Psoriasis and Psoriatic Arthritis Overview

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Abstract

Psoriasis and psoriatic arthritis (PsA) are chronic immune-mediated diseases that primarily affect the skin and joints, respectively; these diseases are also associated with high rates of cardiovascular and other comorbidities. Despite over 40 genes proven to be related to the disease, the exact causes of psoriasis and PsA are still to be determined. Recent insights into the underlying pathophysiology of these diseases have revealed novel therapeutic targets. Effective management requires timely diagnosis and initiation of treatment. Yet, both psoriasis and PsA remain underrecognized and undertreated in current clinical practice. Recognizing the true physical, social, and emotional burden of psoriasis and PsA, as well as their associated comorbidities, is the first step to improving the prognosis for affected patients.

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For author information and disclosures, see end of text.

PSORIASIS OVERVIEW

Psoriasis is a chronic, multifactorial, immune-mediated skin disease. The characteristic erythematous plaques of psoriasis are often painful and disfiguring, leading to a substantial decrease in quality of life.[1] Cardiovascular disease (CVD), diabetes, and other autoimmune disorders are common among patients with psoriasis, contributing to the overall burden of disease and increasing healthcare resource utilization.[1]

Epidemiology

Based on an analysis of National Health and Nutrition Examination Survey data from 2009 to 2010, the estimated prevalence of psoriasis among adults 20 years and older in the United States was 3.2%. The prevalence was highest among Caucasians (3.6%), followed by African Americans (1.9%), Hispanics (1.6%), and others (1.4%). Extrapolating to 2013 US census data, an estimated 7.4 million adults in the United States are living with psoriasis.[2]

Pathophysiology

The precise pathologic mechanisms that drive the development of psoriasis are extremely complex.[3] However, recent insights into its pathophysiology have enabled a better understanding of the disease and revealed potential new therapeutic targets.[4]

Immunologic Mechanisms

Psoriasis is an immune disease that involves abnormally activated cells and molecules of the innate and adaptive immune systems.[4] Impaired T-cell activity contributes to the hyperproliferation and abnormal differentiation of epidermal skin cells. Whereas normal epidermal regeneration occurs every 21 to 28 days, the epidermis turns over every 3 to 4 days in patients with psoriasis.[3]

Keratinocytes, the most predominant type of epidermal cells, are key mediators of impaired immune cell function. In patients with psoriasis, keratinocytes recruit inflammatory dendritic cells to release interleukin (IL)-12 and IL-23, which, in turn, activate T-cells to produce other psoriatic cytokines, such as IL-17, IL-22, interferon (IFN)-gamma, and tumor necrosis factor-α (TNF-α). In particular, IL-17 and IL-23 appear to be the dominant cytokines driving the aberrant activity of T-cells and keratinocytes in psoriasis. Current and emerging biologic therapies target these two important cytokines, as well as others, to control psoriatic inflammation.[4]

Genetics of Psoriasis

As a multifactorial disease, psoriasis has a complex genetic basis. Genetic studies have revealed more than 40 loci associated with psoriasis susceptibility, each with multiple genes that are involved in skin barrier functions, as well as innate and adaptive immunity. The involvement of these genes and their encoded proteins supports the central role of altered immune function in the pathogenesis of psoriasis.[5]

The different clinical phenotypes of psoriasis appear to correspond with distinct immunogenetic profiles. The estimated heritability of psoriasis—a measure that describes how much of the observed phenotypic variation is attributable to genetic variation—is 60% to 90%; this is one of the highest rates among complex genetic diseases. In the future, genetic testing is likely to play an important role in predicting the clinical course of psoriasis, as well as the likelihood of response to specific treatment options.[5]

Other Risk Factors

In addition to genetics and altered immune function, several other risk factors may predispose patients to psoriasis. These include[3]:

- Environmental triggers (infection, stress)
- Medications (lithium, beta-blockers)
- Other immune-mediated diseases (Crohn's disease, multiple sclerosis)
- Psychogenic stressors, particularly in pediatric patients (emotional or mental stress)

