RA:

- HLADRB1 gene
- RA presentation is polyarticular, small joints, symmetric.
- OCPs use actually linked with lower RA incidence.
- Nodules (commonest), Episcleritis and Sjogren(KERATOCONJUCTIVITS) are mc extra-articular manifestations of RA.
- Spares DIP and Cervical spine (Atlanto-Axial C1-C2).
- Tenosynovitis and Synovitis are common with RA.
- Disease progression: Ulnar deviation of PIP, hyperextension and hyperflexion of MCP and PIP, Subluxation of joints (cocked up toes)
- Most RA pts are anemic.
- RA abs: ACPA, RF, ANA
- Xray: Periarticular Osteopenia, Uniform Joint loss, Bone erosions, soft-tissue swelling
- Xray late findings: Joint subluxation, loss of joint alignment, Osteophytes.
- Pulmonary Effusion: Pulmonary fibrosis, Pulmonary nodules.
- Cardiac: Pericardial effusion, accelerated Atherosclerosis's, HF
- Renal: Mesangial GN, Amyloidosis Nephritic
- Neuropathy but not common
- Tx: DMARDs (Azathioprine, Sulfasalazine, Hydroxychloroquine) and NSAIDs or Steroids (Useful in early disease while waiting for DMARDs to exert their effect)
- Methotrexate--> Hepatotoxic, Myelosuppression(GIVE DAILY FOLIC)
- Hydroxy--> Retinopathy
- Bonus question: We diagnosed a pts with RA and we want to start him on biologics, what’s the next step before initiating them? Ans: Check for infections, explain? duh.

Gout:

- Calcium Dihydrate--> Pseudogout, Calcium Apatite--> Periarthritis.
- Gout is associated with underexcretion of Urate more than overproduction, >6.8mg/dl (Hyperuricemia)
- Presentation: Polyarticular, Recurrent attacks of Arthritis, 1st MTP, attack wakes up pts from sleep, accumulation of URATE crystals.
- Associated with Tenosynovitis, Bursitis, Cellulitis, Uric acid nephrolithiasis.
- Age 30-60
- Serum Uric acid maybe FALSELY low during the attack
- Triggers: Drugs (Allopurinol, Uricosuric, Thiazides and Loop, and Low dose aspirin), starvation and dehydration, fatty foods, trauma, surgery.
- Sometimes present with chalk-like drain from joints.
- MAY CAUSE DACTYLITIS.
- Gold std Diagnostic: Crystal Identification (needle-shaped crystals, Birefringent)
- Xray: Punched out erosions, sharp margins, overhanging edges.
- Tx:

Acute attack and NSAID is not contraindicated: rest, NSAIDs, Colchicine.

Acute and NSAIDs are contraindicated, at most 2 joints are inflamed: Intrartiuclar steroids. or steroids in general when NSAIDs are contraindicated (Renal impairment, PUD).

- **** ALLPURINOL OR ANY URICOSURIC DRUGS SHOULDNT BE USED DURING A FLARE**
- Non-Pharma therapy can include Avoiding EtOH, Diuretics, Low dose aspirin, and weight gain.

Osteoarthritis:

- *Presentation: Morning stiffness less than 30mins, aysymmetric, MTP hands knees hips and spine, pain worsens with activity such as weight bearing.
- *Def: Hypertrophy of bone at margins, subchondral sclerosis, articular cartilage erosion, osteophyte.
- *Commonest form of Arthritis.
- More common in Females >50
- Night symptoms indicates? Advanced disease
- PEx findings: Swelling, Joint locking, Bouchard nodes(PIP), Heberden (DIP), Squaring at the base of the thumb (first carpometacarpal) , limited range of motion
- Not inflammatory (CRP and ESR will be normal)
- Hip OA is more common with obese pts.
- Knee OA: (New bony formation and enlargement) Effusions, crepitus, limited range of motion, abnormal gait, tenderness
- Diagnosis: Clinical +- radio and ESR, CRP
- *Tx:
  - Mild, no limitation: Analgesics, Low dose NSAIDs, Intra-articular steroids.
  - Frequent pain, limited function: NSAIDs, intraarticular steroids, Duloxetine, Bracing.
  - Moderate/Severe pain, night symptoms, Limited function: NSAIDs, Steroids, Duloextine, Opioids.

Seronegative Spondyloarthropathies:

*HLAB27 association

Seronegative for ANA and RF

Spondylarthritis:

- Highly heritable
- Oligoarthritis
- HLAB27, CD4+, CD8+, and Macrophages all play a role in the pathophysiology
- Pre-dominantly Axial not peripherial
- Presentation: Male, <40 yrs, Enthesitis which is swelling at the heels (insertion of Achilles tendon or Planta fascia), >30 mins of morning stiffness, Inflammatory back pain and buttock pain for more than 3 months that wakes him at night, improves with exercise and NSAIDs
- Spondylitis- CD8, Annulus Fibrosis replaced by bone (syndesmohytosis) --> Square shape of vertebral bodies (Bamboo spine)
- Sacroiliitis- CD8, subchondral area at the junction of bones and cartilage, cartilage on iliac side is replaced bone and hardening of joint.
- Hallmark is Syndesmophyte formation.
- Features: ANTERIOR UVEITIS, Dactylitis, IBD and less commonly Conjunctivitis, Psoarisis
- Cardiac and Pulmonary involvement: Conduction defects, Aortitis, dilatation of Aortic ring, Aortic regurg, Upper lung fibrosis, Restrictive lung disease.
- Diagnosis: Clinical --> Labs(ESR,CRP, HLAB27) --> MRI/Xray of the pelvis and MRI Spine (Small erosions and active sclerosis at corners of vertebral bodies called Romanus and shiny corners signs)
- Final stage: Disappearance of of Lordosis of Lumbar, Kyphosis of Thoracic and Cervical.
- Tx: NSAIDs, steroids aren't recommended, DMARDs not useful in Axial.

Peripheral:

Psoriatic Arthrits:

- can be distal, mutilans !!, polyarticular, oligo, axial asymmetric sacroiliitis.
- Presentation: Skin psoriasis, -ve RF, Dactylitis.

Reactive Arthritis:

- Presentation: Oligoarticular arthritis of large joints, developing 2-4 weeks after GI or Uro infection.
- Features: Keratoderma Blenorrhagica on palms and penis, Inflammatoy back pain, painless Oral ulcers, Enthesitis, Dactylitis, Anterior Uveitis.

Enteropathic:

- IBD related disease (more commonly Crohn's)
- Type 1: runs with GI disease activity (TREAT GI CAUSE TO RESOLVE)
- Type 2: runs independently.

Tx of Peripheral seronegative arthritis: NSAIDs, DMARDs (Methotrexate, Sulfa) ,Steroids not recommended.

SLE:

- **HLADR2/D3
- Presentation (Acute): Female, Malar rash, Symmetric Non-deforming arthritis, oral ulcers, edema, recurrent miscarriages, Raynaud's.
- SLE more severe in males, yet men with Klinefelter have it less severe.
- Renal manifestation: Lupus Nephritis
- Pulmonary: Pleuritis, nodules, PHTN, pnuemnoitis.
- Diagnosis? No gold std, criteria, abs, and clinical. when abs comes negative and there is HIOS we do another abs test.

Labs and Abs:

- Hypocomplementemia

Abs:

- Specific for SLE: Anti-dsDNA(correlates with renal disease activity) and Anti-Sm
- Drug induced Lupus: Anti-Histone
- AntiRNP: Clinical sus of MCTD or SLE (not specific)
- AntiSSA RO/LA: Renal protective, associated with Congenital Heart block(found in mothers) . indicated for Autoimmune hepatitis, Sjogren and SLE.
- Anti Scl-70: Diffuse systemic sclerosis and associated with lung disease.
- Anti-Jo1: Polymyositis, and Dermatomyositis, associated with interstitial lung disease, arthritis, mechanic hands and Raynaud's.
- RF and ACPA: to exclude RA with patient with predominant arthralgia and arthitis as symptoms.
- Serological studies for HBV and HCV and EBV.
- CK: to check for myositis.
- ANA: good for screening.
- Anti-Phospholipid (Lupus anti-coagulant, anticardiolipin, anti-IGG/IGM and glycoprotein.
- Pts with longstanding disease or being treated may lose ANA reactivity.
- Imaging and other workups: nothing significant besides associations and checking for organ damage.

Chronic Cutaneous Lupus

• Discoid rash, localized & generalized

• Hypertrophic (verrucous) lupus

• Lupus panniculitis (profundus)

• Lupus erythematosus tumidis

• Chilblains lupus

• Mucosal lupus

• Lichen planus overlap

Criteria for SLE:

At least 1 clinical + at least 1 immunologic

Criteria (for a total of 4)

OR

Lupus Nephritis by biopsy

with ANA or anti-dsDNA antibodies

	Clinical Criteria
1	Acute Cutaneous Lupus
2	Chronic Cutaneous Lupus
3	Oral or nasal ulcers
4	Non-scarring alopecia
5	Arthritis
6	Serositis
7	Renal Disorder
8	Neurologic Disorder
9	Hemolytic anemia
10	Leukopenia/ Lymphopenia
11	Thrombocytopenia

Lupus specific

	Immunologic Criteria
1	ANA
2	Anti-DNA
3	Anti- Sm
4	Antiphospholipid antibodies • Lupus anticoagulant; False+ rapid plasma reagin • Anticardiolipin , IgA, IgG or IgM • Anti-B2-glycoprotein I ,IgA, IgG or IgM
5	Low complements (C3,C4 or CH 50)
6	Direct Coombs test (in absence of hemolytic anemia)

- Tx for SLE: NSAIDs, Steroids (used after organ damage), Hydroxychloroquine(protective against organ damage and reduce flares, used for skin and joint symptoms), DMARDs.
- Most common causes of death in SLE patients:
  - Heart disease and stroke
  - Hematologic malignancies and lung cancer
  - Infections
  - Renal disease

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