Psoriatic Arthritis

A complex and severe disabling disease

Introduction to Psoriatic Arthritis (PsA)

- Chronic progressive, inflammatory disorder of the joints and skin[1]
  - Characterized by osteolysis and bony proliferation[1]
  - Clinical manifestations include dactylitis, enthesitis, osteoperiostitis, large joint oligoarthritis, arthritis mutilans, sacroiliitis, spondylitis, and distal interphalangeal arthritis[1]
- PsA is one of a group of disorders known as the spondyloarthropathies[2]
- Males and females are equally affected[3]
- PsA can range from mild nondestructive disease to a severely rapid and destructive arthropathy[3]
  - Usually Rheumatoid Factor negative[3]
- Radiographic damage can be noted in up to 47% of patients at a median interval of two years despite clinical improvement with standard DMARD therapy[4]

[1]Taylor WJ. *Curr Opin Rheumatol.* 2002;14:98–103.
[2]Mease P. *Curr Opin Rheumatol*. 2004;16:366–370.
[3]Brockbank J, et al. *Exp Opin Invest Drugs.* 2000;9:1511–1522.
[4]Kane D, et al. *Rheumatology.* 2003;42:1460–1468.

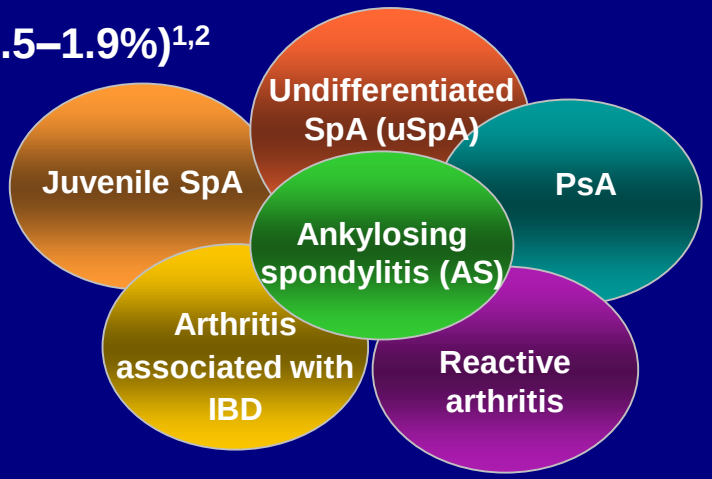
Spondyloarthritis, Psoriasis and PsA

Spondyloarthritis (SpA)

- The prevalence of SpA is comparable to that of RA (0.5–1.9%)[1,2]

Psoriasis (Pso)

- Psoriasis affects 2% of population
- 7% to 42% of patients with Pso will develop arthritis[3]



