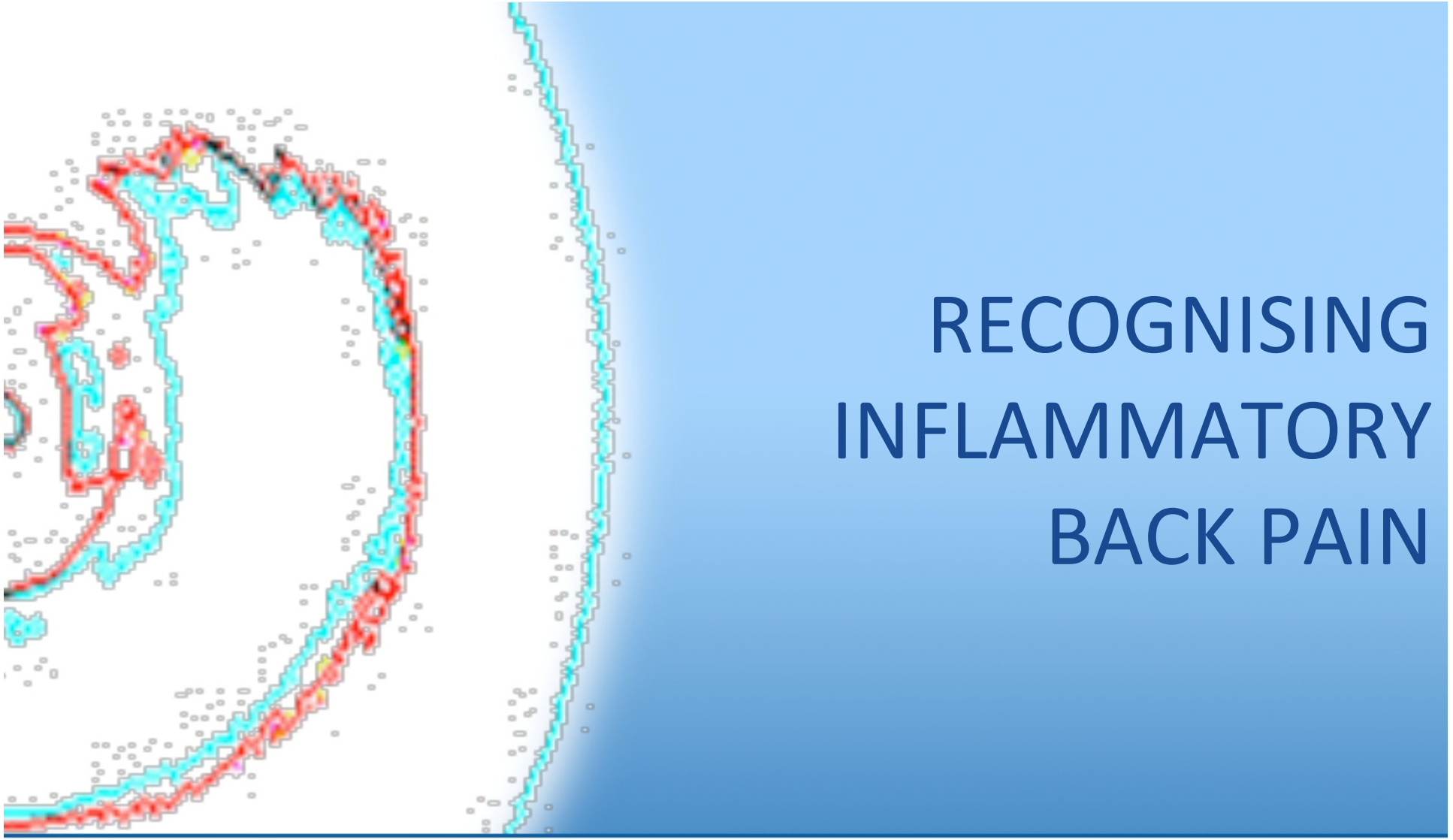

RECOGNISING INFLAMMATORY BACK PAIN

GIG CYMRU NHS WALES
Bwrdd Iechyd Aneurin Bevan Health Board

Pfizer

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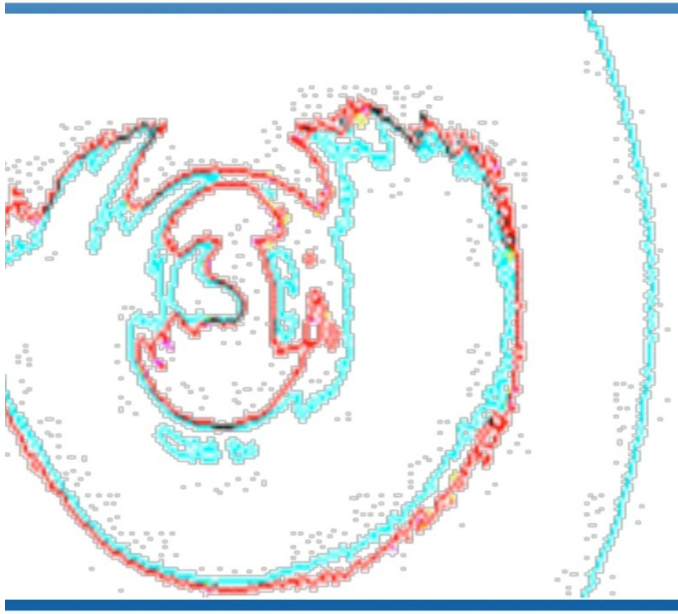
Contents



