Chapter 16

Nursing Interventions

• Duty to treat
  – Health care professionals may not pick and choose their patients
  – Rehabilitation Act of 1973 prohibits discrimination against the handicapped and the disabled
    • HIV and AIDS are included

Transmission of HIV

• HIV is an obligate virus
  – It cannot survive very long outside of the human body
• Transmitted from human to human **
  – Blood
  – Semen
  – Cervicovaginal secretions
  – Breast milk
Transmission of HIV

HIV in Body Fluids

- Blood: 18,000
- Semen: 11,000
- Vaginal Fluid: 7,000
- Amniotic Fluid: 4,000
- Saliva: 1

Average Number of HIV Particles in 1 cc of these body fluids

Routes of Transmission of HIV

- Sexual Contact
  * Male-to-male
  * Male-to-female or vice versa
  * Female-to-female
- Blood Exposure
  * Injecting drug use/needle sharing
  * Occupational exposures
  * Transfusion of blood products
- Perinatal
  * Transmission from mom to baby
  * Breastfeeding

HIV Transmission

- HIV enters the bloodstream through:
  - Open Cuts
  - Breaks in the skin
  - Mucous membranes
  - Direct injection
- Common fluids that are a means of transmission:
  - Blood
  - Semen
  - Vaginal Secretions
  - Breast Milk
• HIV cannot be transmitted by
  • Food, air, water
  • Casual person to person contact at home, work or in public including handshaking, dry kissing or hugging
  • Insect bites
  • Coughing, sneezing, spitting
  • Although HIV may be present in other body fluids
    – Saliva
    – Urine
    – Tears
    – Feces
    – There is no indication that it is transmitted by these

Trends and Most Affected Populations
• Women and children constitute a quickly growing segment of the population with AIDS
• The number of cases attributed to heterosexual contacts has increased from 120 cases reported in 1985 to 149,989 through the end of 2003

• Normal immune response
  – Foreign antigens interact with B cells
  – B cells initiate antibody development
  – B cells and T cells initiate cellular immune response
    •
Pathophysiology KNOW THIS!

- Immune **dysfunction**
  - T-cells or CD4+ lymphocytes are destroyed by HIV
  - HIV is then able to reproduce in the lymphatic system and eventually "spills over" into the blood
  - Decreases resistance to life-threatening infections**
    - CD4+ 600-1200 normal
    - CD4+ 200-499 minor immune problems
    - CD4+ below 200, severe immune problems

- What is the normal **CD 4 count**? (T cells)
  - **600-1200 Normal**
  - **200 or less Indicated full immune deficiency**

Spectrum of HIV

- **Acute retroviral syndrome**
  - Initial exposure
  - Primary HIV infection
    - Flu-like symptoms
    - Develop antibodies to HIV in 1-12 weeks
  - Asymptomatic HIV infection
    - HIV seropositivity (seroconversion)
      - Positive HIV antibody test
      - 95% within 3 months; 99% within 6 months
    - Infectious; no illness
### Spectrum of the disease

- **Early infection**
  - Early HIV disease
    - Signs and symptoms may not appear until 8-10 years after exposure
- **Early symptomatic disease**
  - CD4+ cell count drops below 500 cells/mcl
  - Persistent, unexplained fevers
  - Drenching night sweats
  - Chronic diarrhea, headaches
  - Fatigue
  - Recurrent or localized infections
  - Neurological manifestations

### Spectrum of HIV

- **AIDS**
  - The end-stage, or terminal, phase of the HIV infection
  - HIV positive and CD4+ (T4) count below 200 or one or more AIDS-indicator conditions

### HIV has progressed to AIDS

- HIV positive test
- CD4 count below 200
- History of opportunistic diseases
Diagnostic Studies

• HIV antibody testing (KNOW THIS)
  – **ELISA**
    • Detects the presence of HIV antibodies
    • If positive, ELISA is done a second time
  – **Western blot**
    • Done if second ELISA is positive
    • More sensitive than ELISA