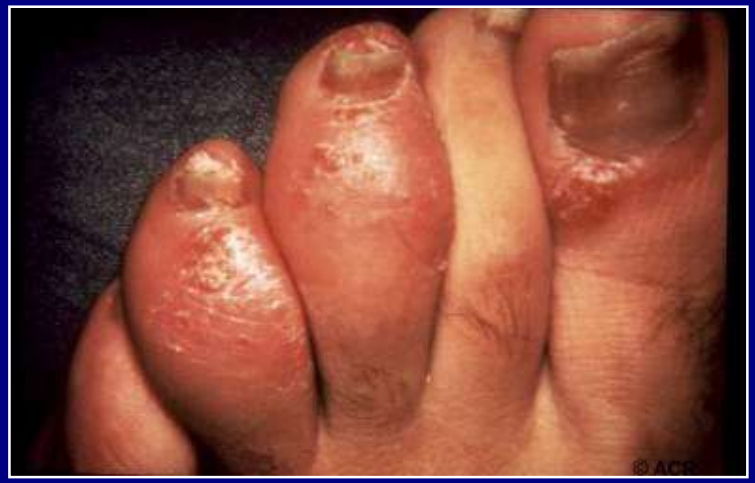
Psoriatic Arthritis

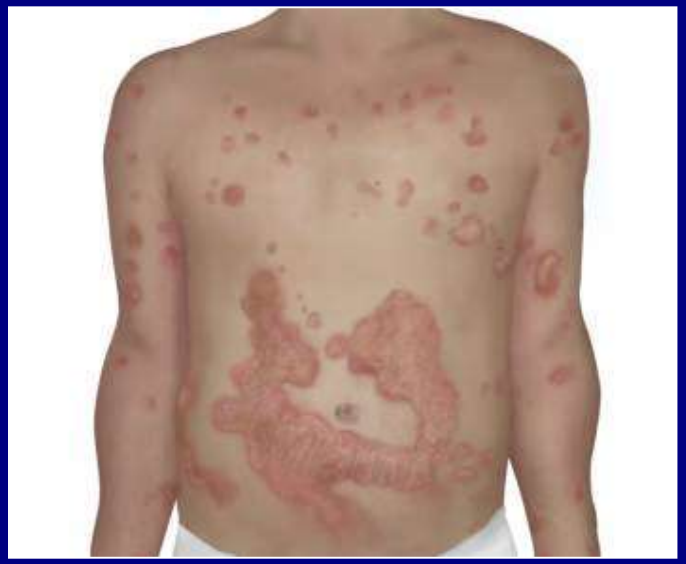
- A chronic and inflammatory arthritis in association with skin psoriasis[4]
- Usually rheumatoid factor (RF) negative and ACPA negative[5]
  - Distinct from RA
- Psoriatic Arthritis is classified as one of the subtypes of spondyloarthropathies
  - Characterized by synovitis, enthesitis, dactylitis, spondylitis, skin and nail psoriasis[4]

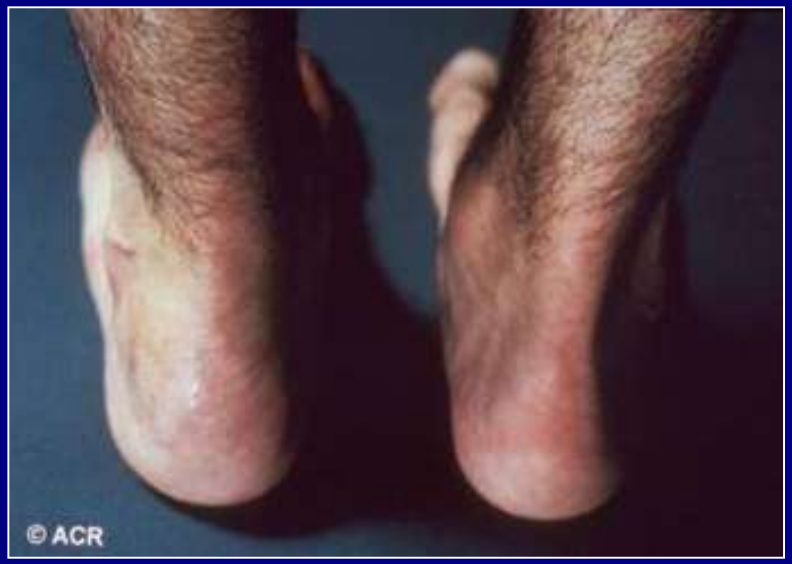
[1]Rudwaleit M et al. Ann Rheum Dis 2004;63:535-543; [2]Braun J et al. Scand J Rheumatol 2005;34:178-90;
[3] Fitzgerald "Psoriatic Arthritis" in Kelley's Textbook of Rheumatology, 2009;
[4]Mease et al. Ann Rheum Dis 2011;70(Suppl 1):i77–i84. doi:10.1136/ard.2010.140582;
[5]Pasquetti et al. Rheumatology 2009;48:315–325

RA: Rheumatoid arthritis

Psoriatic Arthritis







ACR Slide Collection on the Rheumatic Diseases; 3rd edition. 1994.
Data on file, Centocor, Inc.