Inflammatory back pain: overview

Back pain: scope of the issue

- Back pain is common; 60-80% of UK population report back pain at some point in their life[1]
- One fifth to one quarter of all GP consultations are musculoskeletal related[2]
- Approximately 5% of patients with chronic back pain have ankylosing spondylitis[3]
- Differentiating chronic simple back pain from other more serious kinds of back pain is difficult, especially in a typical GP consultation period

1. Waddel, G *et al.* Occupational health guidelines for management of low back pain at work: evidence review. *Occup. Med* 2001;51(2):124-135
2. House of Commons. *Early identification and diagnosis of rheumatoid arthritis*. Available: http://www.publications.parliament.uk/pa/cm200910/cmselect/cmpubacc/46/4605.htm. Last accessed February 2011.
3. McKenna, F. Spondyloarthritis. *Reports on the Rheumatic Diseases* 2010;6(5):1-6

Common causes of low back pain (LBP)[1]

- **Mechanical**
  - Unknown cause, degenerative disc/joint disease, vertebral fracture, congenital deformity, spondylolysis
- **Neurogenic**
  - Herniated disc, spinal stenosis, osteophytic nerve root compression, infection (e.g. herpes zoster)
- **Non-mechanical spinal conditions**
  - Neoplastic disease, inflammatory diseases (e.g. spondyloarthritis), infection (e.g. osteomyelitis), Paget's disease
- **Referred visceral pain**
  - GI disease (e.g. IBD, pancreatitis), renal disease
- **Other**
  - Fibromyalgia, somatoform disorders

1. Cohen,S *et al*. Management of low back pain. *BMJ* 2008;337:a2718

Inflammatory back pain (IBP)

- IBP is an inflammatory disease of unknown cause[1A]
- IBP primarily affects the lower back, buttocks, structures of the spine and large peripheral joints[1B]
- Inflammatory back pain may lead to ankylosis [2]

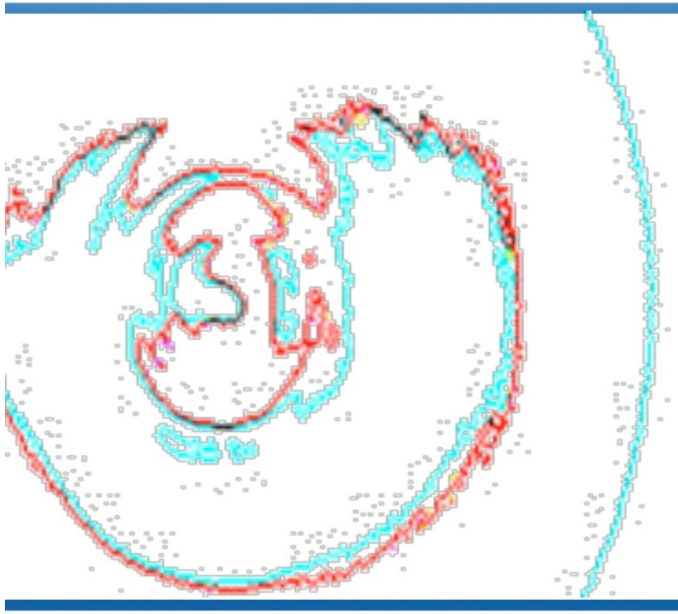
1. Braun, J *et al*. Clinical significance of inflammatory back pain for diagnosis and screening of patients with axial spondyloarthritis. *Ann Rheum Dis* 2010;69:1264-1268
2. Lories, R *et al*. Inhibition of osteoclasts does not prevent joint ankylosis in a mouse model of spondyloarthritis. *Rheum* 2008;47:605–608

IBP – relevant signs can include:[1]

- Age at onset of back pain <45 years (Peak age of onset 15 – 35yrs)
- Back pain lasting > 3 months (possibly intermittent)
- Night pain
- Early morning pain and stiffness lasting more than one hour
- Pain improves with exercise
- Tenderness/inflammation over SI joint(s) (often seen as alternating buttock pain)
- Insidious onset (often distinguishes from mechanical back pain)

Early diagnosis is key for IBP, as it is the main symptom of the spondyloarthopathies

1. Sieper, J *et al*. New criteria for inflammatory back pain in patients with chronic pain: a real patient exercise by experts from the assessment of spondylarthritis International Society (ASAS). *Ann Rheum Dis* 2009;68(6):784-8



