International Journal of Medical Science and Clinical Research Studies

ISSN(print): 2767-8326, ISSN(online): 2767-8342

Volume 04 Issue 04 April 2024

Page No: 748-752

DOI: https://doi.org/10.47191/ijmscrs/v4-i04-25, Impact Factor: 7.94

Psoriasis. Definition and Classification of A Complex Entity

Daniela Guerrero Carrillo
ISSSTE Dr Santiago Ramón y Cajal

ABSTRACT

Psoriasis, a chronic inflammatory skin condition influenced by hereditary factors and immune system response, exhibits diverse clinical manifestations. While its global incidence is around 2%, prevalence varies across geographical regions and ethnicities. The most common form, psoriasis vulgaris, presents as red, itchy patches with silver-colored scales, predominantly affecting the trunk, limbs, and scalp. Other clinical subtypes include inverse psoriasis, guttate psoriasis, pustular psoriasis, and erythrodermic psoriasis, each with distinct features and impacts. Beyond skin manifestations, psoriasis is associated with various co-occurring medical conditions, including hyperlipidemia, hypertension, coronary artery disease, type 2 diabetes, and obesity. Psoriasis patients have an increased risk of cardiovascular disease, with severity correlating with the incidence of diabetes and cardiovascular events. Additionally, psoriatic arthritis affects around 40% of patients and is often accompanied by nail involvement. Recent studies utilizing imaging techniques like 18F-fluorodeoxyglucose positron emission tomography-computed tomography (18F-FDG PET/CT) and nuclear magnetic resonance spectroscopy have shed light on systemic inflammation and cardiovascular risk in psoriasis patients. Treatments targeting IL-23 and IL-17 have shown promising results, though long-term efficacy and drug survival remain areas of concern. Psoriasis profoundly impacts patients' quality of life, with psychological distress comparable to cancer and depression. However, treatment can significantly alleviate symptoms and improve overall well-being. Ongoing research aims to expand treatment options, particularly targeting novel molecular pathways. In conclusion, while significant progress has been made in understanding and treating psoriasis, challenges remain in optimizing therapy selection and long-term management. Further research is warranted to elucidate the complex genetic and immunological underpinnings of the disease and to enhance treatment outcomes for affected individuals.

KEYWORDS: psoriasis, classification, skin diseases

ARTICLE DETAILS

Published On:
22 April 2024

Available on:
https://ijmscr.org/

INTRODUCTION

Psoriasis is a long-lasting skin condition characterized by inflammation, which is influenced by hereditary factors and involves an immune system response. The global incidence is around 2%, however it might differ based on geographical areas. The incidence of this condition is lower in Asian and certain African ethnicities, ranging from 2% to 11% in Caucasian and Scandinavian populations [1-4].

CLINICAL CLASSIFICATION

The dermatological symptoms of psoriasis are diverse; psoriasis vulgaris, often known as plaque-type psoriasis, is the most common kind. The words psoriasis and psoriasis vulgaris are often used interchangeably in scientific literature. However, it is crucial to note that there are significant differences among the various clinical subtypes [5].

Figure 1. Common lessions in psoriasis

Psoriasis Vulgaris refers to a common form of psoriasis. Approximately 90% of psoriasis patients are classified as chronic plaque-type psoriasis. The typical clinical signs are well-defined, red, itchy patches coated with silver-colored scales. The plaques have the ability to merge and spread over extensive regions of the skin. Typical areas where this condition is found include the trunk, the outer surfaces of the limbs, and the scalp [6].

Inverse psoriasis that is characterized by the opposite effect or reaction.

In addition to being known as flexural psoriasis, inverse psoriasis specifically affects areas of the body where skin folds overlap, and is clinically identified by somewhat erosive red plaques and patches [7].

Guttate Psoriasis refers to a kind of skin condition characterized by small, drop-shaped lesions. Guttate psoriasis is a form of the condition characterized by the sudden appearance of tiny, red plaques. Typically, it impacts children or teenagers and is frequently caused by group-A streptococcal infections of the tonsils. Approximately 33% of those diagnosed with guttate psoriasis will experience the development of plaque psoriasis for the duration of their adult years [8].