Epidemiology of PsA

- Recent review undertaken to 2006[1,2]
  - Incidence
    - Europe+North America: 3 to 23.1 cases/10^5
    - Japan 0.1 case/10^5
  - Prevalence
    - Europe+North America 20 and 420 cases/10^5
    - Japan 1 case/10^5

- Population-based study/Minnesota (CASPAR criteria)[2,3]
  - Incidence
    - 7.2 cases/10^5 (men 9.1, female 5.4)
  - Prevalence
    - 158 cases/10^5

The prevalence of PsA is assumed to be larger than expected, since enthesitis associated with PsA can develop without symptoms or signs that are recognizable by patients themselves or the physicians[4]

[1] Alamos et al. J Rheumatol 2008;35:1354-8;
[2]Wilson F et al. J Rheumatol 2009;36:361-7;
[3]Editorial by Chaudran. J Rheumatol 2009;36:213-5;
[4]Takata et al. J Dermatol Sci. 2011 Nov;64(2):144-7

Signs and Symptoms

- Morning stiffness lasting >30 min in 50% of patients[1]
- Ridging, pitting of nails, onycholysis – up 90% of patients vs nail changes in only 40% of psoriasis cases[2,3]
- Patients may present with less joint tenderness than is usually seen in RA[1]
- Dactylitis may be noted in >40% of patients[2,4]
- Eye inflammation (conjunctivitis, iritis, or uveitis) — 7–33% of cases; uveitis shows a greater tendency to be bilateral and chronic when compared to AS[2]
- Distal extremity swelling with pitting edema has been reported in 20% of patients as the first isolated manifestation of PsA[5]

[1]Gladman DD. In: *Up To Date.* Available at: www.uptodate.com. Accessed December 3, 2004.
[2]Taurog JD. In: Harrison's Online *McGrawHill. Available at:* http://www3.accessmedicine.com/popup.aspx?aID=94996&print=yes. Accessed January 2,2005.
[3]Gladman DD. *Rheum Dis Clin N Amer.* 1998;24:829–844.
[4]Veale D, et al. *Br J Rheumatol*. 1994;33:133–38.
[5]Cantini F, et al. *Clin Exp Rheumatol.* 2001;19:291–296.

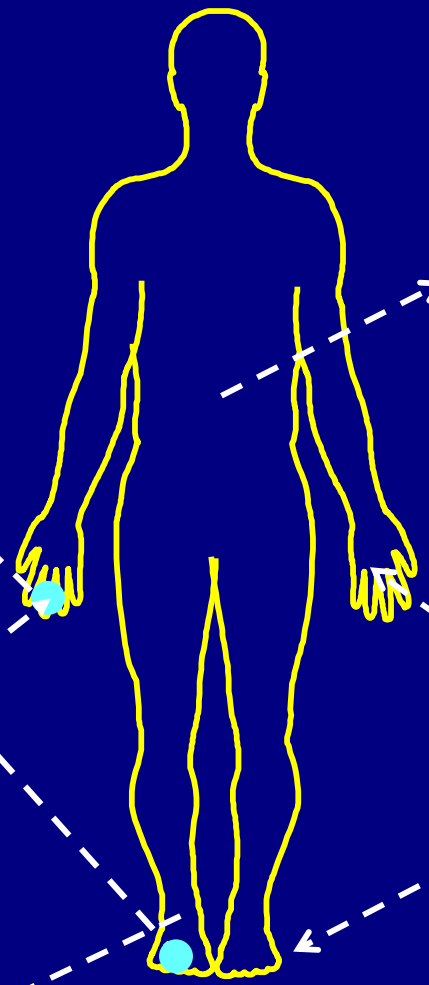
Main Features of PsA

Clinical	Laboratory	Radiographic
• Psoriasis of skin and nails	• Rheumatoid factor (RF) & Anti-citrullinated protein antibodies (ACPA) negative*	• Erosions and resorptions
• Peripheral arthritis	• Elevated Acute Phase**	• Joint space narrowing or involvement of entheseal sites
• Distal interphalangeal (DIP) involvement		• New bone growth at the enthesis
• Dactylitis		• Syndesmophytes***
• Enthesopathy		• Sacroiliitis***

*Low levels of RF and ACPA can be found in 5-16% of patients; **To a lesser degree than in RA
***Spinal disease occurs in 40-70% of PsA patients

