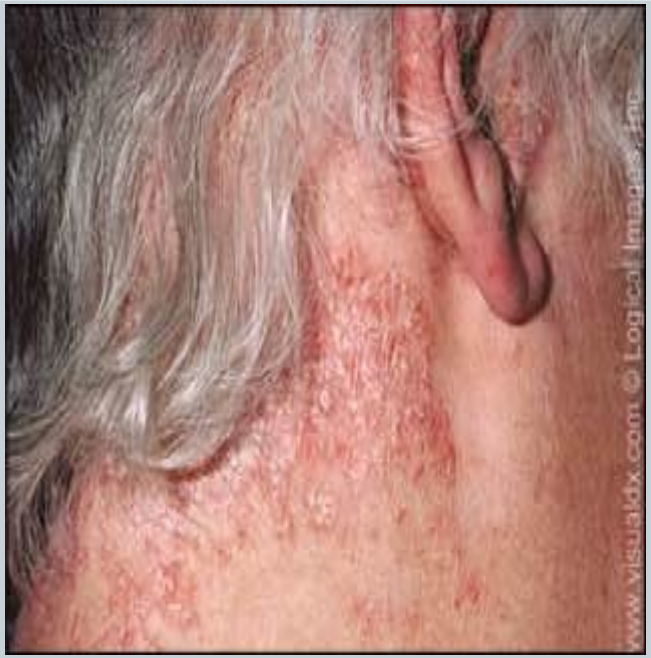
Pathophysiology

- **The hallmark of psoriasis is sustained inflammation that leads to uncontrolled keratinocyte proliferation and dysfunctional differentiation.**
- **Neovascularization is also a prominent feature.**
- **Disturbances in the innate and adaptive cutaneous immune responses are responsible for the development and sustainment of psoriatic inflammation.**
- **It is well known that dendritic cells play a major role in the initial stages of disease. Dendritic cells are professional antigen-presenting cells. However, their activation in psoriasis is not entirely clear. One of the proposed mechanisms involves the recognition of antimicrobial peptides (AMPs), which are secreted by keratinocytes in response to injury and are characteristically overexpressed in psoriatic skin. Among the most studied psoriasis-associated AMPs are LL37, β-defensins, and S100 proteins.**
- **The pathophysiology of psoriasis is expression of pro-inflammatory cytokines: IL-1, IFN-γ, and TNFα.**
- **Liang, Y.; Sarkar, M.K.; Tsoi, L.C.; Gudjonsson, J.E. Psoriasis: A mixed autoimmune and autoinflammatory disease. Curr. Opin. Immunol. 2017, 49, 1–8.**

DIAGNOSIS

DERMATOLOGIC MANIFESTATIONS

- **The diagnosis is usually clinical, based on the presence of typical erythematous scaly patches, papules, and plaques that are often pruritic and sometimes painful.**
- **Biopsy is rarely needed to confirm the diagnosis.**
- **Approximately 90 percent of affected patients have plaque psoriasis, characterized by well-defined round or oval plaques that differ in size and often coalesce6 (Figure 1).**
- **Plaque psoriasis lesions occur on the extensor surfaces of the arms, legs, scalp, buttocks, and trunk.**

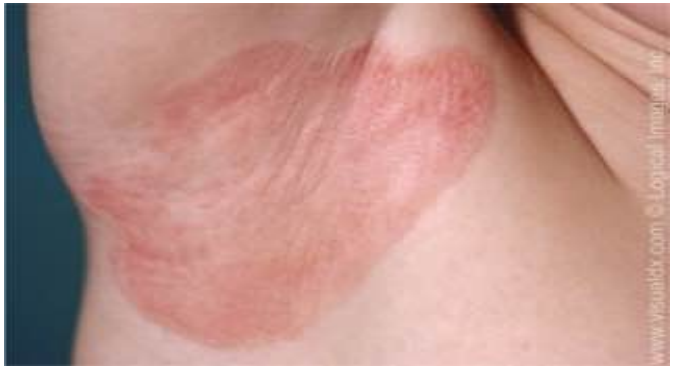


.Figure 1

.Scaling plaque in psoriasis affecting the neck

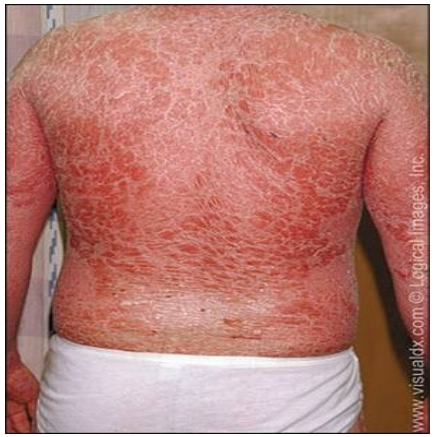
DIAGNOSIS

- **Inverse psoriasis is less scaly than the plaque form and occurs in skin folds such as flexor surfaces and perineal, inframammary, axillary, inguinal, and intergluteal areas (Figure 2).**
- **Heat, trauma, and infection may contribute to its development.**