Presentation and Diagnosis

Most patients with psoriasis present without other clinical manifestations. In symptomatic patients, common manifestations include pruritus, fever, and malaise.[3] Even in the absence of comorbid psoriatic arthritis (PsA), joint pain is a common presentation in patients with psoriasis. In one study, 51.8% of patients with psoriasis who did not have PsA reported joint pain. Of those with joint pain, 48.1% experienced pain in more than 4 joints.[6]

The onset of psoriasis can occur at any age; however, new diagnoses tend to follow a bimodal distribution around young adulthood (20-35 years old) and middle age (50-60 years old). Although male and female patients are affected equally across all age groups, younger men tend to be affected more frequently than younger women.[3]

The diagnosis of psoriasis is often delayed by several years after symptom onset. In one population-based cohort study of US patients with psoriasis (N = 1005), the median age of diagnosis was 37 years, and the median age of symptom onset was 34 years.[6]

Disease Classification

The major subtypes of psoriasis are based on historic descriptions of its underlying histology and morphology. In the clinical setting, however, patients often present with more than 1 subtype of psoriasis.[1]

Plaque Psoriasis

The most common clinical phenotype is plaque psoriasis, which affects approximately 80% to 90% of patients with this disease (**Figure 1**). Plaque psoriasis is characterized by well-defined, sharply demarcated, erythematous plaques that vary in size from 1 cm to several centimeters. Plaque involvement can range from a few small lesions to multiple plaques that cover major portions of body surface. Individual plaques tend to be round or oval in shape, with a thin, dry, micaceous or silvery-white scale that can vary in appearance depending on regional anatomic differences. Plaques are most likely to affect the scalp, trunk, buttocks, and extensor aspect of the limbs (knees and elbows). Psoriasis lesions tend to be distributed symmetrically over the body. When lesions are present on the palms, soles, or over joint lines, painful fissuring frequently occur within the plaques, leading to significant disability.[1]

Pustular Psoriasis

Neutrophils are commonly present in the outermost layer of the skin in patients with psoriatic lesions. When enough neutrophils accumulate to manifest in clinical signs and symptoms, it is classified as pustular psoriasis (**Figure 2**). There are 2 major subtypes of pustular psoriasis: generalized and localized. Acute generalized pustular psoriasis is a rare form of severe psoriasis characterized by pustules across multiple body sites, erythematous skin,

