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GUTTATE PSORIASIS: A COMPREHENSIVE NARRATIVE REVIEW OF ITS PATHOGENESIS AND MANAGEMENT

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ABSTRACT Guttate psoriasis is a unique form of psoriasis characterized by sudden eruptions of small, scaly papules, often following a streptococcal infection. This narrative review examines its epidemiology, pathogenesis, clinical manifestations, diagnosis, and treatment options, highlighting the role of genetic and environmental factors in disease development. Phototherapy, topical corticosteroids, and vitamin D analogs are primary treatments, while systemic therapies and antibiotics are considered for refractory cases. Understanding guttate psoriasis aids in optimizing management and improving patient outcomes. Further research is necessary to refine therapeutic strategies and enhance long-term prognosis.

KEYWORDS : Guttate Psoriasis; Phototherapy; Streptococcal Infections; Psoriasis.

INTRODUCTION

Guttate psoriasis is an acute variant of psoriasis primarily affecting children and young adults, characterized by small, scaly lesions that typically appear after streptococcal infections. Despite being less common than chronic plaque psoriasis, guttate psoriasis poses unique challenges in understanding its pathogenesis and management. Genetic predispositions, especially HLA-Cw*0602, combined with environmental triggers like infections, play pivotal roles in its onset. This narrative review aims to provide a comprehensive exploration of guttate psoriasis, delving into the immunologic mechanisms underlying the disease, risk factors, and current therapeutic approaches, including phototherapy, topical treatments, and systemic interventions for refractory cases (1).

METHODS

This narrative review was conducted through a systematic search of four major databases: PubMed, Scopus, Web of Science, and Embase. The search strategy utilized keywords including "guttate psoriasis," "pathogenesis," "treatment," "management," and "HLA-Cw*0602." Articles were selected based on relevance, focusing on studies that discuss the immunologic mechanisms, genetic associations, and therapeutic options for guttate psoriasis. The review prioritized studies from the last two decades, although older, seminal studies were also considered when necessary. After screening for quality and relevance, only 15 references were included to ensure a concise and focused overview of the current understanding of guttate psoriasis.

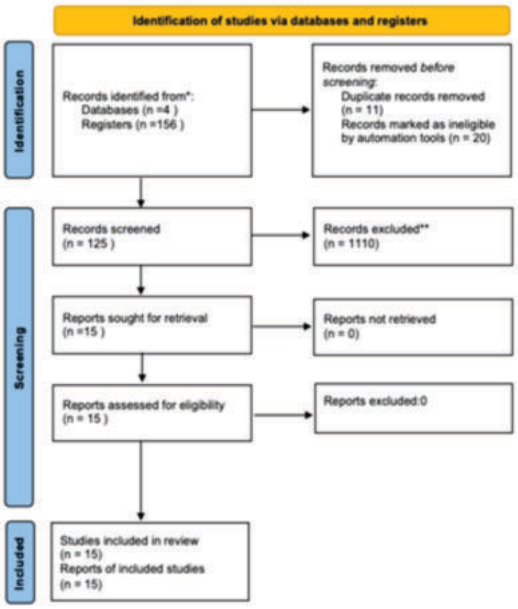

Figure 1. PRISMA.

Epidemiology

Guttate psoriasis is a relatively uncommon variant of psoriasis, accounting for less than 30% of psoriasis cases. It primarily affects children and young adults, with most cases occurring under the age of 30. The disease is characterized by a sudden onset of small, scaly papules, typically triggered by a preceding streptococcal infection, particularly streptococcal pharyngitis. Although guttate psoriasis can affect individuals of all ages, it shows a higher prevalence among younger populations. The global prevalence of psoriasis varies widely, estimated between 0.6% and 4.8%, with guttate psoriasis being notably less common than the chronic plaque form (2).

Epidemiological studies have not established a clear sex predilection, as both males and females appear equally susceptible. Ethnic and geographic factors may influence prevalence rates, though data are limited. Understanding the demographic distribution and environmental triggers of guttate psoriasis is essential for developing targeted prevention and treatment strategies, especially in populations at higher risk (3).

Risk Factors

The development of guttate psoriasis is influenced by a combination of genetic and environmental factors. A primary genetic risk factor is the HLA-Cw*0602 allele, strongly associated with guttate psoriasis. Studies have shown that individuals carrying this allele have a significantly higher susceptibility to psoriasis, particularly the guttate subtype. Familial cases are common, suggesting a genetic predisposition (3,4).

Environmental triggers play a crucial role, with streptococcal infections, particularly streptococcal pharyngitis, being a well-recognized precipitating factor. In many cases, guttate psoriasis emerges approximately two to three weeks after a streptococcal infection. Other infections, such as varicella and COVID-19, have also been reported to trigger guttate psoriasis, though less frequently (4).

Certain medications, like beta-blockers and tumor necrosis factor (TNF)-alpha inhibitors, have been implicated in triggering or exacerbating guttate psoriasis in susceptible individuals. Additionally, lifestyle factors, including smoking and alcohol use, may contribute to disease onset or worsen symptoms, although their impact is less well-defined in this psoriasis variant (5).