Helliwell PS & Taylor WJ. Ann Rheum Dis 2005;64(2:ii)3-8
Fitzgerald "Psoriatic Arthritis" in Kelley's Textbook of Rheumatology, 2009

Main Features and Their Frequency



Back involvement (50%)[1]

DIP involvement (39%)[2]

In nearly 70% of patients, cutaneous lesions precede the onset of joint pain, in 20% arthropathy starts before skin manifestations, and in 10% both are concurrent. [6]

Skin Involvement

Nail psoriasis (80%)[4, 5]

Dactyilitis (48%)[3]

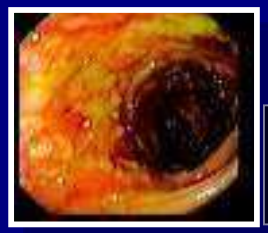
Enthesopathy (38%)[2]

DIP: Distal interphalangeal

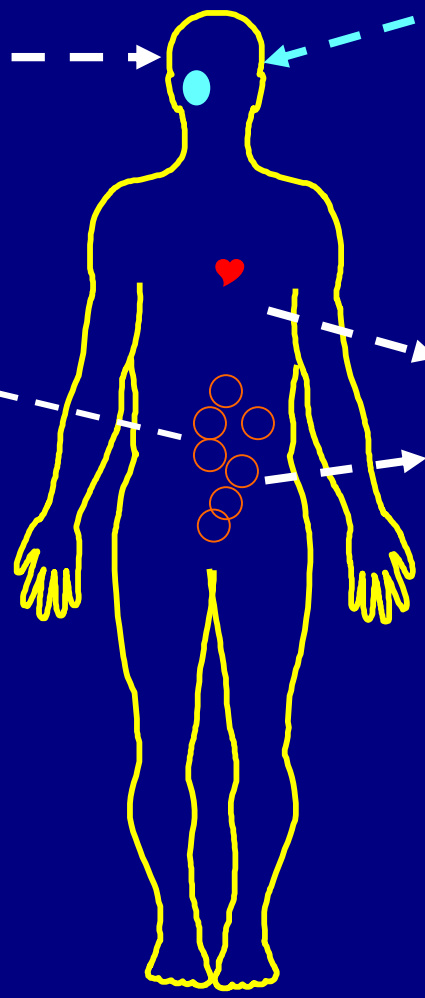
[1]Gladman D et al. Arth & Rheum 2007;56:840; [2] Kane. D et al. Rheum 2003;42:1460-1468
[3] Gladman D et al. Ann Rheum Dis 2005;64:188–190; [4]Lawry M. Dermatol Ther 2007;20:60-67
[5]Jiaravuthisan MM et al. JAAD 2007;57:1-27; [6]Yamamoto Eur J Dermatol 2011;21:660-6

Comorbidities in PsA Patients

Ocular inflammation[1]
(Iritis/Uveitis/ Episcleritis)



IBD[2]



