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Psoriatic arthritis: State of the art review

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Abstract

Psoriatic arthritis (PsA) accounts for around 20% of referrals to the early arthritis clinic and presents a significant diagnostic and management challenge. Early diagnosis is important to prevent long term functional disability and to ensure optimal management of arthritis and key comorbidities. From the rheumatologist's perspective, the differential diagnosis includes rheumatoid arthritis, gout and other inflammatory arthritis's. Once diagnosed, it is essential to assess the disease fully, including arthritis, enthesitis, dactylitis, skin/nail disease and axial involvement. Using this information, appropriate treatment can be planned using therapies that are effective at treating the relevant domains of disease. Despite poor data, traditional disease-modifying anti-rheumatic drugs are commonly used and have been effective in observational studies. Following tumour necrosis factor inhibitors, which have proven excellent efficacy in multiple domains of PsA, new biologics are available or in development and will improve treatment options for people with refractory PsA

Keywords: Skin Diseases; Joint pain diagnosis; Psoriatic arthritis and treatment

1. Introduction

In 1964, psoriatic arthritis (PsA) was recognised as a separate disease by the American Rheumatism Association (now the American College of Rheumatology), and is now included as a member of the spondyloarthropathy spectrum.

- PsA was initially defined by Moll and Wright as 'an inflammatory arthritis in the presence of psoriasis with a usual absence of rheumatoid factor.
- But newer more robust classification criteria are discussed in this article.

Psoriatic arthritis (PsA) is a chronic inflammatory condition that affects the joints and entheses, or where tendons and ligaments attach to bones. It's often linked with psoriasis, a skin disease that causes red, scaly rashes and thick fingernails. [5,11,13,32]

2. Psoriatic Arthritis

- A seronegative oligoarthritic found in patients with psoriasis
- Is a chronic disease characterized by a form of inflammation of the skin (psoriasis) and joints (inflammatory arthritis).
- 15%-25% of people with psoriasis also develop inflammation of joints (psoriatic arthritis).[2,3]

2.1. Causes

- An overactive immune system that creates inflammation

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- Is currently unknown
- A combination of:
- Genetic factors: HLA-B27 is found in more than 50% of PsA patients
- Immune factors: Stressors or changes in the immune system may affect the development or progression of the disease
- environmental factors.[34]

2.2. Risk Factors

- The major risk factor is having a family member with psoriasis 40%
- About 15% of people with psoriasis will develop psoriatic arthritis
- Equally common in men and women.
- Family history: Many people with psoriatic arthritis have a parent or sibling with the disease.
- Psoriasis: Having psoriasis is the biggest risk factor for developing psoriatic arthritis. Up to 30% of people with psoriasis also have psoriatic arthritis.
- Age: Psoriatic arthritis can develop at any age, but it's most common in adults between 30 and 55.
- Obesity: Being overweight can lead to more severe psoriatic arthritis and make some medicines less effective. Extra weight can also cause more inflammation and put pressure on joints and the spine.
- Alcohol: A 2020 study found that people who drink up to three alcoholic drinks a day are 57% more likely to develop psoriatic arthritis. Alcohol can promote joint inflammation, which can worsen symptoms.
- Smoking: Smoking can increase the risk of developing psoriasis and make the disease worse. People who smoke may also not respond as well to psoriatic arthritis medication.
- Environmental factors: Infections, trauma, and stress can trigger psoriatic arthritis in people who are genetically susceptible. Skin damage from sunburn, cuts, or scrapes can also cause inflammation that leads to symptoms.[6,9]

