Spondyloarthropathies

- General
  - Seronegative (no auto-antibodies even RF)
  - HLA-B27 (5% of population, among those w/ + HLA-B27 only ~10% will develop disease)
  - MS: Axial Arthritis aka spondyloarthropathies and Extremity Arthritis (AS = proximal vs ReA/PsA/EA = distal) w/ Enthesitis/Tendonitis
  - Extra-Articular Disease
- **Ankylosing Spondylitis (AS)**
  - Epidemiology
    - young male
    - HLA-B27 (90%)
  - S/S
    - Constitutional Symptoms
    - Arthritis
      - Axial Arthritis (75%)
        - Insidious Chronic Severe Bilateral/Symmetric Spondylitis (apophyseal joints of spine) and Sacroilitis (sacroiliac joints of pelvis)
        - Manifesting with (1) stiffness and decreased mobility that is worse in the middle of the night and when inactive and improves with hot shower and with activity (2) "buttock pain" not so much "lower back pain" that is worse as the day progresses and with activity
        - Begins at the sacroiliac joint and thoracolumbar joint and then progresses cranially and caudally from the thoracolumbar joint such that early disease involves lumbar region while late disease involves cervical region while very late disease involves lower extremities
          - lumbar kyphosis → thoracic kyphosis → cervical lordosis flexion → contractures of lower extremity joints
          - Chest pain and restrictive lung disease 2/2 diminished chest expansion due to thoracic spine involvement
          - Caudi Equina Syndrome
        - **Wright-Shober Test**: when pt standing erect place thumb at lumbosacral junction and first finger 10cm cranially, then have pt bend as far as possible, if the change in distance is <4cm then positive test
        - Erosions (Romanus Signs when at the disc margin) → Squaring of the Vertebra "Shining Corners" → Syndesmophytes (ossification of outer layer of nucleus fibrosis on intervertebral disc) → Ankylosis (ossification of the ligaments to the point that no motion can take place between them) = "Bamboo Spine" → Osteoporosis becoming prone to fractures w/ minimal trauma, loss of normal lordotic curvature of spine w/ pt looking like they are leaning forward seen as an inability for the pt to stand with back against the wall
      - Extremity Arthritis (30%)
        - asymmetric, oligo (≤4), large (proximal), LE joints (1° hip) (opposite of seropositive disease), presents after axial arthritis
    - Enthesitis/Tendonitis
      - Inflammation at the insertion of tendons to bones
      - 1° Achilles tendon and plantar fascia tendon to the calcaneous 2° tendons that attach to ischial tuberosity, rotator cuff, trochanter, patella
      - Often under diagnosed clinically by PEx prompting more methodical approaches and the use of imaging studies
    - Extra-Articular Disease
      - Eye: acute unilateral anterior uveitis (35%) with frequent recurrence and ultimately synechiae formation (adhesions between iris and cornea)
      - Derm: NONE
      - GU: NONE
      - CV: aortic root dilation with eventual conduction defects
      - Other: apical pulmonary fibrosis and amyloidosis
  - DDx
    - Diffuse Idiopathic Skeletal Hyperostosis (DISH)
  - Prognosis
    - Deformity and disability usually occur w/in the first 10yrs of disease
    - Shorter lifespan (how much?) with typical cause of death 2/2 CHD, CVA, malignancy, renal failure, pneumonia, et al
  - Treatment
    - Mild: Indoleacetic Acid Derivative NSAIDs (eg. indomethacin, et al) and PT/OT (exercise)
    - Severe: DMARDs, Anti-TNF Agents, Steroids

- Spinal Joints (eg. Pamidronate and Ant-TNF Agents)
- Extremity Joints (eg Intra-Articular Steroid Injections, Sulfasalazine, Methotrexate)