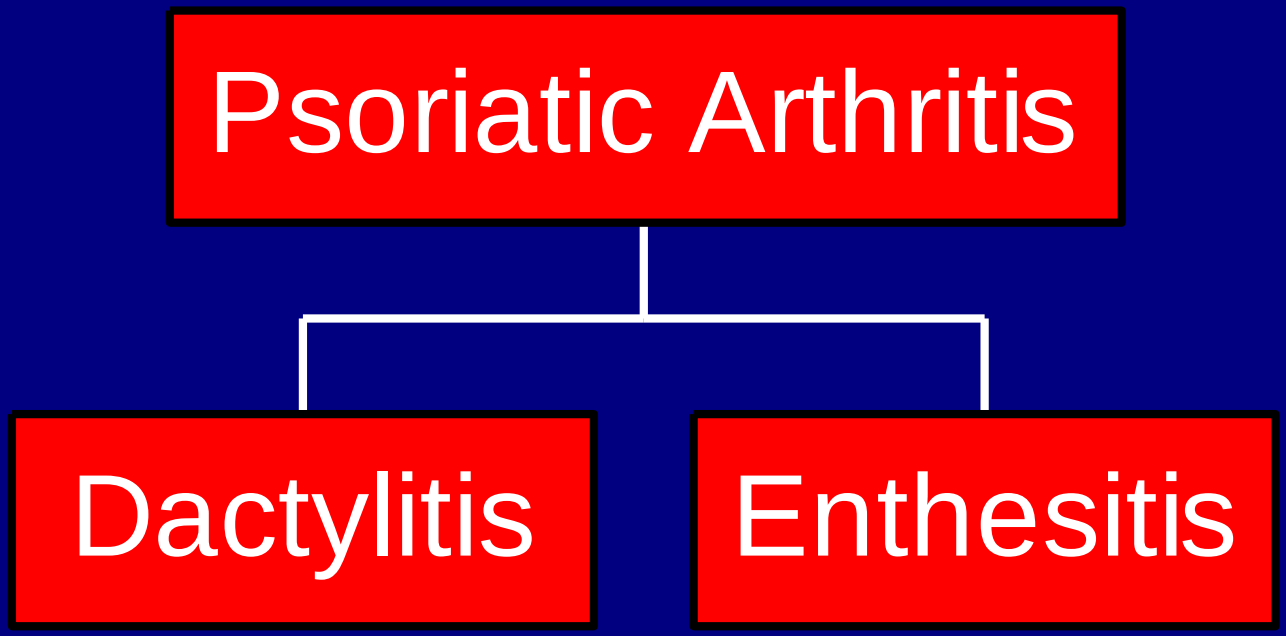
Pso patients[6-8]
- Psychosocial burden
- Reactive depression
- Higher suicidal ideation
- Alcoholism

Metabolic Syndrome[3-5]
- Hyperlipidemia
- Hypertension
- Insulin resistent
- Diabetes
- Obesity

⇒ Higher risk of Cardiovascular disease (CVD)

[1]Qieiro et al. Semin Arth Rheum 2002;31:264; [2]Scarpa et al. J Rheum 2000;27:1241; [3]Mallbris et al. Curr Rheum Rep 2006;8:355; [4]Neimann et al. J Am Acad Derm 2006;55:829; [5]Tam et al. 2008;47:718; [6]Kimball et al. Am J Clin Dermatol 2005;6:383-392; [7]Naldi et al. Br J Dermatol 1992;127:212-217; [8]Mrowietz U et al. Arch Dermatol Res 2006;298(7):309-319