Figure 1. Plaque Psoriasis

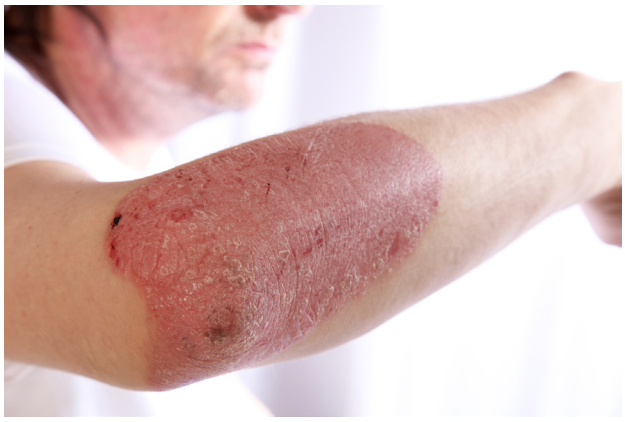

Figure 2. Pustular Psoriasis

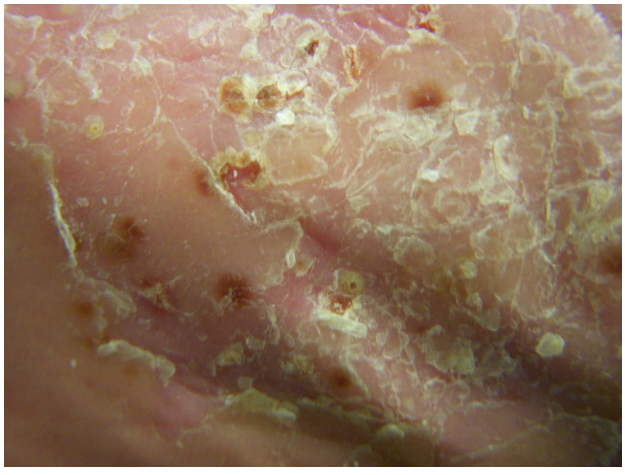

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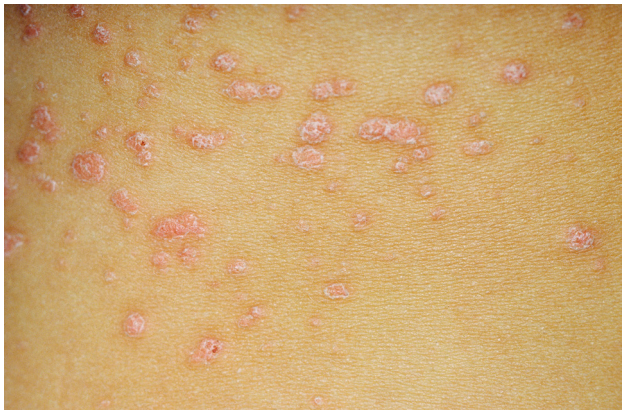
Figure 3. Guttate Psoriasis



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fever, and systemic toxicity. Palmoplantar pustulosis is a localized form of pustular psoriasis that involves pustules on the palms of the hands and/or soles of the feet.[1]

Guttate Psoriasis

Guttate psoriasis affects less than 2% of patients with psoriasis, and it is seen primarily in patients younger than 30 years (Figure 3). Lesions tend to be small (1 to 10 mm), salmon pink in color, and dew drop shaped, with a fine scale. The papules are most likely to affect the trunk and proximal extremities. In younger patients, an upper respiratory infection associated with group A beta-hemolytic streptococci often precedes guttate psoriasis by 2 to 3 weeks.[1]

It is not uncommon for papular lesions of guttate psoriasis to appear as suddenly as the initial manifestation of psoriasis in younger patients. Alternatively, guttate psoriasis may occur as an acute exacerbation in older patients with established plaque psoriasis.[1]

Nail Psoriasis

Patients with any subtype of psoriasis can also exhibit characteristic psoriatic nail changes, such as pitting (partial loss of cells from the surface of the nail plate), onycholysis (separation of the nail from the nail bed), subungual hyperkeratosis (scaling under the nail), and the oil-drop sign (translucent discoloration in the nail bed). Approximately 60% of all patients with psoriasis will experience fingernail changes, and 35% will experience toenail changes. However, nail psoriasis is considered a marker for PsA, particularly in patients with distal interphalangeal joint involvement (Figure 4).[1]

Erythrodermic Psoriasis

Patients with erythrodermic psoriasis present with generalized erythema that covers major portions of the body surface area (BSA). This type of psoriasis can occur suddenly in a patient with little history of the disease or develop gradually from chronic plaques. Erythrodermic skin exhibits altered thermoregulatory properties, leading to a range of potential symptoms, such as hypothermia, chills, dehydration from fluid loss, fever, malaise, lower leg edema, and congestive heart failure (Figure 5).[1]

Inverse Psoriasis

Inverse psoriasis describes psoriatic lesions that occur in the skin folds, such as the axillary, genital, abdominal, perineal, intergluteal, and inframammary areas (Figure 6). Because these areas tend to be moist, lesions have minimal scale and are primarily erythema-

tous in nature; in addition, secondary candidiasis in the regions is not uncommon. Up to 60% of patients with psoriasis have genital involvement.[7]

Assessment of Disease Activity

The severity of psoriasis is defined by the areas affected and the percentage of BSA covered. However, psoriasis is classified as severe when lesions affect the hands, feet, face, scalp, or genitals, regardless of the BSA affected. When these areas are not affected, psoriasis is described as:

- Mild (<5% of BSA)
- Moderate (5%-10% of BSA)
- Severe (>10% of BSA)

The majority of patients with psoriasis (70% to 75%) will present with mild to moderate disease.[3] Composite measures of disease activity can also be used to assess psoriasis disease severity and monitor the effect of treatment over time.[1]