2.3. Symptoms And Sign

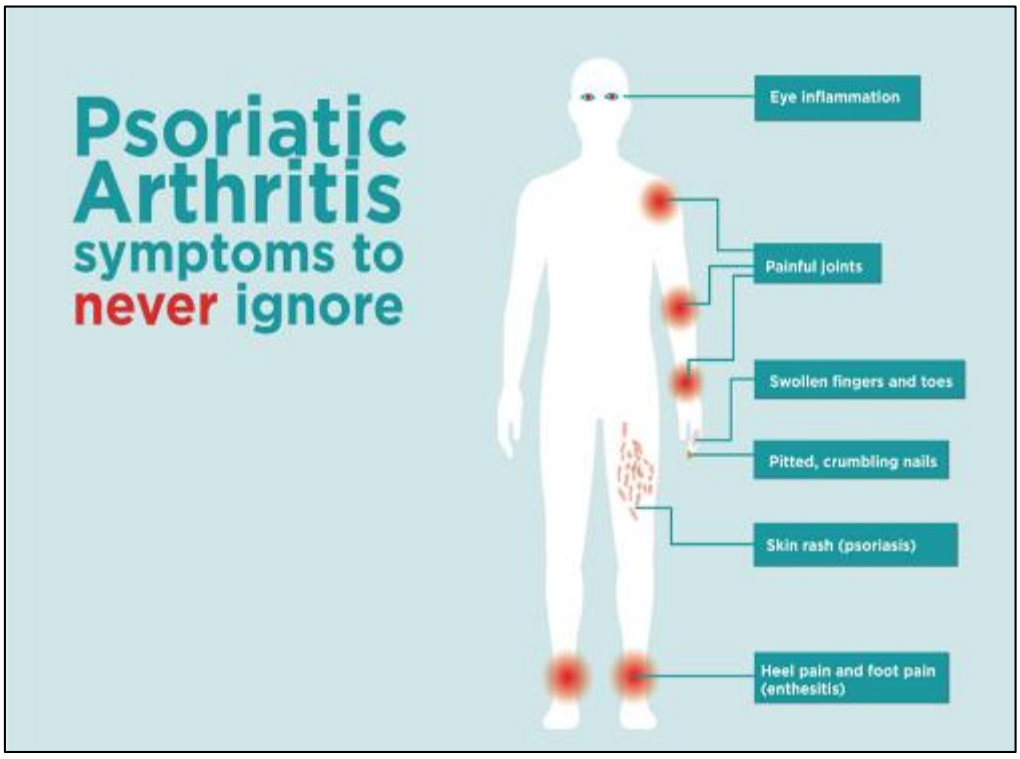

Figure 1 Symptoms And Sign

- Swollen, painful, hot, red joints-frequently in the knees, ankles, and feet
- Swollen fingers or toes that appear like "sausages"
- Joint stiffness that is worse in the mornings
- Pitted nails, or nails separating from the nail bed

- Lower back pain
- inflammation of the tendons.[14,15,21,24,25,28,30]

2.4. Types of Psoriatic Arthritis

2.4.1. Symmetric Psoriatic Arthritis

- Affects the same joints on both sides of the body.
- Usually in symmetrical pairs, such as both knees or both wrists.
- It is considered similar to rheumatoid arthritis, and symptoms can range from mild to disabling.
- Symmetric psoriatic arthritis is an autoimmune condition that affects the joints on both sides of the body at the same time. Symptoms include joint pain and swelling. Treatment aims to slow progression and maintain joint function. Options include medications, lifestyle modifications, and possibly surgery.
- Symmetrical polyarthritis affects joints on both sides of your body equally both of your knees, for example. Asymmetrical polyarthritis affects joints only on one side or joints that don't match you might have asymmetrical polyarthritis if an uneven number of joints is affected.
- Instead of focusing on endothelial cells, the symmetry of psoriasis can be explained by considering the nervous system, with special emphasis on the neuropeptides, particularly substance.
- The asymmetric oligoarticular type of psoriatic arthritis involves different joints on each side of the body, while the symmetric polyarthritis form affects.

2.4.2. Asymmetric Psoriatic Arthritis

- Can affect any joint, but usually not in symmetrical pairs on both sides of the body as in symmetric psoriatic arthritis.
- It often affects fingers and toes giving them a "sausage-like" appearance.
- Usually mild, but can affect some people more severely.
- Asymmetric psoriatic arthritis (PsA) is a type of arthritis that affects different joints on each side of the body. It's usually mild and affects fewer than five joints at a time. Symptoms include: Pain, swelling, and stiffness in the joints, Red and scaly patches of skin, Difficulty moving or flexing joints, Stiff joints in the morning
- Asymmetric PsA commonly affects the fingers and toes, and sometimes larger joints like the knee. The fingers and toes may develop a "sausage" appearance due to inflammation of the flexor tendon and synovium.
- Treatments for PsA include: Over-the-counter anti-inflammatory medicine, Cold or heat therapy, Corticosteroids, Disease-modifying antirheumatic drugs (DMARDs), and Physical or occupational therapy.
- PsA progresses differently for each person, and can worsen if not treated properly. Signs of worsening PsA include: More frequent flare-ups, Significant loss of joint mobility, Bone erosion, and Bone spurs.
- A doctor can diagnose PsA by asking about symptoms, checking for pain, tenderness, swelling, or warmth, and performing imaging and blood tests.