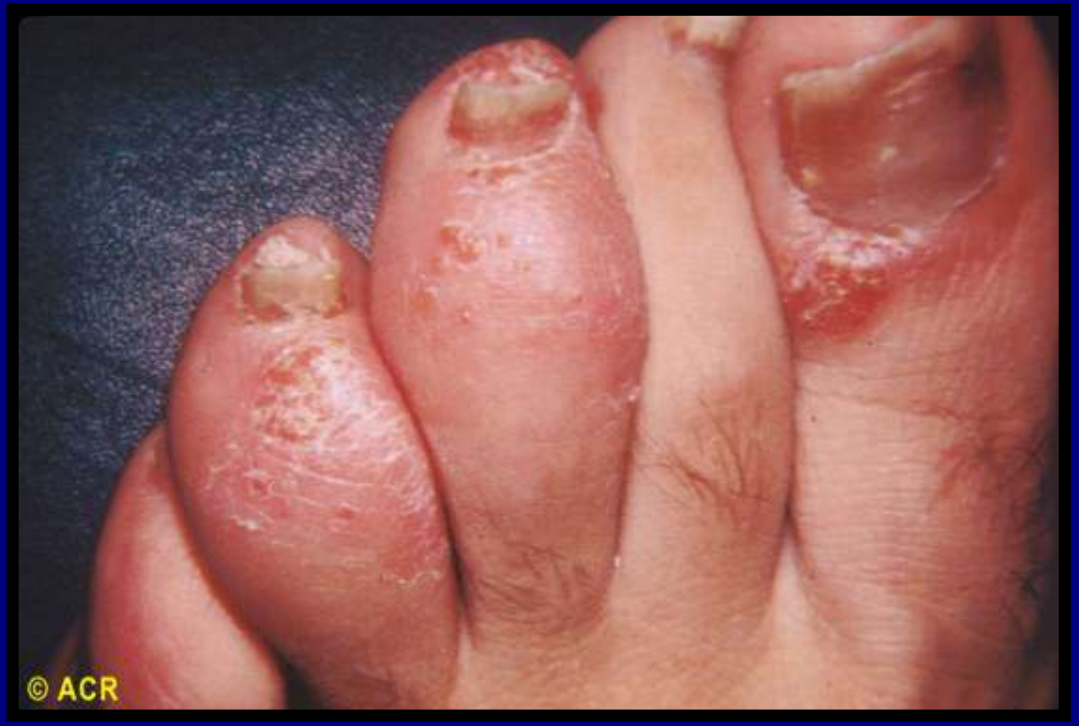
Hallmark Clinical Features in PsA



Ritchlin C. *J Rheumatol.* 2006;33:1435–1438.
Helliwell PS. *J Rheumatol*. 2006;33:1439–1441.

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"[1]
- Recognized as one of the cardinal features of PsA, occurring in up to 40% of patients[1,2]
- Feet most commonly affected[1]
- Dactylitis involved digits show more radiographic damage[1]

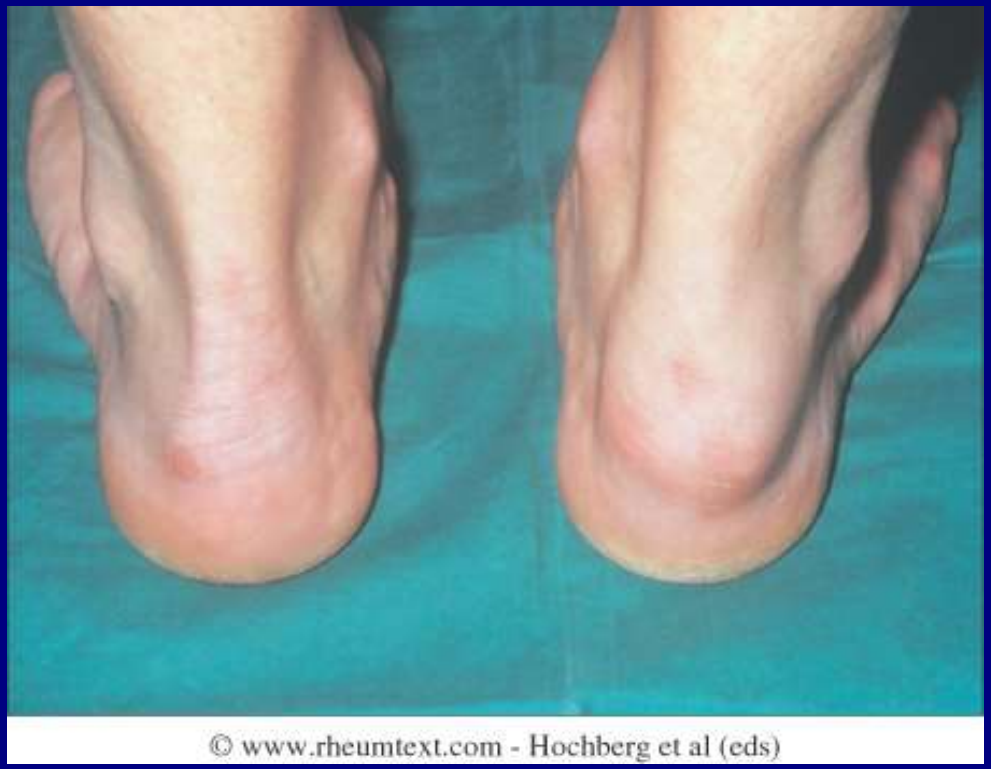


ACR Slide Collection on the Rheumatic Diseases; 3rd edition. 1994.