Overview: spondylarthropathies

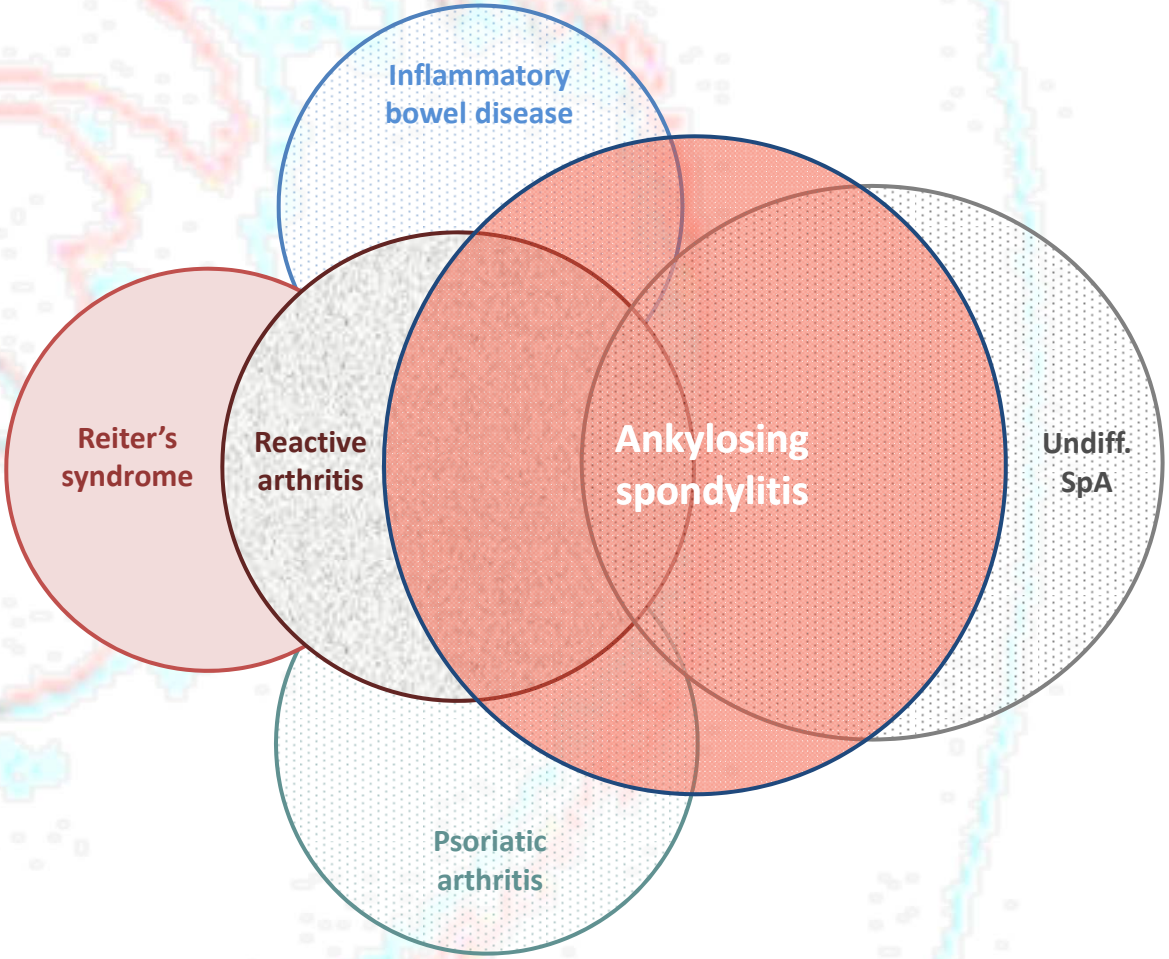
Spondyloarthropathies (SpA)

- A heterogenous group of immune-mediated inflammatory diseases[1A]
- Can be divided into two subgroups according to the predominant symptoms (though may overlap):[1B]
  - Axial SpA (spine)
  - Peripheral SpA (peripheral joints)
- SpA can result in abnormal bone formation with eventual ankylosis of the spine, resulting in substantial disability[2]
- Diseases belonging to this group share clinical and genetic characteristics, which distinguish them from rheumatoid arthritis[3]

1. Braun, J *et al*. Clinical significance of inflammatory back pain for diagnosis and screening of patients with axial spondyloarthritis. *Ann Rheum Dis* 2010;69:1264-1268
2. Colbert, RA. Classification of juvenile spondyloarthritis: enthesitis-related arthritis and beyond. *Nat Rev Rheumatol* 2010;6:477–485
3. Burgos-Vargas, R. From retrospective analysis of patients with undifferentiated spondyloarthritis (spa) to analysis of prospective cohorts and detection of axial and peripheral spa. *Rheum* 2010;37:6

JG3

Ankylosing spondylitis is the prototype axial SpA[1]



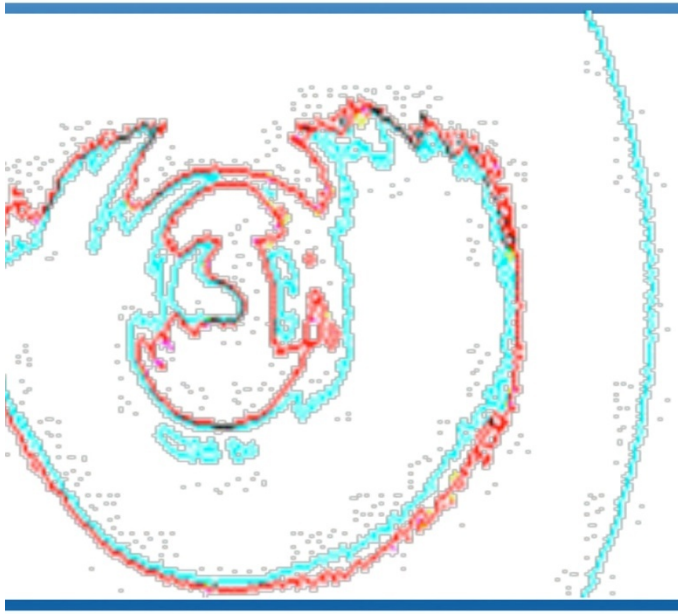
- Although each condition has its own characteristics, there is significant overlap between them and one can evolve into another[2,3]

