Psoriatic Arthritis
Current Guidelines

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Learning Objectives

At the conclusion of this lecture, participants should be able to:

• Define Psoriatic Arthritis and briefly describe the pathogenesis.

• Implement the ACR Diagnostic Guidelines for Psoriatic Arthritis.

• Discuss the differential diagnosis and diagnostic approach to a patient with suspected Psoriatic Arthritis.

• Develop a strategy to manage patients with Psoriatic Arthritis.
Potential Conflicts of Interest: None

Sponsorship: None

No Relevant Financial Relationships with Commercial Interests
Example case

Presentation – 40-year-old women presents with swelling of the distal joints of hands. She states that symptoms have been intermittent for the past 6 months however have gotten worse over the past several weeks with associated morning stiffness lasting approximately one hour.
Example case

Past Medical History & Social History – History of Plantar Fasciitis left foot ~ 4 months ago.

Family History – Significant for mother with history of psoriasis

ROS - Denies rash, but notes “dandruff x 3 months”
Example case (continued)

Physical Examination

• Cutaneous:
  • Right 4th and 5th fingernails – isolated “pitting” with onycholysis
  • Scaling plaque right occiput
• Eyes – no inflammation
• Peripheral arthicular:
  • Pain and swelling
    • 1st, 2nd & 4th DIP joints bilaterally

Labwork

• ANA, RF, and ACPA are negative
• HLA-B27 is positive
Example case (continued)

**Imaging**

- Pencil-in-cup abnormality in the distal interphalangeal (DIP) joints of the first and second fingers (short arrows), plus early changes in the DIP joint of the fourth finger.
The most likely diagnosis is...

Psoriatic arthritis (PsA)
Overview – Definition

• Chronic progressive, inflammatory disorder of joints and skin
  • Characterized by osteolysis and bony proliferation
• Classified as HLA – B27 associated spondyloarthropathy
• Can range from mild nondestructive disease to a severely rapid and destructive arthropathy
• Usually Rheumatoid Factor negative
• Historically, considered to be a variant of RA;
  • *Classification changed due to a different pathogenesis*
Overview – Definition

• Prevalence:
  • Psoriasis: 1.2%
  • Polyarthritis with psoriasis: 5 – 50% (most agree is 5 – 7%)
  • Axial involvement: 2%

• Genetic predisposition
  • 1st degree relatives may be 50x more likely to develop arthritis

• Gender: M=F

• Age:
  • 35 – 50 yr
  • Juvenile psoriatic arthritis 9 – 12
Place within rheumatologic hierarchy

Seronegative Spondyloarthropathy

- Reactive Arthritides and Reiter’s Syndrome
- Arthritis Associated with Psoriasis *
- Ankylosing Spondylitis
- Rheumatic Manifestations of Gastrointestinal and Hepatobiliary Diseases
A glimpse at pathogenesis...

• Understood that combination of genetic and environmental factors may contribute
• Family history key!!
  • 40 percent of patients with PsA will have a first-degree relative with the condition
• Appears to be relationship between PsA and HLA (human leukocyte antigens) - unclear
• Immunologically, the early phase of disease may be mediated by innate and tissue-specific factors
A glimpse at pathogenesis...

- **Environmental factors**
  - Exposure to certain infections may contribute to the development of psoriatic arthritis.
  - Possible link between streptococcal infection and the development of psoriasis and psoriatic arthritis?
  - Occurs more commonly in people infected with the human immunodeficiency virus (HIV) than in the general population.

- **Trauma – Koebner Phenomenon”**
  - Frequently appears at sites where there is skin trauma.
  - Some patients develop arthritis in an injured joint.
Question...

Besides skin, soft tissue, and joints, what other organ or organ system can often be affected in someone with PsA?