[1]Brockbank J, et al. *Ann Rheum Dis*. 2005;64:188–190.
[2]Veale D, et al. *Br J Rheumatol*. 1994;33:133–38.

Definition of Enthesitis

- Entheses are the regions at which a tendon, ligament, or joint capsule attaches to bone[1]
- Inflammation at the entheses is called enthesitis and is a hallmark feature of PsA[1,2]
- Pathogenesis of enthesitis has yet to be fully elucidated[2]
- Isolated peripheral enthesitis may be the only rheumatologic sign of PsA in a subset of patients[3]



[1]McGonagle D. *Ann Rheum Dis.* 2005;64(Suppl II):ii58–ii60.
[2]Anandarajah AP, et al. *Curr Opin Rheumatol.* 2004;16:338–343.
[3]Salvarani C. *J Rheumatol.* 1997;24:1106–1140.

Classification Criteria of PsA

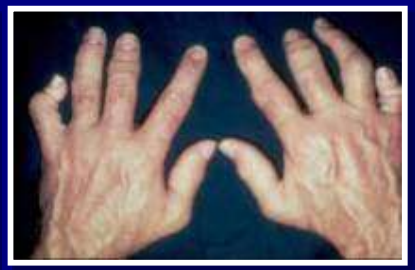
How to diagnose PsA?

Classical Description of PsA Using the Diagnostic Criteria of Moll and Wright

- **Including 5 clinical patterns:**
  - **Asymmetric mono-/oligoarthritis (~30% [range 12-70%])[1-4]**
  - **Symmetric polyarthritis (~45% [range 15-65%])[1-4]**
  - **Distal interphalangeal (DIP) joint involvement (~5%)[1]**
  - **Axial (spondylitis and Sacroiliitis) (HLA-B27) (~5%)[1,3]**
  - **Arthritis Mutilans (<5%)[1,3]**







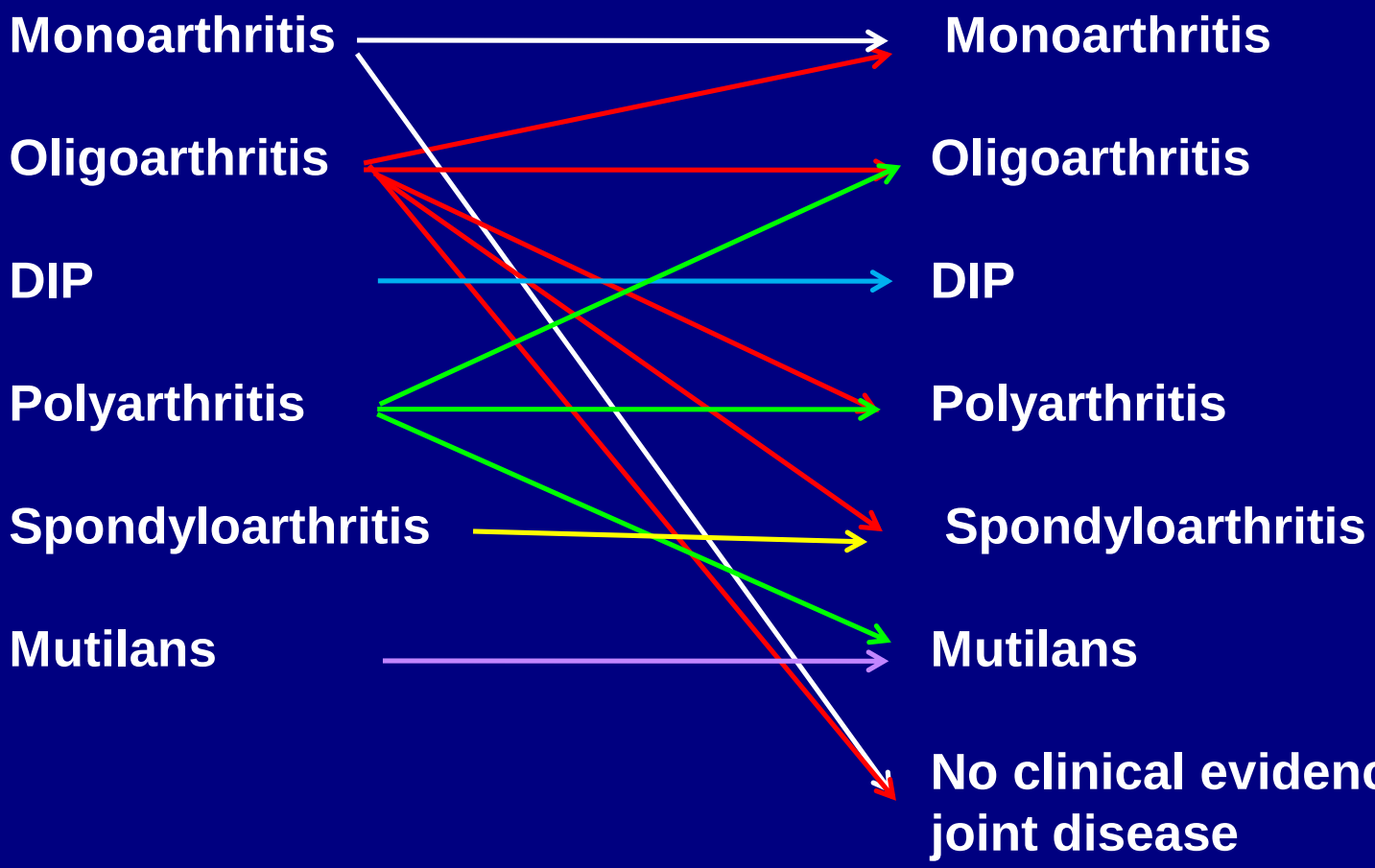
- **However patterns may change over time and are therefore not useful for classification [5]**

