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# Ankylosing Spondylitis



### Epidemiology

- Peak onset between 20 and 30 years
- Form of spondyloarthritis (cause inflammation around site of ligament insertion into bone) and association with HLA-B27
- Prevalence as high as 5% in adults with chronic low back pain
- Male to female ratio 2-3:1



### **Differential Diagnosis**

- Rheumatoid arthritis: predominantly affects small peripheral joints in symmetrical pattern, often RF or anti-CCP positive, not ass with HLA-B27
- Reactive arthritis: history of preceding intestinal or GU tract infection
- Psoriatic arthritis: presence of typical psoriatic skin or nail changes





Diagnosis- Identifying Inflammatory Back Pain

- Onset of back pain before age 40
- Insidious onset
- Improvement with exercise
- No improvement with rest
- Pain at night







# Physical Exam: Reduced range of motion: Schober test



#### Physical Exam: Occiput to wall distance



### **Physical Exam**

- Chest expansion: expansion of less than
  2.5cm abnormal (5cm considered normal)
- Sacroiliac joint tenderness
- Hip joint involvement
- Peripheral joint involvement (dactylitis-"sausage toes")







### Laboratory Tests

- CRP typically elevated
- HLA-B27: present in 8% of population, prevalence in HLA-B27 positive population is only 5%



### Imaging

- Widening, erosions, sclerosis, or ankylosis of sacroiliac joint
- Early signs: squaring of vertebral bodies due to anterior and posterior spondylitis
- Late stages: proliferative changes, anterior atlantoaxial subluxation
- MRI: more sensitive- can use in patients who do not have sacroiliitis on plain radiographs (can see "bone marrow edema"







### Extra-articular involvement

- Acute anterior uveitis: occurs in 25-40% of patients
- Presents as acute unilateral pain, photophobia, and blurring of vision
- Neurologic symptoms: fracture of ankylosed spine, atlantoaxial-axial subluxation, cauda equina syndrome
- Cardiovascular disease: increased risk

- Pulmonary disease: restriction secondary to restriction in chest expansion
- Renal disease: IgA nephropathy and secondary amyloidosis (only in patients with longstanding active inflammation)
- Bowel lesions: Inflammatory bowel disease
- Osteopenia (in patients with persistent active disease)

# **Classification Criteria**

#### Clinical:

- Low back pain and stiffness >3 months improves with exercise and not relieved by rest
- 2) Limitation of motion of lumbar spine
- 3) Limitation of chest expansion relative to normal values correlated for age and sex

#### Radiologic:

1) Sacroiliitis grade >2 BL or 3 to 4 unilaterally



### **Clinical Features**

- Spinal and sacroiliac involvement
- Hip and shoulder involvement
- Costovertebral, sternoclavicular, costochondral inflammation
- Inflammation of extraspinal entheses



### Symptoms

- Low back pain (inflammatory in nature)
- Buttock pain (may be indicative of sacroiliac involvement)
- Limited spine mobility and chest expansion
- Hip pain
- TMJ involvement
- Enthesitis



# Goals of Therapy

- Symptomatic relief
- Restore function
- Prevent joint damage
- Prevent spinal fusion (prevent progressive bony erosions and ankylosis of the spine)
- Minimize extraspinal and extraarticular manifestations
- Prevent complications of spinal disease



### Assessment of disease activity

- Global pain
- Axial pain
- Degree and duration of morning stiffness
- Activities that are limited
- ESR or CRP are useful as laboratory parameters of active disease



### **Prognostic Indicators**

- Hip arthritis
- Dactylitis
- Poor efficacy of NSAIDs
- High ESR
- Limitation in ROM of lumbar spine
- Oligoarthritis
- Onset less than 16 years of age

Also associated with poor outcome: cigarette smoking, severe radiographic changes, functional impairment



### Treatment

- Physical therapy: can help maintain function and partially relieve symptoms
- Local application of heat/cold
- Pharmacologic therapy: Analgesics, NSAIDs, sulfasalazine, MTX, anti-TNF agents
- 70-80% of patients report substantial relief with NSAIDs. Continuous use may reduce radiographic progression



### Anti-TNF Agents

- Typically have rapid response: improvement in pain, functional assessment, degree of inflammation
- Patients with good functional ability, elevated ESR/CRP, and HLA-B27 positive respond best
- Need to be wary of possibility of reactivation of latent TB