Composite Measures of Disease Activity

The Psoriasis Area and Severity Index (PASI), the standard tool in psoriasis clinical trials for assessing baseline disease severity and monitoring therapeutic response, is the most common composite tool for measuring psoriasis severity.[1] Calculating the total PASI score is a 2-step process. First, clinicians assign a score from 0 (complete lack) to 4 (most severe possible) to describe the presence and severity of each of 3 components of psoriatic plaques (erythema, induration, and desquamation) within each of 4 regions of the body (head/neck, trunk, upper extremities, and lower extremities). Second, clinicians estimate the extent of skin involvement by assigning a grade from 0 (no psoriasis) to 6 (90%-100% involvement) to estimate the BSA within each of the 4 body regions. Utilizing a complex algorithm, the individual scores are used to calculate a total PASI score that can range from 0 to 72. In real-world clinical practice, PASI scores higher than 36 are rare.[8]

Critics of the PASI argue that the tool does not correspond well with the patient's experience of psoriasis severity. The PASI algorithm assigns equal weight to lesions occurring anywhere on the body; however, plaques that affect the face, hands, and anogenital area are considered by patients to be more severe than those located elsewhere.[8] Furthermore, the PASI does not capture other aspects of psoriasis that are important to patients. When patients with psoriasis (N = 1005) were asked to rank the top 5 most important factors contributing to disease severity, more than one-third (36.1%) ranked itching as the most important factor. Additional factors included location/size of lesions (21.8%), flaking (11.4%), scaling (8.3%), and pain/swelling of joints (5.4%). Despite being the most important symptom for many patients, itching is not captured in the PASI or other instruments such as the Physician Global Assessment. Therefore, current tools may underestimate the true burden of psoriasis on patients.[6]

New options for assessing the severity of psoriasis, with an emphasis on patient-reported outcomes, have recently

Figure 4. Nail Psoriasis

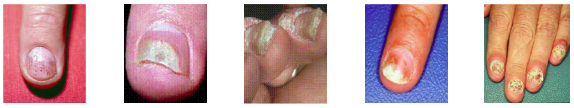

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Figure 5. Erythrodermic Psoriasis

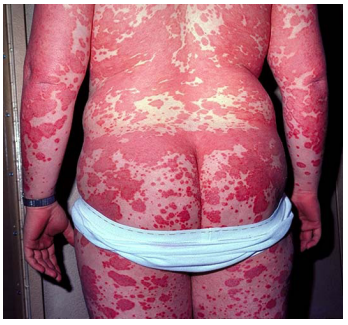

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Figure 6. Inverse Psoriasis of the Anus

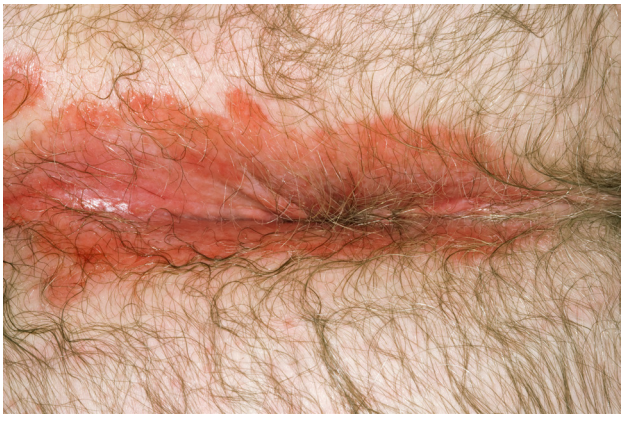

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Table 1. Social, Physical, and Behavioral Concerns Across the Patient Life Span[11]

Childhood (Birth to 21 years)	Young Adulthood (21 to 35 years)	Middle Adulthood (35 to 65 years)	Late Adulthood (65 years and older)
• Hyperlipidemia • Obesity • Hypertension • Diabetes mellitus • Rheumatoid arthritis • Crohn's disease • Depression • Anxiety	• Stigma • Relationships • Pregnancy • Tobacco use • Alcohol use • Depression • Obesity • Inflammatory bowel disease • Celiac disease • Nonmelanoma skin cancer • Myocardial infarction	• Career • Psoriatic arthritis • Metabolic syndrome • Diabetes • Dyslipidemia • Hypertension • Chronic obstructive pulmonary disease • Hepatic disease	• Atherosclerosis • Chronic kidney disease • Stroke • Parkinsonism • Malignancy • Mortality

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been implemented. These tools facilitate an improved understanding of the impact of psoriasis on patients' lives, and provide better instruments for measuring the efficacy of powerful new treatments in clinical practice.[8]