1. Sieper, J *et al*. The Assessment of SpondyloArthritis International Society (ASA) handbook: a guide to assess spondyloarthritis. *Ann Rheum Dis* 2009;68:ii1-ii44
2. Burgos-Vargas, R. From retrospective analysis of patients with undifferentiated spondyloarthritis (spa) to analysis of prospective cohorts and detection of axial and peripheral spa. *Rheum* 2010;37:6
3. Nash, P *et al*. Seronegative spondyloarthropathies to lump or split?. *Ann Rheum Dis* 2005;64:ii9-ii13

Slide 10

JG3 Graphic taken from Wyeth AS training module

Jeyni Gnanapragasam, 08/03/2011



Ankylosing spondylitis

Ankylosing spondylitis (AS)

- AS is the major subtype and a main outcome of SpAs[1A]
- Clinical features include:[1B]
  - IBP
  - Peripheral oligoarthritis (predominantly of lower limbs)
  - Enthesitis
  - Specific organ involvement (including anterior uveitis, psoriasis, IBD)
- Pain generally felt deep in the buttock and/or lower lumbar regions[1C]
- Age of onset is usually from late teens and early adulthood[1D]
- Strong genetic association
  - 90-95% of patients are positive for HLA B27[1E]
- Family history in associated conditions has a strong effect on the risk of developing the disease[1F]

1. Braun J *et al*. Ankylosing spondylitis. *Lancet* 2007;369:1379-1390

Epidemiology of AS

Gender differences	Men more affected than women, with 2-3:1 ratio[1A]
Symptom onset	~80% develop first symptoms <30 years, <5% present at >45 years[1B]
Prevalence	2-5 per 1000 in UK[2A] In 2006 an estimated 200,000 were diagnosed in UK[2B]
Incidence	~7 per 100,000 people per year[3A] 2,300 new diagnosis England and Wales per year[3B]
Prevalence amongst populations	Differs depending on ethnic background; AS is more prevalent in Caucasian population, and rare in black populations[1C, 4]
Mean age at diagnosis	33[5]
Mean diagnostic delay	10 years[2C]

1. Braun ,J *et al*. Ankylosting spondylitis. Lancet 2007;369:1379-1390
2. National Ankylosing Spondylitis Society. *Looking ahead : Best practice for the care of people with ankylosing spondylitis*. Available: http://www.nass.co.uk/NASS/en/loose-leaf-pages/resources-for-health-professionals-2/. Last accessed February 2011.
3. NICE. *Ankylosing spondylitis - adalimumab, etanercept and infliximab: appraisal consultation document*. Available: http://www.nice.org.uk/guidance/index.jsp?action=article&r=true&o=34836 . Last accessed February 2011.
4. Brent, LH *et al.* Ankylosing Spondylitis and Undifferentiated Spondyloarthropathy. *eMed J* 2001;2:1–23
5. Sieper, J *et al*. Ankylosing spondylitis: an overview. *Ann Rheum Dis* 2002;61(3):iii8–iii18

Impact of AS

- Pain and disability of AS can be similar to that of rheumatoid arthritis[1A]
- UK data from 2001 shows 31% patients with AS unable to work[2]
- Standard mortality ratio (SMR) of 1.5 (similar to RA) – cardiac valve disease and fractures[1B]
- Quality of life studies indicate:[1C]
  - Stiffness 90%
  - Pain 83%
  - Fatigue 62%
  - Poor sleep 54%
  - Concerns about appearance 51%
  - Worry about the future 50%
  - Medication side effects 41%

1. Keat, A.(2004). *BSR guideline for prescribing TNFα blockers in adults with ankylosing spondylitis.* Available: http://www.rheumatology.org.uk/includes/documents/cm_docs/2009/p/prescribing_tnf_alpha_blockers_in_adults_with_ankylosing_spondylitis.pdf . Last accessed February 2011.
2. Barlow, JH *et al*. Work Disability and family life; comparisons with US population Arthritis Rheumatism. *Arthritis Care & Research* 2001;45:424–429

AS in women

- Historically, AS was considered a disease that overwhelmingly affects men[1A]
- Recent studies have shown a significant proportion are women, with a ratio of men:women approaching 2:1 as opposed to 3:1[1B]
  - Women have a significantly earlier age of disease onset and worse functional outcomes despite more radiographic severity in men[1D]
  - There is suggestion that women have more peripheral arthritis[1E]
  - A greater proportion of first degree relatives have a history of the disease[1C]
- The delay in diagnosis may be due to the lack of recognition of the disease in women[1F]
- As the phenotype of the disease tends to differ between the genders, this may influence the timing of diagnosis and initiation of treatments[1G]

1. Lee, K *et al*. Are there gender differences in severity of ankylosing spondylitis? Results from the PSOAS cohort. *Ann Rheum Dis* 2007;66(5):633-638