HLA: Human leucocytes antigen

References see notes

Patterns may Change Over Time and are Therefore not Useful for Classification

Clinical subgroups at baseline and follow-up:



McHugh et al. Rheum 2003;42:778-783

CASPAR Criteria for the Classification of PsA

- Inflammatory articular disease (joint, spine, or entheseal)
- With ≥3 points from following categories:
  - Psoriasis: current (2), history (1), family history (1)
  - Nail dystrophy (1)
  - Negative rheumatoid factor (1)
  - Dactylitis: current (1), history (1) recorded by a rheumatologist
  - Radiographs: (hand/foot) evidence of juxta-articular new bone formation
- Specificity 98.7%, Sensitivity 91.4%

Taylor et al. Arthritis & Rheum 2006;54: 2665-73

Spondyloarthritis and Classification Criteria

Spondyloarthropathies
Axial and Peripheral
AMOR criteria (1990)
ESSG criteria (1991)

Axial Spondyloarthritis
ASAS classification 2009

Peripheral Spondyloarthritis
ASAS classification 2010

Ankylosing spondylitis
Prototype of axial spondylitidis
Modified New York criteria 1984

Infliximab (IFX) and Golimumab (GLM) indications

Psoriatic arthritis
From Moll & Wright 1973 to CASPAR criteria 2006

ESSG: European Spondyloarthropathy Study Group
ASAS: Assessment of Spondyloarthritis International Society
CASPAR: Classification criteria for psoriatic arthritis

Sieper et al. Ann Rheum Dis 2009;68:ii1-ii44
Taylor et al. Arthritis & Rheum 2006;54:2665-73
Van der Heijde et al. Ann Rheum Dis 2011;70:905-8

Treatment of PsA

Outcomes measurements

Outcome Measure in PsA

Psoriatic Arthritis Response Criteria (PsARC)

- **Clinical assessment of joint improvement, no skin assessment**
- **Improvement in at least 2 of 4 criteria, one of which must be tender or swollen-joint score**
  - **Physician global assessment (> 1 unit)**
  - **Patient global assessment (> 1 unit)**
  - **Tender-joint score (> 30%)**
  - **Swollen-joint score (> 30%)**
- **No worsening in any criterion**

Clegg D.O. *et al. Arthritis Rheum* 1996;39:2013.