Differential Diagnosis

Not all cases of psoriasis present with characteristic erythematous, scaling, or silvery plaques. When lesions are misleading, the differential diagnosis of psoriasis can be challenging, and it may vary by psoriasis subtype.[3] Plaque type psoriasis is often confused with eczema, fungal infections such as tinea corporis, squamous cell carcinoma (Bowen's disease), cutaneous T-cell lymphoma (CTCL) and subacute cutaneous lupus erythematous. Pustular psoriasis should be differentiated from candidiasis and acute generalized exanthematic pustulosis. Guttate psoriasis can appear similar to secondary syphilis or pityriasis rosea. Erythrodermic psoriasis should be differentiated from pityriasis rubra pilaris, Sézary syndrome, drug eruptions, and even Norwegian scabies. Finally, inverse psoriasis can have a similar presentation to intertrigo, candidiasis, or tinea cruris.[3]

Comorbidities

Patients with psoriasis, particularly those who are already burdened with moderate to severe skin disease and those with PsA, face a high risk of comorbidities.[9] Approximately 75% of patients with psoriasis have at least 1 comorbid condition.[6]

A recent analysis of a large US administrative claims database revealed the scope and prevalence of comorbidities in patients with psoriasis. The study compared healthcare utilization patterns among patients with moderate to severe psoriasis (N = 5492) and controls without psoriasis or PsA matched by age, gender, and geographic region (N = 5492). The most common comorbidities in patients with psoriasis were cardiometabolic risk factors such as hyperlipidemia, hypertension, and diabetes. These, as well as multiple other comorbidities including obesity and the metabolic syndrome, occurred with significantly greater frequency among patients with psoriasis than among controls. Hyperlipidemia was present in 33% versus 27%, hypertension in 33% versus 24%, and diabetes in 16% versus 10% of psoriasis versus non-psoriasis patients, respectively; in addition, 22.1% of patients with psoriasis also had a diagnosis of PsA.[10]

Given their high burden of comorbidities, patients with psoriasis have many interactions with the healthcare system. During the 12-month study period, patients with psoriasis were more likely than individuals without psoriasis to have any prescription medications filled (98.8% vs 76.6%; odds ratio [OR], 27.5; P <.001) and had a higher number of distinct medications filled (10.9 vs 5.2; incident rate ratio [IRR], 2.1; P <.001). In addition to utilizing a range of psoriasis treatments, including biologic therapy (65.2%), nonbiologic systemic therapy (27.3%), and phototherapy (16.5%), patients with psoriasis were more likely than controls to fill prescriptions for antidepressants (25% vs 13.9%; OR, 2.1; P <.001), antidiabetic drugs (11.3% vs 6.8%; OR, 1.7%; P <.001), and cardiovascular drugs (47.9% vs 36.1%; OR, 1.7%; P <.001). Furthermore, patients with psoriasis were significantly more likely than non-psoriasis controls to utilize medical services during the 12-month observational period. This included a higher likelihood of outpatient visits (99.0% vs 84.5%; OR, 29.3; P < .001), emergency department visits (21.4% vs 16.4%; OR, 1.3; P <.001), and hospital admissions (9.3% vs 6.4%; OR, 1.3; P = .001).[10] These findings highlight the economic implica-

tions of comorbidity management in patents with psoriasis.

Patient Expectations

In addition to having medical comorbidities, patients with psoriasis may experience a range of profound psychosocial and behavioral challenges throughout the course of their disease. Each life stage is associated with a different mix of predominant concerns from the patient's perspective (Table 1[11]). The optimal management of psoriasis should address all aspects of disease burden through appropriate interventions or referrals.[11]

Table 2. Psoriasis and Impact on Patient Quality of Life[12]

Impact Domain	Patients Reporting Negative Impact (n = 66)	Examples
Emotional	98%	Mood, identity, confidence, self-worth
Social	94%	Friends, relationships (meeting new people, avoidance of strangers), activities, sports
Family	70%	Family relationships, responsibilities, activities
Professional	68%	Work relationships and interactions, ability to perform work duties, career choices and decisions
Physical	38%	Physical functioning (basic mobility, exercise), sleep issues, weight gain
Sexual	21%	Emotional and physical intimacy, sexual activity, sexual interest/desire
Educational	17%	Student life, starting or continuing school, school choices

Adapted from Pariser D, Schenkel B, Carter C, et al. A multicenter, non-interventional study to evaluate patient-reported experiences of living with psoriasis. *J Dermatolog Treat*. 2016;27(1):19-26. doi: 10.3109/09546634.2015.1044492.