- **Reactive Arthritis (ReA)**
  - Epidemiology
    - young male
    - HLA-B27 association (80%)
  - Clinical Features
    - Constitutional Symptoms
    - Arthritis (just like Psoriasis but less hand involvement, it is more of a lower extremity dz, uniform joint space loss, bilateral but asymmetric, 70% feet 50% ankle, 40% knee, 50% have retrocalcaneal bursitis, 60% SI)
      - Sterile arthritis that is preceded (1-4wks) by a localized GI/GU infection
        - GU: nongonoccocal (*Chlamydia, Ureoplasma*) urethritis/cervicitis (seen in 3% of pts)
        - GI: *Campylobacter, Salmonella, Yersinia, Shigella*, *Clostridium* colitis, *Trophyrema whippellii*, HIV, *Klebsiella* (seen in 15% of pts)
        - In 25% of pts the inciting infection is unknown
        - Originally thought to be a infectious arthritis because of preceding infections it was later found that bacteria were never isolated from joints rather only bacterial antigens have been found
        - NB Reiter's Syndrome refers specifically to the clinical triad of nongonococcal urethritis/cervicitis ("can't pee"), conjunctivitis ("can't see"), and axial/peripheral arthritis ("can't climb a tree") NB this term is no longer used b/c (1) similar symptoms can occur following GI infections (2) you don't always have to have extra-articular symptoms
      - Axial Arthritis (80%) (different than AP)
        - *Acute Mild Asymmetric Sacroilitis and Spondylitis*
      - Extremity Arthritis (90%) (different than AP)
        - *Asymmetric, Small Joint (Distal), Upper Extremity Arthritis (1° DIP)*
        - *Classic Proximal Pencil – In – Distal Cup Deformity*
    - Enthesitis/Tendonitis (similar to that seen in AP)
    - Extra-Articular Disease
      - Eye: uveitis/conjunctivitis (45%), seen more often in GU/*Shigella* infections
      - Derm: painless oral ulcers, *keratodermia blenorrhagica* (hyperkeratotic lesion that begins as a clear vesicle on an erythematous base on the palms/soles and progresses to macules, papules, nodules and looking similar to psoriatic lesions)
      - GU: many cultures of urethra/cervix are sterile but pts still have urethritis/cervicitis, *circinate balanitis* (painless erythematous ulcer on glans of penis) (25%)
      - CV: aortic dilation with eventual conduction defects
      - Other: NONE
  - Prognosis
    - Most run a self-limited course lasting 3-12mo but 1/3 of pts have chronic/recurrent arthritis esp if HLA-B27+
  - Treatment
    - Mild: NSAIDs
    - Severe: DMARDs and Steroids (eg. Sulfasalazine, Methotrexate, Imuran and Intra-Articular Steroid Injections for peripheral joints)
    - NB antibiotics have shown to be ineffective in the treatment of ReA despite the role of bacterial infections in this arthritis
- **Psoriatic Arthritis (PsA)**
  - Epidemiology
    - Adult
    - HLA-B27 association (40%)
    - Psoriasis affect 3% of the pop and 1/3 of psoriatic pts develop psoriatic arthritis thus approximately 1% of the pop (90% skin Sx b/f joint Sx (up to several years sometimes) vs 10% vice versa)
  - Clinical Features
    - Constitutional Symptoms
    - Arthritis
      - Axial Arthritis
        - *Insidious Mild Asymmetric Sacroilitis (50%) and Spondylitis (15%)*
      - Extremity Arthritis (95%) 1° diffuse but asymmetric PIP and DIP, 2° all joint of a 2-3 digits
        - *Asymmetric, Small Joint (Distal), Upper Extremity Arthritis (1º DIP)*
        - *Classic Proximal Pencil – In – Distal Cup Deformity*
        - Similar findings are seen in feet
      - NB Arthritis Mutilans (severe destructive arthritis)
      - XRay: bone proliferation (different than RA), diffuse soft tissue swelling of entire sausage that extends beyond joint involving entire digit hence "sausage-digit", loss of joint space, pencil-in-cup erosions, bilateral but typically asymmetric

        - Enthesitis/Tendonitis
            - Dactylitis = arthritis + tendonitis of finger (50%) (infl. of the entire finger) “sausage digit”
        - Extra-Articular Disease
            - Eye: uveitis/conjuctivitis
            - Derm: Psoriatic Skin/Nail Findings
            - GU: urethritis
            - CV: NONE
            - Other: NONE
    - Prognosis
        - Specific combinations of HLA, number of joints affected at presentation, ESR level, and dose of medications appear to be good markers for disease progression
        - Increased risk of death compared to general population
    - Treatment
        - Mild: NSAIDs
        - Severe: Steroids and DMARDs (methotrexate for ext joints and anti-TNFs for axial joints)
        - Don’t forget to treat skin disease
    - NB **S**ynovitis, **A**cne, **P**ustulosis, **H**yperostosis, and **O**steitis **SAPHO Syndrome**
        - Joint: synovitis (esp of LE joints along with enthesitis)
        - Derm: acne and pustolosis (esp on palms and soles)
        - Bone: hyperostosis and osteitis (esp of clavicle but also mandible)
        - NO association with HLA-B27 but considered a seronegative spondyloarthropathy because it may represent a subset of PsA
        - *Propionibacterium acnes* (the bacteria typically responsible for acne) is suspected to be involved in the pathophysiology b/c it has been cultured from bone biopsies
        - Treatment: similar to other spondyloarthropathies
- **Enteropathic Arthritis (EA)**
    - Epidemiology
        - Any age or sex
        - HLA-B27 association (30%)
    - Clinical Features (first extremities then axial)
        - Constitutional Symptoms
        - Arthritis
            - Axial Arthritis (15%)
            - Extremity Arthritis (95%) (similar to that seen in AP)
            - Clubbing
        - Enthesitis/Tendonitis (similar to that seen in AP)
        - Extra-Articular Symptoms (refer)
    - Treatment
        - Treat underlying IBD
        - Rarely use NSAIDs b/c of their effects on bowel
    - **NB Arthropathies of Other GI Dz**
        - **Whipple’s Disease, Celiac Disease, Intestinal Bypass for Weight Reduction**
- **Undifferentiated Spondyloarthropathy (USpA)**
    - Most of these pts eventually evolve into a specific seronegative spondyloarthropathy (usually ReA)