2.4.3. Distal Interphalangeal Predominant (DIP)

- Is often confused with osteoarthritis
- It involves the distal joints in the fingers and toes (the small joints closest to the nail) and may result in changes to the nails.
- Distal interphalangeal predominant psoriatic arthritis (DIP PsA) is a type of psoriatic arthritis that primarily affects the joints closest to the tips of the fingers and toes. It's the most common type of psoriatic arthritis that affects the fingernails and toenails.

Symptoms

- Joints: Inflammation of the distal joints, which are the joints closest to the nail beds
- Nails: Nail changes like pitting, ridges, crumbling, or separation from the nail
- Swelling: Swelling that usually affects the entire finger or toe
- Asymmetry: Swelling is usually asymmetric, meaning it affects only one side of the body

Other types of psoriatic arthritis include:

- Symmetric polyarthritis: Affects the same joints on both sides of the body
- Asymmetric oligoarticular psoriatic arthritis: Affects two to four joints on both sides of the body
- Spondylitis: Causes inflammation in the joints between the vertebrae in your spine

- Arthritis mutilans: The rarest form of psoriatic arthritis, which causes severe inflammation that can lead to bone loss
- While there's no cure for psoriatic arthritis, treatments can help control inflammation and skin involvement. Treatments include: Prescription medications, Physical therapy, Hot and cold therapy, Occupational therapy, and Exercise.
- The distal interphalangeal predominant type affects mainly the ends of the fingers and toes. The distal interphalangeal joints are those closest to the nails. Nail changes are especially frequent with this form of psoriatic arthritis.

2.4.4. Spondylitis

- Spondylitis is inflammation of the spinal column
- It may cause stiffness in the
  - Neck
  - Lower back
  - Spinal sacroiliac region (pelvic area)
- This can make moving around difficult.
- Psoriatic spondylitis is a type of psoriatic arthritis that affects the spine and joints in the pelvis. It's a variant of spondylarthritis, which is a group of inflammatory rheumatic diseases that can affect the joints and spine.
- Early diagnosis is important to reduce joint damage. Treatments can help avoid other conditions that can happen due to inflammation in the body.
- Psoriatic spondylitis is the medical term for a type of psoriatic arthritis that affects the spine and the joints in the pelvis. The symptoms may develop anywhere between the pelvis and the neck. People with psoriatic spondylitis may experience pain, inflammation, and stiffness in their neck and lower back.
- Ankylosing spondylitis is a type of arthritis that causes inflammation in the joints and ligaments of the spine. It may also affect peripheral joints like the knees, ankles, and hips. Normally, the joints and ligaments in the spine help us move and bend.
- There is no single definitive test for psoriatic spondylitis, and a diagnosis requires clinical expertise. Other conditions, like osteoarthritis, gout, and reactive arthritis, can mimic psoriatic spondylitis.
- Symptoms of psoriatic spondylitis include: Pain and stiffness that's worse in the morning or after periods of inactivity, Fatigue, and Worsening symptoms over time.

2.4.5. Arthritis Mutilans

- Arthritis mutilans is the least common form of psoriatic arthritis.
- The most severe, causing degeneration and deformity.
- Usually the small joints in the fingers and toes closest to the nail are involved but it can also affect the neck and lower back.
- Psoriatic arthritis mutilans is a rare, painful, and destructive form of psoriatic arthritis that affects the hands and feet.
- Symptoms include: Joint damage, Deformities, Other symptoms.
- Arthritis mutilans can be caused by genetic, environmental, and physical trauma factors. It typically affects people aged 40 to 50, but can occur at other ages.
- Treatments for psoriatic arthritis include: Anti-inflammatory medicine like NSAIDs or acetaminophen, Cold or heat therapy, Corticosteroids, Disease-modifying antirheumatic drugs (DMARDs), and Physical or occupational therapy.
- Early diagnosis and access to disease-modifying antirheumatic drugs can help prevent severe deformities.[7,26,31,32,33,34,35]

