

# **HIV in Athletes**

See also HIV Infections (ID)

See also AIDS exposure

## **Background**

### 1. Definition

- Viral dz affecting the immune system
- Responsible for acquired immune deficiency syndrome (AIDS)

### 2. General information

- HIV-human retrovirus (HIV-1)
  - Destroys CD4 T-helper cells
  - Decr immunity
- Transmission
  - Contact by needles (especially hollow bore)
  - Unprotected sex
  - Exposure to large amounts of infected body fluids through skin breaks or mucous membranes
- HIV transmission documented by contact to:
  - Blood
  - Semen
  - Breast milk
  - Amniotic fluid
- There are no documented cases of spread by:
  - Tears
  - Sweat
  - Urine
  - Respiratory droplets
  - Saliva

## **Pathophysiology**

### 1. Pathology of dz

- HIV virus infects host CD4 T-helper cells
- Uses host DNA to replicate
  - Causes destruction of host cell
  - Decr in immunity

### 2. Risk factors

- Exposure to
  - Infected IV needles
    - Illicit drug use
    - Health care workers
  - Unprotected sex w/multiple sexual partners
    - Especially male to male
  - Blood transfusions before 1985
  - Potential exposure to blood in athletic competition
- No documented cases of HIV transmission during athletic competition

- Possibility of HIV transmission during athletic competition remote, theoretically possible
- HIV transmission more likely to be spread among athletes due to "risky" behavior than due to transmission during athletic competition
  - Use of injectible steroids
  - Multiple sexual partners
- 3. Incidence/ prevalence
  - 40,000 new cases/yr in US
  - Risk of HIV transmission during athletic competition (NFL, 1992) calculated to be as low as 1 HIV transmission for every 85 million game contacts
  - Prevalence 40 million people worldwide
  - 1 million people in US infected w/HIV
- 4. Mortality
  - HIV net median survival 9-11 yrs
    - With HAART approx 20 yrs
  - AIDS w/out tx 6-19 mos

## **Diagnostics**

1. History: stages of infection
  - Early stages
    - Asymptomatic
  - HIV virus replicates/CD4 cells diminish
    - Low grade fevers
    - Weight loss
    - Lymphadenopathy
    - Diarrhea
    - Lethargy
  - Late phases (AIDS)
    - Malignancies
    - Opportunistic infections
2. Physical exam (AIDS)
  - Kaposi's Sarcoma
  - CMV retinitis
  - Oral thrush
  - Lymphadenopathy
  - Cachexia
3. Diagnostic testing
  - Laboratory eval for potential exposure
    - Baseline CBC
    - ESR
    - Urinalysis
    - Renal/ liver panel considering antiviral medications
    - Hepatitis A antibody
    - Hepatitis B surface and core antibody
    - Hepatitis B surface and core antigen
    - Hepatitis C antibody

- RPR
- HIV serology
- Laboratory eval of donor individual should be done if possible
  - Hepatitis A antibody
  - Hepatitis B antibody and surface antigen
  - Hepatitis C antibody
  - RPR
  - HIV serology

## Therapeutics

1. Therapeutics for HIV negative pts w/potential exposure
  - Acute tx for athletes and sport medicine personnel, individuals w/potential exposure
    - Depending on type of exposure consider:
      - Tetanus update
      - Human immune globulin 2 mL IM
      - Hepatitis B globulin 0.06 mg/kg if source unknown or Hep Bs surface antigen positive
      - Hepatitis B immunization series if not immunized
      - Consider 4 wks of antiretroviral post exposure prophylaxis (PEP)
        - Start as soon as possible
  - Follow-up after potential exposure
    - Antiretroviral medication: check every 2 wks
      - CBC
      - Urinalysis
      - ESR
      - Renal and hepatic panel
    - Serial HIV, HBV, Hepatitis A virus, Hepatitis C virus, Syphilis blood testing at
      - 6 wks
      - 12 wks
      - 6 mos after exposure
    - HIV follow-up for 12 mos recommended for those who become infected w/HCV after exposure to source co-infected w/HIV and HCV
2. Counseling for HIV infected athlete
  - Exercise is safe, beneficial and should be continued
  - Exercise reduces metabolic abnormalities associated w/HIV
    - Abdominal adiposity
    - Dyslipidemia
    - Insulin resistance
  - Exercise improves quality of life
    - Improved self-esteem
    - Improved cardiac health
  - Counsel about safe athletic competition and behavior modification to prevent transmission to others
  - Counsel about current tx options

- HIV infections not reportable in all states
  - Check w/local health department for guidance
- Should NOT inform coaches, teammates, opponents, other physicians of pts HIV status
  - Pt confidentiality
- Currently, HIV positive individual responsible for sexual transmission of HIV
- No precedent for transmission in athletics
- HIV+ athlete should be aware they may be held responsible for HIV transmission
- Health care providers should be aware of state/ federal laws regarding confidentiality and OSHA regs
- HIV+ athletes should be started on antiretroviral meds
  - Consider HIV specialist

## **Prevention**

1. All sports medicine personnel and ancillary staff should follow universal precautions
  - Avoid direct exposure to open wounds
  - Adequately cover own healing wounds/ dermatitis to prevent transmission to or from athlete
2. Protective equipment should be available to all sports medicine personnel
  - Vinyl gloves
  - Disinfectant
  - Bleach (1:10 dilution w/tap water)
  - Antiseptic
  - Designated receptacles for soiled uniforms
  - Bandages/ dressings
  - Biohazard container for needles, syringes, scalpels
3. Sports medicine providers/ athletes should avoid exposure to blood during athletic competition
  - Athletes should be required to leave competition if they are bleeding
  - Abrasions, cuts, oozing wounds should be cleaned w/soap & water or antiseptic
    - Cover w/occlusive dressing that will stay on during competition
  - When bleeding is controlled/wound covered, athlete may return to competition
4. Minor cuts/abrasions do not require interruption of play or removal from competition
5. Small amounts of blood on a uniform do not require removal from competition or/change in uniform
6. Athletes should be instructed
  - Report all wounds right away
  - Wear appropriate equipment
7. Equipment or areas soiled w/blood should be disinfected w/1:10 soln of bleach and water and wiped down
8. All bloodstained uniforms/towels should be washed in hot water and bleach
9. Consider HBV immunization for members of sports medicine team
10. No recommendation for universal HBV immunizations for athletes
11. No mandatory HIV testing for athletes
  - Testing currently not supported by medical evidence

12. Athletes who engage in "high-risk" behavior should be encouraged to undergo HIV testing
  - Multiple sex partners
  - Injectable drug use
  - Sexual contact w/infected individual
  - Those who have received blood transfusion before 1985
13. All HIV testing requires counseling and signed consent from pt

### **References**

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