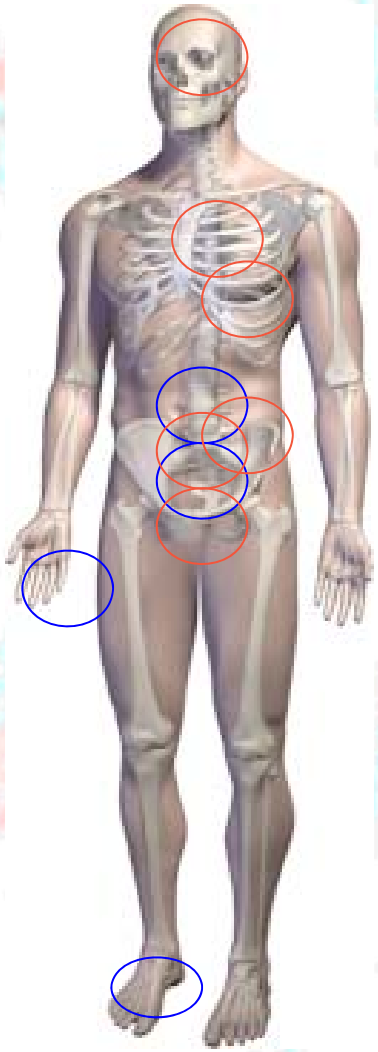
JG8

AS/SpA is associated with co-morbidities[1]

And is closely linked to the genetic marker, HLA-B27[2]

Articular
Pauciarticular asymmetric
Spondylitis
Sacroiliitis
Synovitis •Dactyilitis
Enthesitis •E.g. Achilles tendinitis

These impact on patient Quality of Life



Extra-articular
Eye •Uveitis (acute anterior)
Heart
Lungs
Gut •IBD
Kidneys
Skin •Psoriasis
Urinary tract •Reactive arthritis

1. Turkiewicz , A *et al. Spondyloarthropathies and Associated Comorbidities: What Else Should We Be Looking For?* Available: http://www.medscape.com/viewarticle/567228). Last accessed February 2011.
2. *www.spondylitis.org*

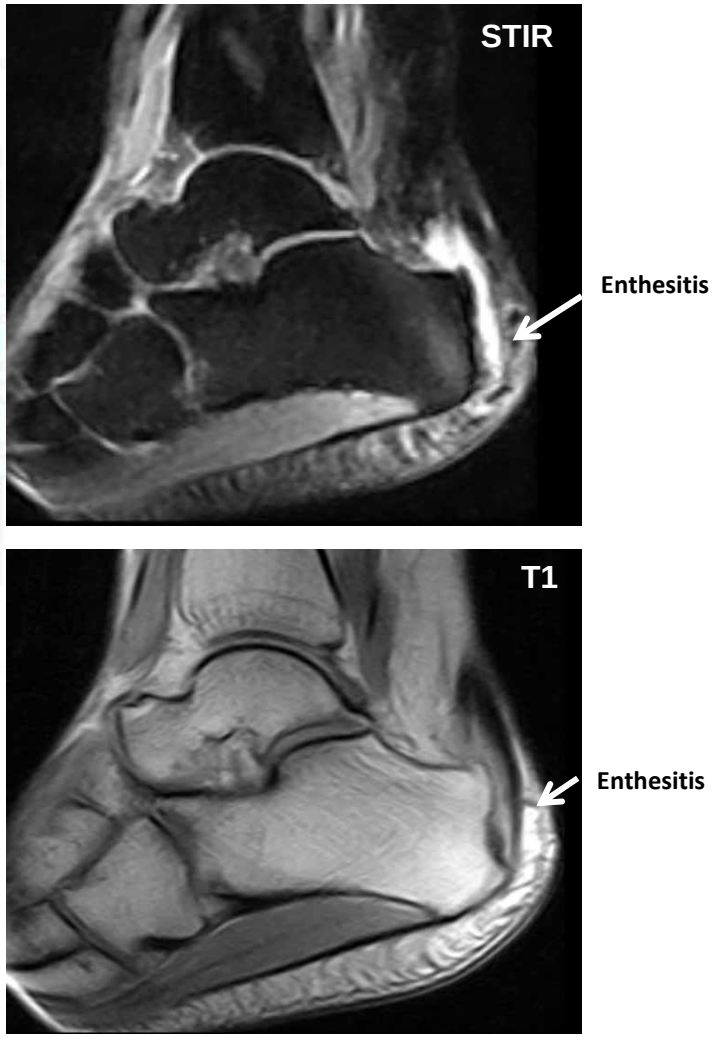
Slide 16

JG8 Graphics taken from approved AS training module (Wyeth)

Jeyni Gnanapragasam, 02/03/2011

AS and enthesitis[1]

- Enthesitis is an inflammation of the enthesis
  - Occurs in approximately one third of AS patients[1A]
- Swelling of the tendon or ligament insertion results in painful and tender lesions
  - Reactive bone forms overgrowth or syndesmophyte[1B]
- Occurs in the spine and in peripheral sites
  - e.g. the insertion of the Achilles tendon and the plantar fascia on the calcaneus[1C] (see image)



1. Brent, LH *et al.* Ankylosing Spondylitis and Undifferentiated Spondyloarthropathy. *eMed J* 2001;2:1–23

AS – Classification Criteria

- The 1984 Modified New York criteria (mNYC) is used to classify and diagnose AS, and introduced the clinical parameter for IBP[1A]