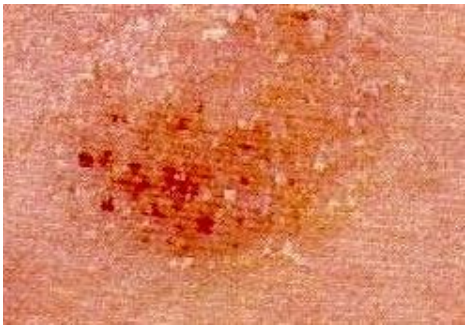

Figure 2. Auspitz sign

Pustular psoriasis is a kind of skin condition characterized by the presence of pustules. Pustular psoriasis is distinguished by the presence of many, merging sterile pustules. Pustular psoriasis can manifest as either a localized or widespread condition. There are two specific forms of skin conditions that have been identified: psoriasis pustulosa palmoplantaris (PPP) and acrodermatitis continuous of Hallopeau. Both conditions impact the hands and feet, but PPP specifically affects the palms and soles, whereas ACS is more localized in the fingertips and toes, and damages the nail structure. Generalized pustular psoriasis is a condition that has a sudden and fast development, with widespread redness and pustules forming underneath the top layer of skin. It is sometimes accompanied by symptoms affecting the whole body [9].

Erythrodermic psoriasis is a sudden disorder characterized by inflammation and redness affecting more than 90% of the entire body surface. Erythroderma can occur in any form of psoriasis and necessitates immediate medical intervention [10].

Co-occurring medical conditions in individuals with psoriasis

Psoriasis mostly impacts the skin, but it may also damage the joints and has been linked to several disorders. Inflammation extends beyond the skin affected by psoriasis and has been demonstrated to impact other organ systems. Therefore, it has been hypothesized that psoriasis is a systemic condition rather than a purely dermatological disorder. Psoriasis patients have higher prevalence of hyperlipidemia, hypertension, coronary artery disease, type 2 diabetes, and elevated body mass index in comparison to control persons. The prevalence of the metabolic syndrome, which includes the aforementioned disorders occurring together in a single patient, was shown to be twice as high in individuals with psoriasis. Psoriasis patients had a higher prevalence of coronary plaques compared to control participants, with a twofold increase. Multiple extensive investigations have demonstrated a positive association between the severity of psoriasis and an increased occurrence of diabetes and cardiovascular disease. There is disagreement among experts about whether psoriasis is an independent risk factor for cardiovascular disease. However, the overall evidence suggests that psoriasis does increase the risk of heart attack, stroke, and death from cardiovascular disease. Furthermore, it was shown that the risk also extends to people with moderate psoriasis, but to a lesser degree [11].

18F-fluorodeoxyglucose positron emission tomography-computed tomography (18F-FDG PET/CT) was used to evaluate vascular inflammation. The results showed that the length of psoriasis had a detrimental impact on predicting outcomes. Research has indicated that the combined impact of long-term, mild inflammation may speed up the progression of vascular disease [29]. Metha et al. conducted a research to measure systemic and vascular inflammation in six individuals with moderate to severe psoriasis using FDG-PET/CT. As anticipated, areas of inflammation were seen in the skin, joints, and tendons. Furthermore, the liver and aorta exhibited FDG uptake, indicating the presence of subclinical systemic inflammation. Moreover, the administration of ustekinumab resulted in a decrease in standardized uptake values in the liver, spleen, and aorta, as reported by Kim in 2018 [12, 13].