Quality of Life

Across the lifespan, quality of life is of particular concern. Patients with moderate to severe psoriasis commonly report negative social, emotional, and other life experiences that they attribute to their disease. Suicidal ideation is significantly increased in younger psoriasis patients. Table 2[12] describes the scope and frequency of these adverse experiences. Addressing these patient-reported outcomes is a key component of comprehensive psoriasis care.[12]

Treatment

Psoriasis management has undergone a major paradigm shift from older therapies to newer biologic agents. With this change in focus, managed care organizations face new challenges in balancing the benefits, limitations, and pharmacoeconomics of current and emerging therapies. See Part 2 of this continuing education supplement for a review of current local and systemic options for psoriasis treatment.

PSORIATIC ARTHRITIS OVERVIEW

PsA is an underdiagnosed and undertreated inflammatory joint disease that develops in a substantial minority of patients with psoriasis. Although the clinical course is variable, many patients with PsA can experience progressive joint disease, impaired physical function, and decreased quality of life.[13]

Prevalence and Epidemiology

Among patients with psoriasis, the prevalence of PsA in recent US cohort studies ranged from 22% to 27%.[6,10] Overall, PsA affects approximately 0.1% to 0.2% of the general population.[14] The clinical manifestations of PsA tend to emerge 5-12 years after initial skin presentation (ie, between the ages of 30 and 50 years in affected individuals). As with psoriasis, men and women are equally likely to develop PsA.[15]

Pathophysiology

Although the etiology of PsA remains still to be completely understood, multiple immune system cell types and cytokines have been implicated in PsA disease activity.[14,15] The synovial fluid of joints affected by PsA shows increased levels of T-cells and cytokines such as TNF, IL-6, IL-12/IL-23, and IL-17.[15] Together, these cytokines drive joint inflammation and other downstream biological effects, such as osteoblast and osteoclast activation, which further contributes to joint damage.[16] Biologic therapies targeting these aberrant signaling pathways have emerged as key treatment options for PsA, particularly for patients with moderate to severe disease.[13]

Presentation and Prognosis

The classic clinical manifestations of PsA include swelling, tenderness, stiffness, and pain of the joints and surrounding tissues.[15] Dactylitis ("sausage digit") is a hallmark feature of PsA that involves swelling of the joints, tendons, ligaments, and synovial tissue in the hands and/or feet (Figure 7).[15,17] Enthesitis is tenderness and swelling where tendon, ligament, or joint capsule

Figure 7. Dactylitis

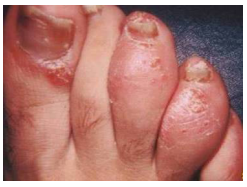
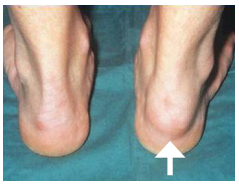


Figure 8. Enthesitis



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fibers insert into the bone; it is particularly common within the plantar fascia, Achilles' tendons, ribs, spine, and pelvis (Figure 8).[15]

Joint involvement in PsA can include peripheral and/or axial joints. Most patients (95%) show some degree of peripheral joint involvement, whereas only 5% have exclusively axial joint involvement (spondyloarthritis). Up to 50% of patients with PsA will have symptoms in both the spine and peripheral joints. In addition to experiencing joint symptoms, approximately 90% of patients with PsA will exhibit characteristic psoriatic nail disease, particularly in those with distal interphalangeal involvement.[1] Of note, there is no correlation between the severity of skin and joint symptoms in PsA. Patients with PsA may have very mild skin disease with severe arthritis, or vice versa.[15]