.Figure 2
Erythematous plaque in an inverse pattern in the .axilla

- **Erythrodermic psoriasis is characterized by widespread generalized erythema and is often associated with systemic symptoms (Figure 3).**



.Figure 3
Erythrodermic psoriasis with widespread, .confluent scaly plaques

DIAGNOSIS

- **The localized form of pustular psoriasis consists of pustules on the palms and soles, without plaque formation (Figure 4).**
- **A severe, acute form (the von Zumbusch variant) can cause life-threatening complications.**

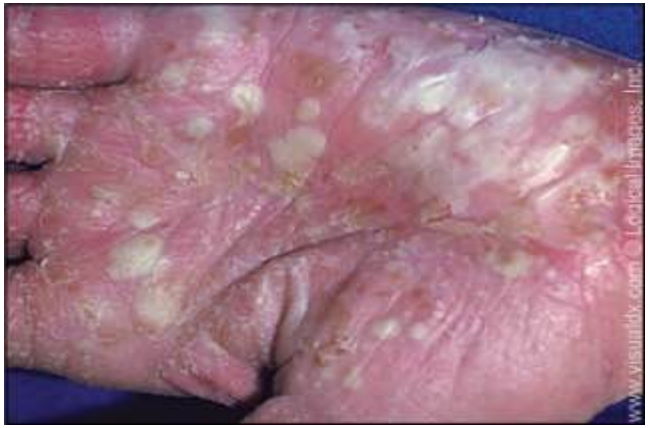


Figure 4. Localized pustular psoriasis on the hand.

- **Guttate psoriasis is more common in patients younger than 30 years, and lesions are usually located on the trunk.**
- **It accounts for only 2 percent of psoriasis cases.**
- **4 Classical findings include 1- to 10-mm pink papules with fine scaling (Figure 5).**
- **Guttate psoriasis may present several weeks after group A beta-hemolytic streptococcal upper respiratory infection.**

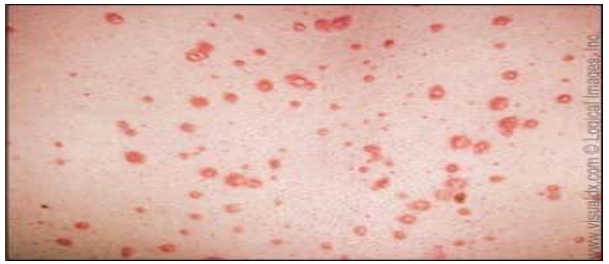


Figure 5.Scattered, erythematous papules in a patient with guttate psoriasis.

DIAGNOSIS

NONDERMATOLOGIC MANIFESTATIONS

- **Nail disease (psoriatic onychodystrophy) occurs in 80 to 90 percent of patients with psoriasis over the lifetime.**
- **8 Fingernails are more likely to be affected than toenails (50 versus 35 percent).4 Abnormal nail plate growth causes pitting, subungual hyperkeratosis, Psoriatic onychodystrophy is often resistant to treatment(Figure 6).**

.Figure 6
Classic nail pitting in a patient with psoriasis. Copyright © Logical Images, Inc

Risk Factors and Etiology

a-Many stressful physiologic and psychological events and environmental factors

.b-Direct skin trauma can trigger psoriasis (Koebner phenomenon)

c-Streptococcal throat infection

d-Human immunodeficiency virus infection

e-As the infection progresses, psoriasis often worsens.

f-Smoking

g-Obesity and alcohol use and abuse

Comorbidities in Psoriasis

- Psoriasis typically affects the skin, but may also affect the joints, and has been associated with a number of diseases. Inflammation is not limited to the psoriatic skin, and has been shown to affect different organ systems. Thus, it has been postulated that psoriasis is a systemic entity rather than a solely dermatological disease.
- When compared to control subjects, psoriasis patients exhibit increased hyperlipidemia, hypertension, coronary artery disease, type 2 diabetes, and increased body mass index.

Treatment

The topical therapy

Topical Corticosteroids-1

Vitamin D Analogs Alone and in-2
Combination with Topical Corticosteroids

Calcineurin Inhibitors-3

Dithranol-4

Phototherapy-5

Systematic treatment

Methotrexate-1

Cyclosporine A (CyA)-2

Apremilast-3

Retinoids-4

Treatment

Available Biologic Therapy

1. **TNFα Inhibitors**
2. **IL23 Inhibitors**
3. **IL17 Inhibitors**
4. **IL36 Receptor Antagonist.**
5. **Janus Kinase (JAK) Inhibitors.**
6. **Sphingosine-1-Phosphate (S1P) Agonist.**
7. **Rho-Associated Kinase (ROCK2) Inhibitor.**

Conclusion

In summary, psoriasis is a common inflammatory skin condition that is predominantly genetically determined and is associated with significant medical and psychosocial comorbidities. Advances in the understanding of its pathophysiology have led to an increasing number of therapeutic options that could dramatically improve the lives of .individuals with psoriasis

كلمة شكر

نتقدم بجزيل الشكر
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والتقدير العميق الى
الاستاذة المشرفة
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