Pathogenesis

The pathogenesis of guttate psoriasis involves a complex interaction between genetic predispositions and immune responses to environmental triggers. The presence of the HLA-Cw*0602 allele is strongly linked to guttate psoriasis, potentially enhancing immune sensitivity to certain antigens. Streptococcal infections are thought to play a central role, as

bacterial antigens may mimic skin proteins, triggering an autoimmune response through molecular mimicry. This response activates T-cells, particularly Th17 cells, leading to increased production of pro-inflammatory cytokines such as IL-17 and IL-23. These immune mechanisms result in the rapid proliferation of keratinocytes, causing the characteristic scaly lesions of guttate psoriasis (6).

Clinical Manifestations

Guttate psoriasis is characterized by the sudden onset of small, drop-like (guttate) lesions that appear as red, scaly papules. These lesions typically measure between 2 and 15 mm in diameter and primarily affect the trunk and proximal limbs, though they may also appear on the scalp, hands, feet, and nails. The condition often follows a streptococcal infection, particularly pharyngitis, and is more common in children and young adults. Patients may experience mild pruritus, but severe itching is uncommon. The lesions may resolve spontaneously within weeks or months, though some cases progress to chronic plaque psoriasis over time (7).

Diagnosis

The diagnosis of guttate psoriasis is primarily clinical, based on the characteristic presentation of multiple small, erythematous, scaly papules that appear suddenly, often after a recent streptococcal infection. Physical examination typically reveals drop-like lesions distributed on the trunk, arms, and legs, which helps differentiate guttate psoriasis from other psoriasis subtypes and skin conditions (7,8).

A thorough patient history is essential, focusing on recent infections, particularly streptococcal pharyngitis, and family history of psoriasis, which may indicate a genetic predisposition. Although the clinical presentation is often sufficient for diagnosis, additional tests can be useful in certain cases. A skin biopsy may be performed when the diagnosis is uncertain. Histopathological examination of guttate psoriasis lesions typically reveals parakeratosis, neutrophil aggregates in the stratum corneum (Munro microabscesses), acanthosis, and elongation of the rete ridges. These findings, while common in psoriasis, can help confirm guttate psoriasis when the clinical picture is atypical (9).

Laboratory tests may include antistreptolysin O (ASO) titers or a throat culture to detect recent streptococcal infection, especially if the patient has pharyngitis symptoms. Elevated ASO titers suggest a recent streptococcal infection, supporting the association with guttate psoriasis, though these tests are not diagnostic on their own (10).

Differential diagnosis is also crucial, as conditions such as pityriasis rosea, secondary syphilis, and tinea corporis can mimic guttate psoriasis. In difficult cases, a combination of clinical examination, patient history, biopsy, and laboratory tests ensures accurate diagnosis and guides appropriate management strategies for patients with guttate psoriasis (10).

Treatment

The treatment of guttate psoriasis aims to alleviate symptoms, manage inflammation, and prevent progression to chronic plaque psoriasis. Given the potential for spontaneous remission within weeks or months, some patients with mild disease may choose to forego treatment. However, for those with extensive or symptomatic lesions, various therapeutic options are available (11).

First-Line Therapies

Phototherapy, particularly narrowband ultraviolet B (UVB), is considered a first-line treatment for guttate psoriasis due to its effectiveness and safety profile. Narrowband UVB targets large body areas, making it ideal for patients with widespread lesions. Studies suggest that narrowband UVB leads to significant improvement in most patients, with many experiencing near-complete clearance after several weeks of therapy (11,12).

Topical therapies, including corticosteroids and vitamin D analogs (e.g., calcipotriene), are another common option. These treatments reduce inflammation and scaling when applied directly to the lesions. Low- to medium-potency corticosteroids are typically recommended, especially for atrophy-prone areas like the face and intertriginous regions. Topical vitamin D analogs can be used alone or in combination with corticosteroids to enhance efficacy. However, topical treatments may be less practical for patients with extensive lesions due to application difficulty (12).

Systemic Therapies

In cases of refractory guttate psoriasis or frequent recurrences, systemic therapies may be considered, although data on their efficacy specifically for guttate psoriasis are limited. Systemic immunosuppressive agents, such as methotrexate, cyclosporine, and biologics like tumor necrosis factor (TNF) inhibitors, are typically reserved for severe or persistent cases that do not respond to other treatments. These drugs suppress the immune response, reducing the frequency and severity of flare-ups, though they carry potential side effects and require careful monitoring (13).

Antibiotics and Tonsillectomy

Given the link between streptococcal infections and guttate psoriasis, systemic antibiotics may be beneficial in patients with active streptococcal infections. However, the routine use of antibiotics solely for treating guttate psoriasis is controversial due to limited supporting evidence. In cases with recurrent, streptococcus-associated guttate psoriasis, tonsillectomy has been considered to reduce flare-ups, although this is not standard practice (14).

Management of Refractory Disease

For patients who do not respond to first-line treatments, combination therapy (e.g., phototherapy with topical agents) may be employed. A tailored approach considering disease severity, patient preference, and risk factors is essential in managing guttate psoriasis effectively. Regular follow-up is recommended to monitor response and adjust treatment as needed (15).

Guttate psoriasis is a distinct form of psoriasis, often triggered by streptococcal infections and marked by small, erythematous lesions. While it can resolve spontaneously, treatment is necessary in more extensive or symptomatic cases. First-line options include phototherapy and topical therapies, with systemic treatments reserved for severe or refractory cases. Given the association with infections, antibiotics or tonsillectomy may be beneficial in specific patients. A personalized approach is essential for effective management, and regular follow-up allows for timely adjustments in therapy. Further research is needed to better understand the optimal treatments for guttate psoriasis and its long-term prognosis.

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