A. The ocular system
B. The vestibular and hearing systems
C. GI tract
D. Heart valves
Signs and Symptoms

• Morning stiffness >30 min in 50% of patients

• Ridging, pitting of nails, onycholysis
  • Up to 90% of patients vs. nail changes in only 40% of psoriasis cases

• May present with less joint tenderness than is seen in RA

• Dactylitis noted in >40% of patients

• Conjunctivitis, iritis, or uveitis in 7–33% of cases;

• Distal extremity swelling with pitting edema reported in 20% of patients as the first isolated manifestation of PsA
Categories of symptoms

Primary manifestations can be subdivided into several major categories:

- Joint and periarticular
- Skin and Soft Tissues
- Ocular and other symptoms
Joint involvement patterns

Polyarthritis - Can present in number patterns

• Distal arthritis *
• Arthritis mutilans *
• Asymmetric oligoarthritis
• Symmetric polyarthritis
  • Difficult to distinguish from RA
• Spondyloarthritis

* most specific for PsA
Periarticular involvement

Similar to other spondyloarthropathies

- Tenosynovitis
  - Especially the flexor tendons of the hand and extensor carpi ulnaris

- Enthesitis
  - Achilles tendinitis may be more common in those with psoriasis
Periarticular involvement - Dactylitis

- Diffuse swelling of a digit may be acute, with painful inflammatory changes, or chronic wherein the digit remains swollen despite the disappearance of acute inflammation\(^1\)

- Also referred to as “sausage digit”

- Recognized as one of the cardinal features of PsA, occurring in up to 40% of patients

- Feet most commonly affected

- Dactylitis involved digits show more radiographic damage
Skin and soft tissue lesions

Skin exam is ESSENTIAL in all patients presenting with Inflammatory Joint Pain

- PsA occurs in up to 30% of patients with known psoriasis
  - 60 – 70%: Skin psoriasis first
  - 15%: Psoriatic arthritis first
  - 15%: Skin and arthritis diagnosed at same time
- No established relationship between plaque severity and arthritic severity
Ocular/Other symptoms

• Most commonly uveitis or conjunctivitis
• Pitting edema may be an initial presentation of the disease
• Lymphatic obstruction and chronic lymphedema is another rare feature
Question...

What are classic, radiographic findings in psoriatic arthritis?

A. Ball-in-cup deformity
B. Pencil-in-cup deformity
C. “Rat bite” deformity
D. Periarticular Osteopenia
Imaging findings
Laboratory findings

NON-SPECIFIC!

- RF is present in 10% cases
- ANA (low titer) in 50% cases
- Acute phase reactants (ESR, white count) elevated ~ 40%
  of cases
- HLA-B27 positive in 60% of cases
RECAP

**Clinical**
- Psoriasis of skin and nails
- Peripheral arthritis
- Distal interphalangeal (DIP) involvement
- Dactylitis
- Enthesopathy

**Laboratory**
- Rheumatoid factor (RF) & Anti-citrullinated protein antibodies (ACPA) negative*
- Elevated Acute Phase**

**Radiographic**
- Erosions and resorptions
- Joint space narrowing or involvement of entheseal sites
- New bone growth at the enthesis
- Syndesmophytes***
- Sacroiliitis***
CASPAR Criteria

Classified as having PsA if a total of at least three points is accumulated from the presence of the following list of features (each of which is assigned a certain number of points):

- Evidence of psoriasis
  - Current – 2
  - History of – 1
  - Family history of – 1
- Psoriatic nail dystrophy (onycholysis, pitting, hyperkeratosis) - 1
- Negative rheumatoid factor - 1
- Dactylitis, either current or history of... - 1
- Radiological evidence of juxta-articular new bone formation - 1

91.4%, specificity of 98.7%.
### Table. The CASPAR classification criteria for PsA

To be classified as having PsA, a patient must have inflammatory articular disease (joint, spine, enthesal) with ≥ 3 of the following 5 points:

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Description</th>
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| 1. Evidence of psoriasis (one of a, b, c):  
(a) Current psoriasis<sup>a</sup> | Psoriatic skin or scalp disease currently present, as judged by a rheumatologist or a dermatologist |
| (b) Personal history of psoriasis | A history of psoriasis obtained from patient or family physician, dermatologist, rheumatologist, or other qualified health care professional |
| (c) Family history of psoriasis | A history of psoriasis in a first- or second-degree relative by patient report |
| 2. Psoriatic nail dystrophy | Typical psoriatic nail dystrophy, including onycholysis, pitting, and hyperkeratosis observed on current physical examination |
| 3. Negative test result for RF | By any method except latex but preferably by ELISA or nephelometry, according to the local laboratory reference range |
| 4. Dactylitis (one of a, b):  
(a) Current | Swelling of an entire digit |
| (b) History | A history of dactylitis recorded by a rheumatologist |
| 5. Radiological evidence of juxta-articular new bone formation | Ill-defined ossification near joint margins (excluding osteophyte formation) on plain x-ray films of hand or foot |