Psoriatic arthritis (PsA) occurs as a consequence of inflammation in the joints caused by psoriasis. Psoriatic arthritis (PsA) often develops after the appearance of skin symptoms. PsA is characterized by persistent inflammation similar to psoriasis and may lead to progressive damage, necessitating the use of systemic treatments. Psoriatic arthritis occurs in around 40% of individuals with psoriasis. It is estimated that about 15% of psoriasis patients have undiagnosed psoriatic arthritis. Clinically, it manifests as dactylitis and enthesitis, either in oligoarticular or polyarticular patterns. The polyarticular variety often exhibits nail involvement. Nails are specialized structures that are part of the skin and can potentially be impacted by inflammation caused by psoriasis. It has been observed that nail psoriasis affects over 50% of individuals with psoriasis, and in 5-10% of patients, it may be the only symptom of psoriasis. The manifestation of nail psoriasis is contingent upon the specific structure that is impacted by the inflammatory process. The involvement of the nail matrix is characterized by the presence of pitting, leukonychia, and onychodystrophy. On the other hand, inflammation of the nail bed is indicated by oil-drop staining, splinter hemorrhages, and onycholysis. Psoriatic nail involvement is correlated with joint involvement, and nail symptoms are present in as many as 80% of individuals with Psoriatic Arthritis (PsA).

Psoriasis is not only linked to a greater likelihood of developing cardiometabolic illness, but it is also connected with a higher occurrence of gastrointestinal and chronic renal disease. The presence of susceptibility loci that are common to both psoriasis and inflammatory bowel disease provides more evidence for the link, particularly in relation to Crohn's disease. A correlation between minor liver disease and imaging investigations has been documented. Psoriasis may increase the likelihood of developing chronic kidney disease and end-stage renal disease, regardless of known risk variables such as demographics, cardiovascular health, or medication use [14].

Figure 3. Nails in PsA

When considering all the many elements that contribute to psoriasis as a systemic illness, it becomes evident that they can significantly impact the quality of life of patients and the severity of their condition. Psoriasis has a similar negative impact on psychological quality of life as cancer, myocardial infarction, and depression. The significant prevalence of the disease is believed to be attributed to the symptoms of the condition, which encompass discomfort, itching, and bleeding, along with the aforementioned related conditions [15].

The contemporary significance of psoriasis is in its effect on psychological and mental well-being, since it directly influences social welfare and treatment outcomes. Individuals diagnosed with psoriasis exhibit a higher incidence of sadness, anxiety, and suicidal thoughts. Remarkably, the treatment of psoriasis results in a notable enhancement of symptoms related to anxiety. This has a positive impact on the overall outlook of the condition.

Psoriasis is a multifactorial illness with complicated characteristics, and in recent years, several new medicines have been developed to treat it. Despite the advancements in targeted therapy, psoriasis is still a manageable but still incurable condition. Targeted treatments have significant clinical effectiveness in inhibiting IL-23 and IL-17. These medicines have shown a lasting antipsoriatic impact even after the drugs were stopped, supporting the idea of illness modification [16].

CONCLUSION

This significant discovery will be further investigated in present and future research. However, in many instances, the first clinical response is just temporary, necessitating the use of an alternative biologic for therapy. Undoubtedly, further investigation is necessary to address the inquiry of the restricted drug survival of certain biologics. There is a high probability that the range of treatments available for psoriasis may expand soon, as research is being conducted on novel tiny compounds that can be taken orally. These molecules are designed to block RORγt, a specific target for treatment. Despite the effectiveness and safety of targeted treatments, the use of more general medications is still the primary approach to systemic therapy for psoriasis in many clinical situations worldwide. This is mainly owing to economic considerations, dose requirements, and the potential for unwanted effects. The involvement of genetics needs more clarification, not only in terms of propensity to illness, but also in the characterization of different forms of psoriasis based on cytokine signatures, and in the identification of indicators for medication response. Undoubtedly, psoriasis is presently the most comprehensively studied and effectively curable chronic inflammatory illness with a Th17 leaning. Once most patients have achieved outstanding clinical responses using existing therapeutic methods, the key challenges that need to be addressed are the categorization of psoriasis patients into the most suitable medication and the long-term effectiveness of our therapies.