Diagnosis

- There is not one definitive test to diagnose psoriatic arthritis.
- Diagnosed by a combination of clinical findings.
  - Personal medical history and family history of psoriasis or psoriatic arthritis
  - Performs a physical examination of your joints.
  - X-rays may be done to detect changes in cartilage or bone injury,
  - Blood tests may include sedimentation rate to detect inflammation

Rheumatoid factor to exclude rheumatoid arthritis

- HLA-B27, found in more than 50% of PSA.
- Arthrocentesis (draining fluid from a joint).
- The presence of inflammatory arthritis in a patient with past or current psoriasis is the basis of diagnosis of PsA.
- However, in about 10% to 20% of patients, there is no history of obvious skin involvement by psoriasis.
- In these patients, one should search diligently for psoriasis at hidden sites such as the natal cleft, behind the ear, in the umbilicus, and on the scalp, and for nail changes like nail pitting, onycholysis and total nail dystrophy.
- Various diagnostic criteria have been proposed for PsA including the widely used Moll and Wright criteria.[7,13,32]

This Criteria Necessitates The Presence Of

- Psoriasis vulgaris
- A negative serology for rheumatoid arthritis (RA)
- Clinical features suggestive of inflammatory arthritis in one or more of the following patterns:
  - Distal interphalangeal joint disease
  - Asymmetric, oligoarticular (< 5 joints involved)
  - Symmetric, polyarticular "rheumatoid arthritis-like",
  - Mainly spondylitis (axial involvement)
  - Destructive arthritis (arthritis mutilans).

Several other diagnostic criteria have been proposed, including those by Bennett, Vasey and Espinoza, McGonagle (Modified criteria), Fournie and the European Spondyloarthropathy Study Group (Modified criteria)

The classification criteria for psoriatic arthritis (CASPAR) have been recently described.[4,13]

Treatment

Figure 2 Treatment of PsA and RA

- Combination of Anti-inflammatory medications (NSAIDs)
- Regular exercise, either with a physical therapist or at home.
- Warm-up stretching or applying heat to muscles before exercise, and ice after
- exercise can decrease soreness in the joints.
- If NSAIDs are not sufficient,
- methotrexate (Rheumatrex, Trexall),
- corticosteroids
- antimalarial medications may be prescribed.
- Patients may need to use devices to protect the joints, and surgery may be indicated in some cases.
- Treatment consists of supportive care to manage symptoms

- Treatment may include medication to reduce inflammation, steroid injections, biologics, and joint eplacement surgery.
  - Self-care

    Warm compress, Ice packs, Ultraviolet light therapy and PUVA

  - Medications

    Nonsteroidal anti-inflammatory drug, Anti-inflammatory and Immunosuppressive drug

  - Surgery

    Joint replacement

- The most common treatments for psoriatic arthritis include:
- Over-the-counter anti-inflammatory medicine like NSAIDs or acetaminophen.
- Cold therapy or heat therapy.
- Corticosteroids.
- Disease-modifying antirheumatic drugs (DMARDs).
- Physical therapy or occupational therapy.[1,6,10,12,16,18,22,23]

3. Conclusions

Untreated PsA leads to significant morbidity and mortality. GRAPPA has identified screening tools, which dermatologists can use to diagnose PsA early, an important step towards proper treatment. The treatment protocol can be individualized once the disease extent and severity have been staged. Biologic agents have been impressive in the management of severe PsA. However, patient selection and screening for latent tuberculosis are both important. Combined management by the dermatologist and rheumatologist is required for better patient care. PsA is a common, disabling and frequently undiagnosed arthropathy for which effective treatments are available. Early detection and treatment are likely to improve the outcome. For assessment and therapy, it should be appreciated that this is a heterogeneous disease best managed with a multispecialty and multidisciplinary team. The era of targeted biologic drugs has transformed the treatment landscape for this disease but more research is required on different treatment strategies

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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