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<sup>a</sup> Current psoriasis scores 2; all other items score 1.
40-year-old women presents with swelling of the distal joints of hands. She states that symptoms have been intermittent for the past 6 months however have gotten worse over the past several weeks with associated morning stiffness lasting approximately one hour.

- Evidence of psoriasis
  - current - 2
  - history of - 1
  - family history of – 1
- Psoriatic nail dystrophy (onycholysis, pitting, hyperkeratosis) 1
- Negative rheumatoid factor 1
- Dactylitis, either current or history of
- Radiological evidence of juxta-articular new bone formation 1
Differential diagnosis

• Rheumatoid arthritis
  • Some forms of PsA arthritis can appear like rheumatoid.
  • However....
    • DIP involvement and nail bed deformities help distinguish it
    • Fewer patients with PsA will be positive for RF

• Reactive arthritis
  • Asymmetric arthritis can occur in both.
  • However... preceding illness is not a clinical feature in PsA
Differential diagnosis

• Osteoarthritis
  • DIP involvement often in both diseases.
  • However...
    • myriad symptoms of PsA (enthesitis, dactylitis, nail changes) do not occur in OA,
    • age of onset is typically earlier

• Ankylosing spondylitis
  • Difficult since some forms of PsA will involve spondylitis.
    • Major differentiating factors
      • Skin changes (if present)
      • Radiographic findings – PsA more oftens involve cervical vs. lumbar spine, and more likely have asymmetric/non-marginal syndesmophytes
Differential Diagnosis, continued

• Gout
  • Difficult because both can naturally occur at the same time, psoriasis CAN be associated with hyperuricemia.
    • Differential is in the details, with PsA showing unique symptoms (dactylitis, enthesitis)

• Arthritis of IBD
  • May exhibit similar patterns of arthritis
    • Differentiated by clinical findings of each individual disease
Treatment modalities – First Line

NSAIDS

• Non-selective and selective COX-2 inhibitors
  • Goal - control inflammation & reduce any spondylitis stiffness
  • Enteric coated aspirin
  • Ibuprofen
  • Slow-release indomethacin
Second-line therapies

Poor treatment response to NSAIDs, and/or in Severe Disease

• Methotrexate
  • 7.5 mg to 25 mg PO weekly can be given once a week,
    • parenteral administration for higher dosing

• Sulfasalazine – no longer commonly used, (dose needed for response often poorly tolerated
Second-line therapies

Poor treatment response to NSAIDs, and/or in Severe Disease

• Leflunomide – shown efficacy in 40%
  • Used in those with poor response to or intolerability of MTX

• Cyclosporine – efficacy in lower doses (2.5-5 mg/kg)

• Other therapies: IM gold compounds, antimalarials, azathioprine, retinoic acid, or UV light therapy

• Trials of azathioprine and UV light therapy promising
TNF inhibitors

Reserved for patients to conventional therapies

- Etanercept – approved for RA and PsA
  - 25 mg twice weekly
  - Fairly well tolerated
  - Those with skin manifestations benefit from higher doses
TNF inhibitors

Reserved for patients to conventional therapies

• Infliximab (the IMPACT and IMPACT-2 trials)
  • Response rates in controlled trials impressive, both in arthritic and skin manifestations
  • Benefits were maintained over the course of several years

• Adalimumab (the ADEPT trial)
  • Improved both arthritic and skin symptoms, and showed efficacy in those who had previously failed DMARDs
Treatment strategy and guidelines

1. Assessment of the severity of disease and recommendations for conservative treatment
   Change in weight or diet, assessment of CV risk factors

2. NSAID therapy for mild disease
   Enteric aspirin, ibuprofen for peripheral disease; longer-acting indomethacin for axial disease