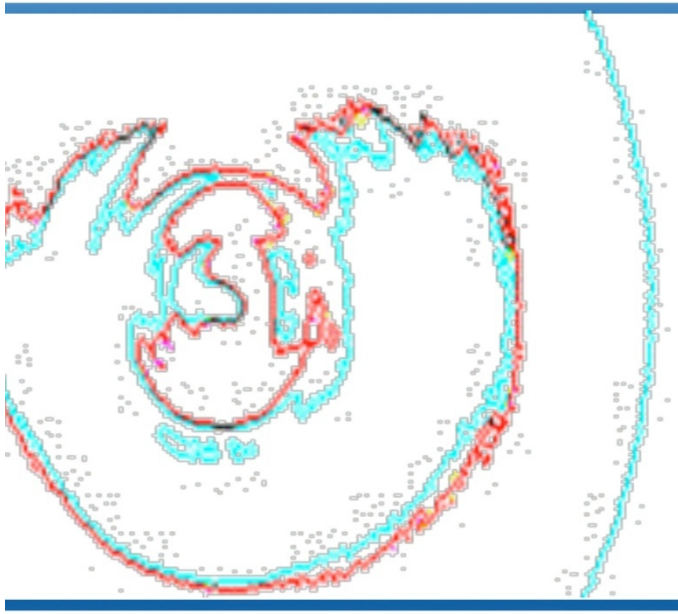
Clinical criteria:

  - Low back pain and stiffness for more than 3 months that improves with exercise, but is not relieved by rest
  - Limitation of motion of the lumbar spine in the sagittal and frontal planes
  - Limitation of chest expansion

Radiological: Sacroiliitis (Bilaterally Grade 2; Unilaterally 3-4)[1B]

Definite AS if the radiological criterion is associated with at least one clinical criterion

1. Elyan, M *et al*. Diagnosing ankylosing spondylitis. *Rheum* 2006:33(78):12-23



Diagnostic challenge of ankylosing spondylitis

AS – Diagnostic challenge

- Diagnosis of AS before occurrence of irreversible damage is a challenge[1A]
- The average time span for diagnosis is 8-11 years from onset of symptoms and definite diagnosis[2A]
- AS can be difficult to diagnose, mainly due to:
  - Symptoms can easily be confused with other causes of back pain[1B]
  - Multiple tests are required to confirm a diagnosis[2B]
  - More difficult to diagnose in females[3A]
- Earlier recognition of AS is becoming more important with the advent of more effective treatments[1C]

1. Elyan, M *et al*. Diagnosing ankylosing spondylitis. *Rheum 2006;* 33(78):12-23
2. O'Shea F *et al*. The challenge of early diagnosis in ankylosing spondylitis. *J Rheumatol* 2007;34:5-7
3. Lee, K *et al*. Are there gender differences in severity of ankylosing spondylitis? Results from the PSOAS cohort. *Ann Rheum Dis* 2007;66(5):633-638

Red flag considerations

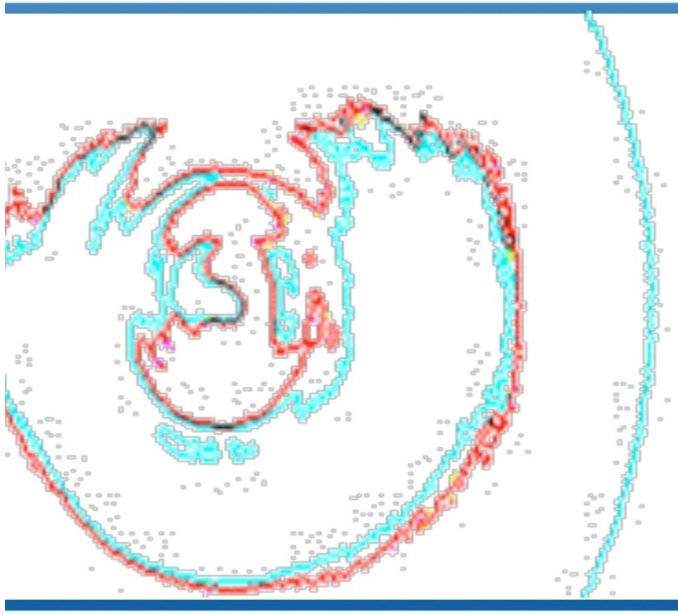
- Red flags[1]:
  - Progressive non-mechanical pain
  - Persistent severe restriction of lumbar flexion

- The differential diagnosis of AS should exclude:[1]
  - Cancer/Tumours (primary tumours are rare)
  - Bacterial infections
  - Metabolic bone disease (osteoporosis)

NOTE:

- X-rays should be performed to examine vertebra is out of place[2]
- Onset of any new or different back pain warrants investigation

1. Butler, D *et al* (2000).*The sensitive nervous system*. Adelaide. Noigroup Publications.p169
2. PubMedHealth. *Spondylolisthesis.* Available: http://ncbi.nlm.nih.gov/pubmedhealth/PMH0002240. Last accessed February 2011.



