

SCCEP 2013 LLSA Course Article 2 Orthopedic Illness in Patients with HIV

Takhar SS, and Hendey G. *Emerg Med Clin N Am* 2010;28:335-342.

Article: Review from *Emergency Medicine Clinics of NA*. Due to the increased use of HAART and increased survival rates, the spectrum of AIDS related musculoskeletal illnesses has changed, with more non-infectious and non-opportunistic complications as well as more medication related adverse effects. HIV, the immune response and HAART meds can be directly toxic to joints, bones and muscles. Infections can present later and at a more advance stage. this paper divides the musculoskeletal conditions into 4 main groups; **Disseminated Diseases, Bone Disorders, Joint Disorders and Myopathies**

Disseminated diseases

1. **Neoplastic:** Immunosuppression predisposes patients to malignancy
 - a. **Karposi's Sarcoma** - Most common AIDS -related cancer
 - i. **AIDS defining malignancy**, Risk 310 X non-AIDS
 - ii. Vascular neoplasm mostly skin, but also liver, spleen, lymph
 - iii. **KS rarely invades bone, usually from contiguous tissue**
 - iv. Not well seen on plain films, consider CT, MRI, biopsy to confirm
 - b. **Non-Hodgkin's Lymphoma (High Grade)** Risk 110 X
 - i. **Aggressive B-Cell type assoc. with profound immunosupression**
 - ii. **Marrow involved up to 30% of cases**
 - iii. Presents late, with classic triad of fever, night sweats and weight loss
 - c. **Treat both KS and Lymphoma** with HAART as well as Cytotoxic drugs

2. Infectious

- a. **HIV Pts at high risk for primary or reactivated TB**
 - i. **TB leading cause of AIDS deaths worldwide**
 - ii. HIV highest risk factor for progression from latent to active TB
 - iii. **TB mostly affects lungs but increased extra-pulmonary in AIDS**
 1. In AIDS, extra-pulmonary manifestations are concurrent
 2. Believed to be due to hematogenous spread
 - a. **Spondylitis (T9-L3 Vetebrae Pott's disease, Knees)**
 - i. Untreated: necrosis and vertebral collapse
 - ii. neurological complications in 10%, paraspinous abscess
 - iii. MRI test of choice
3. **Septic Arthritis ; Hips and Knees**
 - i. Concurrent Osteomyelitis and soft tissue inf.
 - ii. Clinical finding non-specific
 - iii. Diagnosed with bone biopsy and + PPD

- b. Atypical Mycobacterial Inf. are manifestation of Advanced AIDS**
 - i. Systemic dissemination occurs with CD4 <100 (hematogenously)
 - ii. generally not as pathogenic as TB
 - iii. *M. Avium* most common generally
 - iv. *M. Kansasii* and *M. Haemophilum* affect MS system most often
 - 1. Cutaneous nodules and ulcers seen
- c. *Bartonella Quintana* and *Hensalae*: Cause Bacillary Angiomatosis**
 - i. Rickettsial-like bug, causes lymphadenitis in normal host
 - ii. In advanced AIDS, skin and viscera involved, looks like KS
 - iii. Can cause osteomyelitis, invade lymph, CNS, liver
 - iv. More often invades bones than KS
 - v. Diagnose with biopsy and treat with ABX

Bone Disorders

3. Osteopenia and osteoporosis:

- a. AIDS patients have lower bone mineral density**
 - i. causes include both the disease and meds (esp PIs)
 - ii. leads to increased fracture risk compared to age-matched controls
Spine, hip and wrist

4. Osteonecrosis (AKA avascular necrosis): Epiphyseal bone infarctions near joints

- a. Incidence up to 45 X greater in AIDS patients.**
 - i. Traditional risk factors of steroids, hypertriglyceridemia and ETOH
 - ii. HAART, esp. PIs are implicated
 - iii. Femoral head most likely location
 - iv. MRI of hip recommended for persistent pain or abnormal plain Xray

5. Osteomyelitis:

- a. Occurs from hematogenous spread, contiguous foci or direct inoculation**
- b. Acute and chronic forms**
- c. *Bartonella* species aside (see above), osteomyelitis is not common**
 - i. *Salmonella, cryptococcus, nocardia* and *candida*
 - ii. TB (see above) seen in endemic areas: presents afebrile with back pain
- d. Plain films are useful if positive but MRI is more sensitive and specific**
- e. Definitive diagnosis is made with bone biopsy and culture**
- f. Treatment is long term ABX and sometimes debridement**

Joint Disease

6. Septic Arthritis: Relatively uncommon in HIV. Increased risk if IVDA or Hemophilia

a. Occurs from hematogenous spread, contiguous foci or direct inoculation

- i. *S. aureus* most common in HIV and normal hosts
- ii. TB seen in endemic areas
- iii. *Sporotrichosis* and *Candida* seen in advanced HIV
- iv. *Psuedomonas* seen in IVDA
- v. Polyarticular seen with disseminated GC

b. Diagnosis

- i. **Arthrocentesis.** Synovial WBC counts may be low
- ii. Culturing organism may be difficult esp. with atypical organisms
- iii. Synovial biopsies and special stains may be required

c. Empiric treatment directed at S. Aureus

7. Spondyloarthritis: Higher incidence in HIV patients than normal hosts

a. HLA-B27 Assoc. Reactive Arthritis (Reiter Syndrome) 200 x more common

- i. Related to *C Jejuni*, *Chlamydia* and *Shigella* infections
- ii. In HIV classic triad of arthritis, urethritis and conjunctivitis often absent
- iii. Reactive arthritis more debilitating in HIV

b. Psoriatic Arthritis 40 x more common

- i. More common in advanced HIV & skin changes more severe than in non-HIV
- ii. Can involve the tendon and fascia
- iii. Treatment is NSAIDs, Sulfasalazine, immunosuppressives and HAART

8. HIV Associated Arthritis: Similar to other viral infections like Hep B

- a. Transient, non-erosive oligoarthritis of the lower extremities lasting < 6 wks
- b. Can occur at any time with HIV, sero-negative, synovial fluid non-inflammatory
- c. Treatment is rest, NSAIDs.
- d. **Painful articular syndrome** is similar, but more acute & severe and lasts 24 hrs

Myopathies:

9. Polymyositis: Idiopathic inflammation of skeletal muscle

- a. Pts have subacute, progressive proximal muscle weakness and increased CK levels
- b. May be the first sign of HIV infection
- c. Steroids may help.
- d. AZT (or ZDV) a RTI can cause a clinically indistinguishable similar myopathy that resolves after the drug is stopped
- e. HAART may cause Grave's disease as part on the immune reconstitution syndrome

10. Pyomyositis: Primary deep muscle abscess seen more often in HIV, *S Aureus* 90%

- a. Presentation is indolent with local muscle pain and low grade fever, +/- induration
- b. Differential includes polymyositis and other inflammatory conditions
- c. Presents in quads, gluteals and iliopsoas
- d. After 1-3 weeks pain and fever become more prominent, may become septic
- e. MRI, CT and US can aid diagnosis, with MRI more sensitive early, pre-abscess
- f. **Treatment is drainage and systemic anti-Staph ABX**

Summary:

- 1. Various M-S manifestations occur in AIDS patients
- 2. Disease spectrum results from combination of the Virus, patient's immune response and AIDS medications
- 3. HAART has altered AIDS disease course and shifted M-S manifestations
 - a. Fewer opportunistic infections
 - b. More osteopenia and osteonecrosis
 - c. More disseminated TB, atypical mycobacterial diseases and Bartonella
 - d. More non-infectious spondyloarthropathies and myopathies