3. Begin DMARD therapy if no improvement in arthritic symptoms
   Begin and titrate MTX and leflunomide to maximum appropriate therapy
Treatment strategy and guidelines

4. If not financially or medically contraindicated, begin TNF inhibitor therapy if no improvement
   - Etanercept, infliximab, adalimumab, and golimumab have been approved
   - If patient improves, monotherapy without MTX can be used, unlike in rheumatoid arthritis

5. If still no improvement on two kinds of TNF inhibitors, try ustekinumab, or experimental therapies
Treatment strategy and guidelines

New EULAR guidelines include the following changes:

- Active dactylitis or enthesitis without improvement on NSAIDs or local glucocorticoids should be tried on a TNF inhibitor due to lack of DMARD efficacy

- Similarly, patients with axial arthritis do not benefit from traditional DMARDs
Question...

Which is true regarding methotrexate treatment in psoriatic arthritis patients?

A. There tends to be less liver toxicity as compared to etanercept and other biologic DMARDs
B. People love taking it, and there is no stigma about it “being chemotherapy”
C. It tends to be more expensive, but highly effective as compared to other treatments
D. It can be discontinued if TNF inhibitor therapy is effective and remains effective
A patient presents with symptoms that cause you to suspect either rheumatoid arthritis or psoriatic arthritis; the rheumatoid factor is quite elevated. Can you safely conclude that this is rheumatoid arthritis?

A. I’m the healthcare practitioner here, and I say yes
B. No. The CASPAR guidelines say that’s possible in PsA
C. Yes. An elevated rheumatoid factor rules out PsA definitively
D. You can’t make that determination until you’ve tried treating it first
Oral glucocorticoids are not recommended in treatment, unlike other types of arthritis. For what reason?

A. Insurance companies in the U.S. refuse to cover them, and thus we’re stuck with DMARDs
B. It can exacerbate psoriasis and cause pustules, as well as interfere with therapy overall
C. It can exacerbate joint damage, especially in weight bearing locations
D. Nobody has actually thought of it yet - until NOW
Summary & Recommendations

• Form of inflammatory arthritis - may occur in up to 30 % of patients with psoriasis, although it is relatively uncommon in the general population.

• The arthritis may be peripheral, axial, or both.

• It can present as a symmetrical polyarthritis, an asymmetric oligoarthritis, arthritis of the distal interphalangeal (DIP) joints, as a destructive arthritis termed arthritis mutilans, or as a spondyloarthritis (SpA).

• Patterns often overlap!!
  • Enthesitis, dactylitis (sausage digits), and tenosynovitis can occur.
Summary and Recommendations

- Arthritis appears after the onset of skin lesions in the majority of patients.

- Arthritis precedes the skin disease in approximately 13 to 17% percent of patients, and skin lesions are present but have not been diagnosed in an additional 15 percent.
Summary and Recommendations

- Characteristic features of uncomplicated psoriasis may affect the nail bed in patients with PsA,
  - Nail pits and onycholysis.

- Nail lesions occur in 80 to 90% of patients with PsA.

- The severity of psoriatic nail involvement correlates closely with the extent and severity of both skin and joint disease and is more common in those with DIP joint arthritis,
Summary and Recommendations

- Laboratory findings in PsA are nonspecific
  - acute phase reactants are elevated in only about 40% of patients;
  - No laboratory findings characteristic of PsA that distinguish it from other forms of inflammatory arthritis.

- Radiographic changes
  - Exhibit a pattern usually not seen in other forms of inflammatory arthritis
    - Coexistence of erosive changes and new bone formation.
Summary and Recommendations

• Diagnosis can generally be made in a patient who has both psoriasis and an inflammatory arthritis in a pattern typical of PsA.

• Other forms of arthritis can occur in patients with psoriasis, and should be excluded as the cause of the patient’s syndrome.

• Certain clinical features may suggest PsA in the absence of psoriasis:
  • distal joint involvement
  • asymmetric distribution
  • nail lesions
  • dactylitis
  • family history
The cutaneous manifestations of psoriatic arthritis may be scant or non-existent and need to be looked for carefully on examination.

Nail pitting and dactylitis, while not specific, are highly suggestive of psoriatic arthritis.

The patterns of joint involvement in psoriatic arthritis are variable.
References