Diagnostic and referral algorithm

Development of a diagnostic algorithm

- There is an unacceptably long delay between the onset of symptoms and time of diagnosis for AS – an average of 8-11 years delay has been reported[1A]
- The longer the diagnosis is delayed, the worse the functional outcome may be[2A]
- 5% of patients presenting to the GP surgery with chronic back pain will have AS[1B]
- To optimize diagnostic accuracy of early AS, a comprehensive approach is crucial, with an understanding of the disease and its clinical picture[2B]

To offer an optimum quality of service to these patients, early diagnosis, and appropriate physical and medical therapies can lead to complete symptomatic remission in a significant number of cases

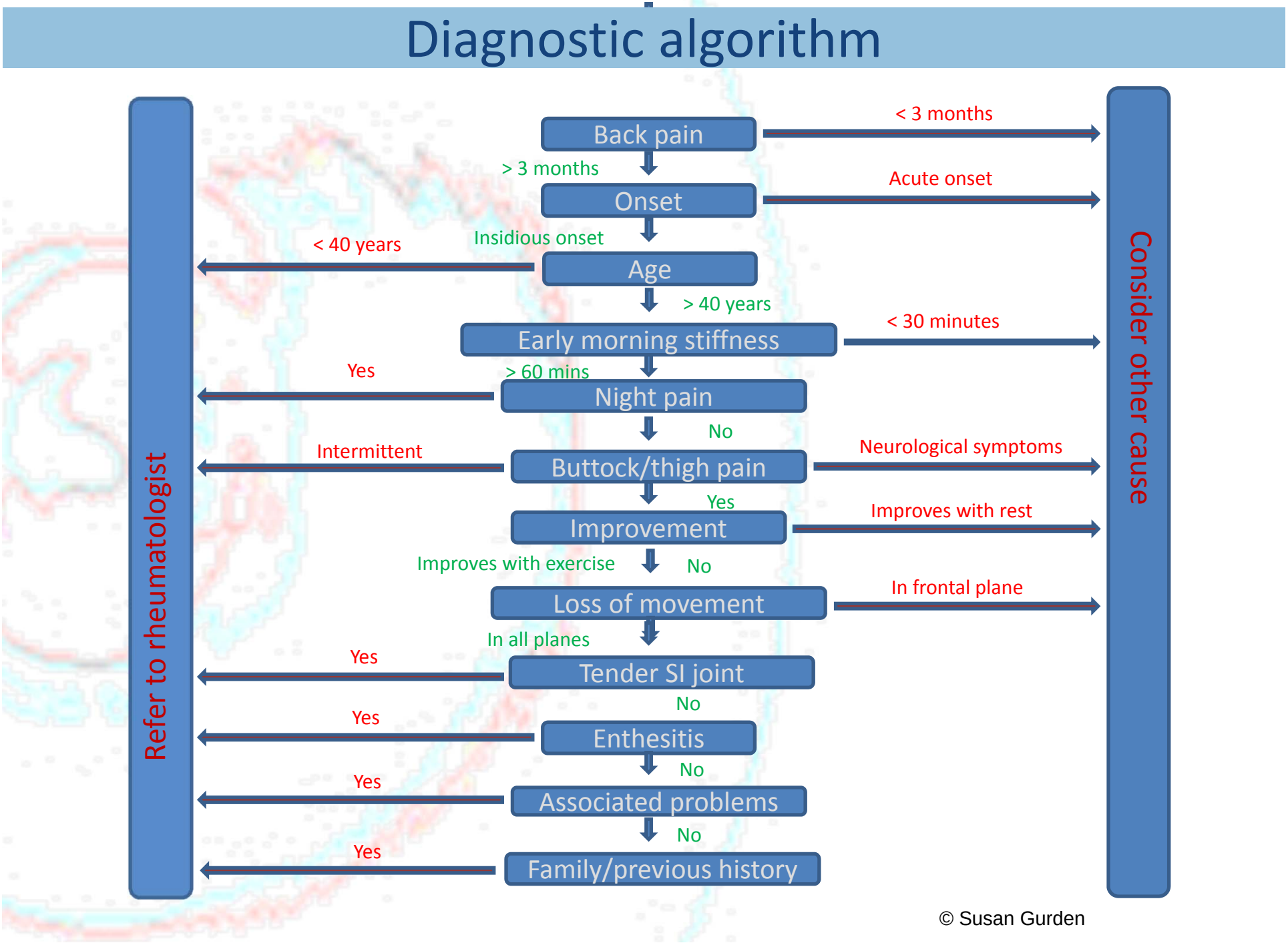
1. O'Shea, F *et al*. The challenge of early diagnosis in ankylosing spondylitis. *J Rheum* 2007;34:5-7
2. Elyan, M *et al*. Diagnosing ankylosing spondylitis. *Rheum* 2006:33(78):12-23

