



# Idaho WWAMI Medical Education Program

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9<sup>th</sup> Annual Mini Medical School

***THE IMMUNE SYSTEM***



UW Medicine  
SCHOOL OF MEDICINE



FAMILY MEDICINE RESIDENCY  
OF IDAHO



University of Idaho  
A LEGACY OF LEADING



IDAHO INBRE  
IDeA Network of Biomedical Research Excellence



Saint Alphonus



# Inflammatory arthritis

Desmond Anim-Appiah, MD  
Clinical Assistant Professor  
University of Washington School of Medicine



# Gout

- What is gout
  - Episodes of sudden joint inflammation
- What causes gout
  - High uric acid level (overproduction or under excretion), depositing around joints
- Who gets gout
  - Middle aged men, post-menopausal women, excessive alcohol, diuretic users
- What are the symptoms/diagnosis
  - Joint pain and swelling (lasts days to weeks), tophi
  - Joint aspiration looking for uric acid crystals
- How is it treated
  - Anti-inflammatories, uricosuric drugs, xanthine oxidase inhibitors, uricase
  - Diet (avoid purine rich foods) – helpful but insufficient



# Rheumatoid arthritis

- What is Rheumatoid arthritis
  - Chronic symmetric arthritis
- Who gets RA
  - F:M about 3:1; age 20-50
- What causes RA
  - Genetic and environmental factors, disorganized immunity
- What are the symptoms
  - Joint pain and swelling, stiffness, fatigue
  - Other organs (eye inflammation, lung inflammation, vasculitis, skin, blood)
- How is it diagnosed
  - Clinical features, blood tests (RA factor, CCP antibody), x-rays
- How is it treated
  - Medications, (anti-inflammatories, prednisone, methotrexate, biologicals), PT/OT, surgery



# Ankylosing spondylitis

- What is ankylosing spondylitis
  - Chronic spine inflammation
- Who gets AS
  - Adolescence and young adulthood, males, HLAB27
- What causes AS
  - Unknown but related to HLAB27
- What are the symptoms
  - Inflammatory back pain, Achilles tendinitis, plantar fasciitis
  - (eye inflammation, bowel inflammation)
- How is it diagnosed: symptoms, findings, x-rays, HLAB27 test
- How is it treated: PT, anti-inflammatories, TNFi



# Biologic agents for treatment of inflammatory arthritis

- Tumor necrosis  $\alpha$  inhibitors (TNFi)
  - Etanercept, infliximab, adalimumab, golimumab (for RA, AS)
  - Certolizumab (for RA)
- Costimulatory blockers
  - Abatacept (for RA)
- Interleukin 1 receptor inhibitors
  - Anakinra (for RA)
- Interleukin 6 receptor inhibitor
  - Tocilizumab (for RA)
- Anti B cell antibodies (anti CD20 therapy)
  - Rituximab (for RA)