REFERENCES

I. Unissa, R., Kumar, P. M., Pasha, M., Begum, S., & Maheswari, B. (2019). Psoriasis: a comprehensive review. Asian journal of Research in pharmaceutical science, 9(1), 29-38.

II. Albanesi, C. (2019). Immunology of psoriasis. In Clinical immunology (pp. 871-878). Elsevier.

III. Afonina, I. S., Van Nuffel, E., & Beyaert, R. (2021). Immune responses and therapeutic options in psoriasis. Cellular and Molecular Life Sciences, 78, 2709-2727.

IV. Benezeder, T., & Wolf, P. (2019, November). Resolution of plaque-type psoriasis: what is left behind (and reinitiates the disease). In Seminars in Immunopathology (Vol. 41, No. 6, pp. 633-644). Berlin/Heidelberg: Springer Berlin Heidelberg.

V. Raut, A. S., Prabhu, R. H., & Patravale, V. B. (2013). Psoriasis clinical implications and treatment: a review. Critical Reviews™ in Therapeutic Drug Carrier Systems, 30(3).

VI. Raut, A. S., Prabhu, R. H., & Patravale, V. B. (2013). Psoriasis clinical implications and treatment: a review. Critical Reviews™ in Therapeutic Drug Carrier Systems, 30(3).

VII. Micali, G., Verzì, A. E., Giuffrida, G., Panebianco, E., Musumeci, M. L., & Lacarrubba, F. (2019). Inverse psoriasis: from diagnosis to current treatment options. Clinical, cosmetic and investigational dermatology, 953-959.

VIII. Leung, A. K., Barankin, B., Lam, J. M., & Leong, K. F. (2023). Childhood guttate psoriasis: an updated review. Drugs in context, 12.

IX. Wang, H., & Jin, H. (2021). Update on the aetiology and mechanisms of generalized pustular psoriasis. European Journal of Dermatology, 31(5), 602-608.

X. Singh, R. K., Lee, K. M., Ucmak, D., Brodsky, M., Atanelov, Z., Farahnik, B., ... & Liao, W. (2016). Erythrodermic psoriasis: pathophysiology and current treatment perspectives. Psoriasis: Targets and Therapy, 93-104.

XI. Davidovici, B. B., Sattar, N., Jörg, P. C., Puig, L., Emery, P., Barker, J. N., ... & Krueger, J. G. (2010). Psoriasis and systemic inflammatory diseases: potential mechanistic links between skin disease and co-morbid conditions. Journal of Investigative Dermatology, 130(7), 1785-1796.

XII. Mehta, N. N., Yu, Y., Saboury, B., Foroughi, N., Krishnamoorthy, P., Raper, A., ... & Gelfand, J. M. (2011). Systemic and vascular inflammation in patients with moderate to severe psoriasis as measured by [18F]-fluorodeoxyglucose positron emission tomography–computed tomography (FDG-PET/CT): a pilot study. Archives of dermatology, 147(9), 1031-1039.

XIII. Kim, B. S., Lee, W. K., Pak, K., Han, J., Kim, G. W., Kim, H. S., ... & Kim, S. J. (2019). Ustekinumab treatment is associated with decreased systemic and vascular inflammation in patients with moderate-to-severe psoriasis: Feasibility study using 18F-fluorodeoxyglucose PET/CT. Journal of the American Academy of Dermatology, 80(5), 1322-1331.

XIV. FitzGerald, O., Ogdie, A., Chandran, V., Coates, L. C., Kavanaugh, A., Tillett, W., ... & Mease, P. J. (2021). Psoriatic arthritis. Nature reviews Disease primers, 7(1), 59.

XV. Reich, K. (2012). The concept of psoriasis as a systemic inflammation: implications for disease management. Journal of the European Academy of Dermatology and Venereology, 26, 3-11.

XVI. 16. Blackstone, B., Patel, R., & Bewley, A. (2022). Assessing and improving psychological well-being in psoriasis: considerations for the clinician. Psoriasis: Targets and Therapy, 25-33.