The clinical course of PsA is characterized by a series of remissions and disease flares, with fewer than 20% of patients experiencing prolonged remissions.[13] Prognosis is unpredictable and varies from mild joint disease to severe and debilitating outcomes.[15] Approximately 25% to 30% of patients will experience relatively benign joint inflammation, with limited disability over time. For up to 60% of patients, however, PsA is associated with progressive, erosive, and deforming joint damage. Severely deforming arthritis (arthritis mutilans) affects approximately 5% of patients with PsA.[17]

One of the major barriers to improved prognosis involves widespread undertreatment.[6] Many patients with PsA do not receive the recommended systemic therapies to slow disease progression.[13] In the Multinational Assessment of Psoriasis and Psoriatic Arthritis (MAPP) survey (N = 1005), only half of patients were being treated with conventional oral therapy (24%) or biologic therapy (26%) to address their joint symptoms.[6] Without recommended treatment, a significant portion of patients with PsA will experience ongoing systemic inflammation, progressive joint damage, severe disability, multiple comorbidities, and increased mortality.[15,18-20]

Diagnosis

The diagnosis of PsA is made on the basis of the modified Classification Criteria for Psoriatic Arthritis (CASPAR).[13,21] To confirm a diagnosis of PsA, a patient with musculoskeletal symptoms, such as arthritis, enthesitis, and/or spondylitis, must score at least 3 points using the CASPAR criteria (Table 3[13,21]).[13,21]

The range of diagnostic criteria illustrates the diversity of clinical phenotypes of PsA. As an example, a patient with musculoskeletal symptoms and current psoriasis can meet the diagnostic criteria for PsA with the presence of one additional sign, such as psoriatic nail dystrophy. Conversely, a patient with musculoskeletal symptoms but no personal or family history of psoriasis can meet the diagnostic criteria by exhibiting 3 other clinical features suggestive of PsA, such as dactylitis, juxtaarticular new bone formation, and rheumatoid factor negativity.[13]

Joint symptoms are the predominant complaint among patients with PsA. In the MAPP survey, nearly half of patients with PsA and psoriasis (48.1%) ranked pain and swelling of the joints as the most important factor contributing to their disease severity. Additional factors cited included itching (14.8%), location/size of psoriasis lesions (10.0%), flaking (5.6%), and scaling (3.0%).[6]

Delayed diagnosis and initiation of treatment of PsA are major management challenges. In the MAPP survey, patients with PsA reported a mean interval of 12.4 years between the onset of joint symptoms and the onset of skin symptoms. The median age at the time of PsA diagnosis was 44 years, compared with 37 years for psoriasis.[6]

Table 3. Classification Criteria for Psoriatic Arthritis (CASPAR)[13,21]

Criteria	Point Value[a]
Current psoriasis	2
Personal history of psoriasis (in the absence of current psoriasis)	1
Family history of psoriasis (in the absence of current psoriasis or a personal history of psoriasis)	1
Dactylitis (current or personal history)	1
Juxta-articular new bone formation	1
Rheumatoid factor negativity	1
Psoriatic nail dystrophy (onycholysis, pitting, and/or hyperkeratosis)	1

[a]The diagnosis of psoriatic arthritis requires a total score of ≥3 in patients with psoriasis and musculoskeletal symptoms (arthritis, enthesitis, and/or spondylitis).
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To achieve tight control of disease activity to improve joint outcomes, early detection of PsA is critical for initiating appropriate treatment.[22] However, making a timely diagnosis of PsA is challenging across provider specialties. In the MAPP survey, 37.6% of dermatologists (N = 101) described differentiating PsA from other arthritic diseases as the greatest challenge in managing patients with PsA. In addition, 25.0% of rheumatologists (N = 100) cited delayed referral of patients as one of the greatest challenges in managing the population of patients with PsA. Furthermore, the majority of dermatologists (87.1%) and rheumatologists (85.0%) indicated that, because of the failure to make the connection between skin and joint symptoms, PsA is likely underdiagnosed in patients with psoriasis.[6] Indeed, one recent meta-analysis found that the prevalence of undiagnosed PsA among patients with psoriasis (N = 7831) was 15.5%.[22]

To minimize the delay in diagnosing PsA, dermatologists are encouraged to screen patients with psoriasis for the signs and symptoms of PsA at every clinic visit.[13,15] Screening questionnaires are useful tools for detecting rheumatologic symptoms in patients with psoriasis.[22] The Psoriasis and Arthritis Screening Questionnaire, Psoriasis Epidemiology Screening Tool, and Toronto Psoriatic Arthritis Screen can be used by dermatologists and other providers to identify patients with potential PsA who require further assessment by a rheumatologist.[22,23]