How to make a diagnosis

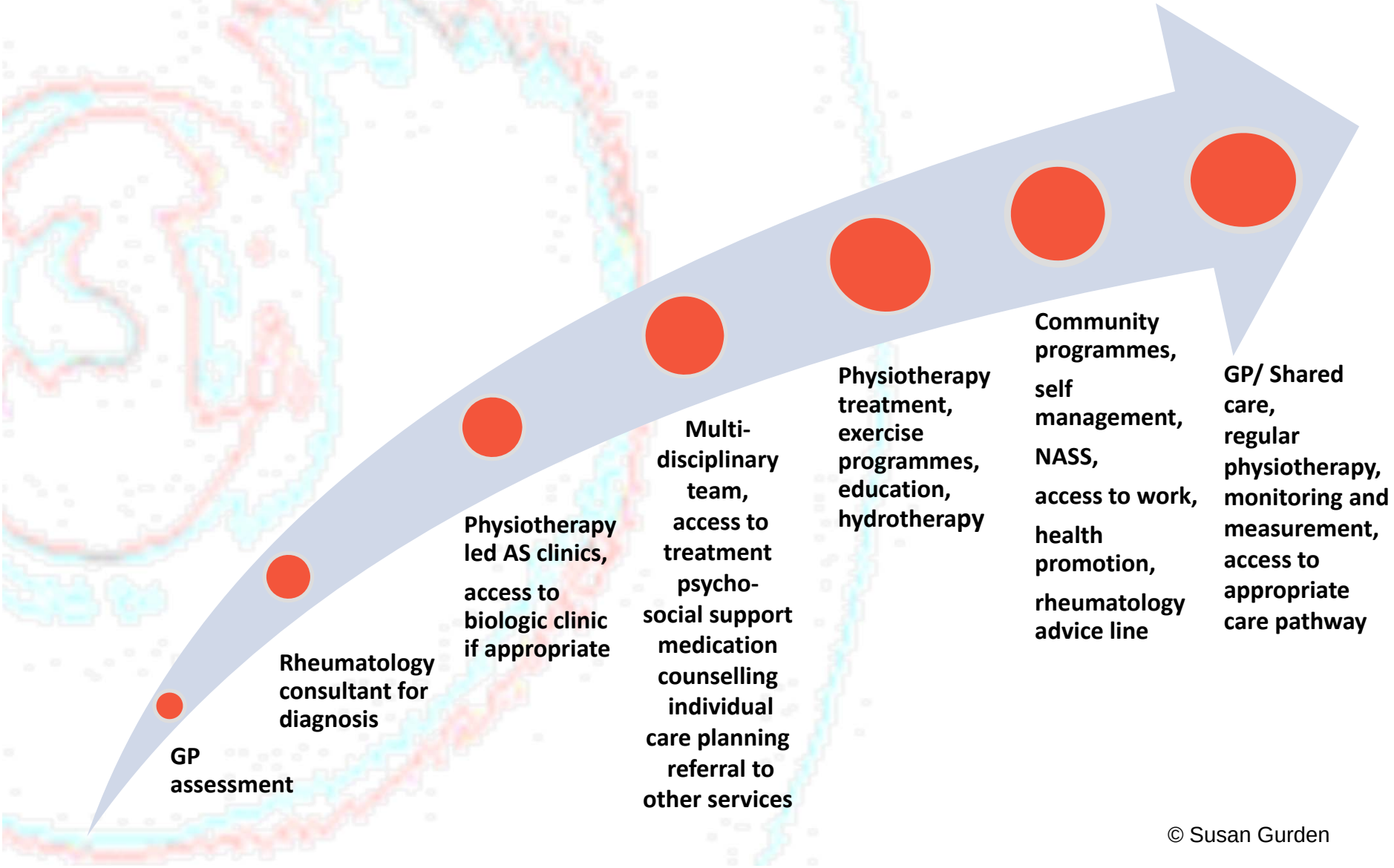
- Elicit a history suggestive of IBP[1A]
- Ask about symptoms suggestive of HLA-B27 related diseases[1B]
- Examine the spine briefly to see if there is restriction of movement or tenderness[1C]
- If AS (or other SpA) is suspected, refer to rheumatologist[1D]

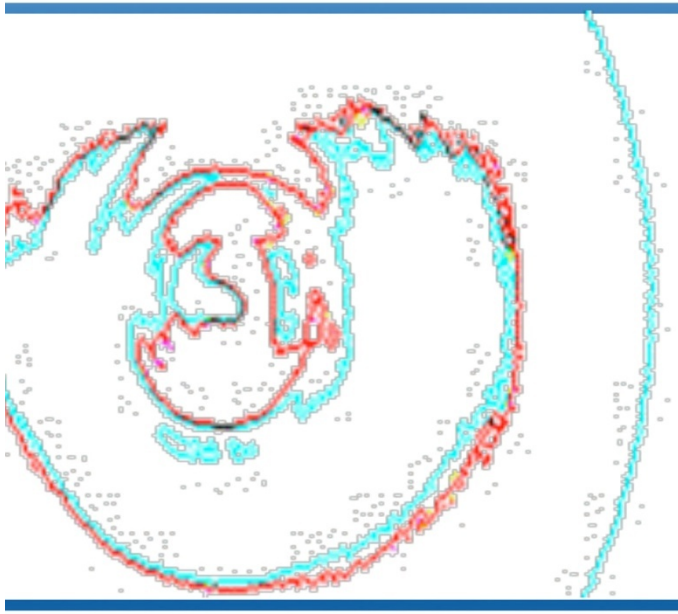
1. Elyan, M *et al*. Diagnosing ankylosing spondylitis. *Rheum* 2006:33(78):12-23

Diagnostic algorithm



Secondary care pathway





Summary

Key messages

- **Early diagnosis of inflammatory back pain has proved to be a challenge** as symptoms are similar to other causes of low back pain
- Presentation of **AS can be subtle, particularly in the early stages**
- AS can be a progressive condition over time so the **earlier an accurate diagnosis in the disease course, the better the outcome for the patient**
- Referral should be considered in all patients under 40 years who present with **inflammatory back pain**
- The main value of history and physical examination is to **determine which patients should be referred for further evaluation** and this may facilitate prognosis
- **Rheumatology services could provide optimum care for AS patients** by an expert multi-disciplinary team

For further information

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British Health Professionals in Rheumatology

BSR
The British Society for Rheumatology

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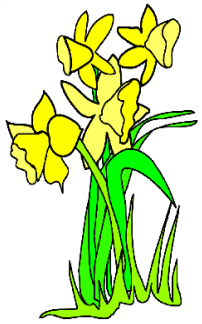

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