Differential Diagnosis

The differential diagnoses of PsA include rheumatoid arthritis, erosive osteoarthritis, crystal arthritis (eg, gout and pseudogout), and other seronegative spondyloarthropathies, such as reactive arthritis, enteropathic arthritis, and ankylosing spondylitis.[14]

Comorbidities

More than half of patients with PsA will have at least 1 comorbidity that contributes to the patient's overall disease burden.[18] It is not uncommon to diagnose multiple medical comorbidities in this patient population. In a study of 631 patients with PsA, 42% had 3 or more comorbid conditions.[24]

Cardiovascular comorbidities are of particular concern for patients with PsA, given the high morbidity and mortality burden of CVD.[19,20] One large population cohort study examined the incidence of CVD and major adverse cardiovascular events (MACE; defined as myocardial infarction [MI], stroke, or sudden death) in both patients with PsA (N = 7982) and in those without PsA (N = 74,583). For this analysis, CVD was defined as any diagnosis of arrhythmia, ischemic heart disease, angina, MI, stroke, pericardial disease, pulmonary hypertension, or sudden death. The rate of incident CVD was 12.8 cases per 1000 person-years among patients with PsA, or 33% higher than the rate of 9.6 cases per 1000 person-years in individuals without PsA (IRR, 1.33; 95% CI, 1.23-1.44). Patients with PsA also had a significantly higher rate of MACE. The MACE rate was 4.6 events per 1000 person-years in the PsA group and 3.5 events per 1000 person-years in the non-PsA group (IRR, 1.30; 95% CI, 1.15-1.47). Together, these findings support the association between PsA and increased risk of CVD and MACE.[19]

Another recent population-based longitudinal cohort study examined the risk of MACE in patients with PsA (N = 8706), psoriasis (N = 138,424), or rheumatoid arthritis (N = 41,742) and in unaffected individuals (N = 81,573). After controlling for traditional cardiovascular risk factors, patients with PsA who were not undergoing treatment with disease-modifying antirheumatic drugs (DMARDs) were 24% more likely to experience MACE than were controls (hazard ratio [HR], 1.24; 95% CI, 1.03-1.49). By comparison, patients with PsA who were treated with DMARDs did not have a significantly increased risk of MACE (HR, 1.17; 95% CI, 0.95-1.46). These findings highlight the importance of appropriate treatment to control underlying disease activity and address excess cardiovascular risk.[20]

Additional comorbid conditions in patients with PsA can include osteoporosis, autoimmune ophthalmic diseases (uveitis), liver disease, inflammatory bowel disease, kidney disease, malignancy, and infection.[18]

Patient Expectations

The burden of PsA and its treatment can adversely affect quality of life for many patients.[6] Depression and anxiety are highly prevalent among patients with PsA, particularly among those with more severe disease.[18] Dissatisfaction with various aspects of PsA disease management—including treatment efficacy and tolerability, monitoring requirements, and convenience—is common.[25] Importantly, patients with PsA may assess disease severity differently from providers, underscoring the need for open patient-provider communication to ensure that the patient's treatment priorities are being addressed.[6]

Treatment

The goals of treatment in PsA are to control inflammatory disease activity, manage joint pain, improve mobility, safeguard patient quality of life, and prevent

joint destruction. Given that focusing on the skin disease alone will not improve joint symptoms in PsA, patient management ideally involves a multidisciplinary collaboration with input from dermatology and rheumatology. With the development of novel biologic therapies, clinicians have new options for targeting the underlying pathophysiology of PsA.[13] See part 2 for a detailed overview of current and emerging PsA treatment strategies.

CONCLUSION

Psoriasis and PsA are chronic immune-mediated diseases with high rates of cardiovascular and other comorbidities. Recent insights into the underlying pathophysiology of these diseases have revealed novel therapeutic targets. The diseases are underrecognized and undertreated in current clinical practice. Recognizing the true burdens of psoriasis and PsA and their common comorbidities is the first step to improving the prognosis for affected patients.

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