Diagnostic Studies

• **Seropositive**
  – All three tests are positive (ELISA x 2 and Western blot)
  – **Does NOT mean the person has AIDS**
• **Seronegative**
  – Not an assurance that an individual is free from HIV infection
  – Seroconversion may not have occurred yet

Therapeutic Management

• Therapeutic management focus
  – Monitoring HIV disease progression and immune function
  – Preventing the development of **opportunistic diseases**
  – Initiating and monitoring antiretroviral therapy
  – Detecting and treating opportunistic diseases
  – Managing symptoms
Therapeutic Management

- Most common opportunistic diseases associated with HIV
  - Pneumocystis carinii pneumonia (PCP)
  - Most common infection
    - Symptoms
      » Fever; night sweats; productive cough; SOB
  - Kaposi’s sarcoma
    - Most common neoplasm found in HIV-infected patients
    - Symptoms
      » Reddish-purple spots on the skin
    - Treatment
      » Radiation
      » Chemotherapy

(continued)

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Kaposis's Sarcoma

Sarcoma before and after interferon Tx

Therapeutic Management

• Pharmacological management (continued)
  – Antiretroviral therapy
    • Combination therapy prevents development of resistance
    • Must be given around the clock
    • Usually initiated
      – CD4+ count below 350 mcl, or
      – Viral load greater than 30,000 copies/ml
Symptom of HIV  Hairy Leukoplakia

Nursing Interventions

• Adherence
  – Adhering to a prescribed regimen is of paramount importance to survival and the success of treatment*****

• Palliative care
  – The active, total care of patients whose disease is not responsive to curative treatment

Thrush
Nursing Interventions

• Psychosocial issues
  – Uncertainty, fear
  – Isolation
  – Depression
  – Limited financial resources

• Reducing anxiety
  – Clarification and education about HIV and AIDS
  – Include patient and support person in planning care
  – Assess for suicidal ideation
  – Support groups

Nursing Interventions

• Minimize social isolation
  – Social stigma
    • Associated with homosexuality, drug use, and sexual transmission
  – Sharing diagnosis with others
    • Need to choose carefully
  – Support groups
    • Patients
    • Significant others

Nursing Interventions

• Assisting with grieving
  – Listening
  – Explore feelings, fears, and treatment options
  – Significant others and family members
    • May experience fear, anger, embarrassment, and shame

• Confidentiality
  – Diagnosis should be carefully protected
    • Need-to-know basis
      – Not every health care worker needs to know diagnosis
      – Universal precautions should be used with every patient
Prevention of HIV Infection

• Education
  – Best means of prevention
  – Counsel about HIV testing, behaviors that put people at risk, and how to reduce or eliminate those risks
  – PT must be able to discuss behaviors
    • Forthright, relaxed, and nonjudgmental

Prevention of HIV Infection

• Other methods to reduce risk
  – HIV-infected person should be given the following instructions
    • Do not give blood, donate organs, or donate semen
    • Do not share razors, toothbrushes, or other household items that may contain blood or other body fluids; shower instead of tub bath
    • Avoid infecting sexual and needle-sharing partners
    • Do not breastfeed

Condom Use

- Should be used consistently and correctly
- Should be either latex or polyurethane
- Should be discussed with your partner before the sexual act begins
- Should be the responsibility of both partners for the protection of both partners
- Male and female condoms are available
Prevention of HIV Infection

- HIV testing and counseling
  - Patient should not be pressured to be tested
  - Informed consent must be obtained before drawing blood
    - Consent laws are established by state laws
  - Confidential or anonymous testing

- Barriers to prevention
  - Denial
    - “It won’t happen to me”
  - Ignoring risks
  - Cultural and community attitudes, values, and norms

People Infected with HIV

- Can look healthy
- Can be unaware of their infection
- Can live long productive lives when their HIV infection is managed
- Can infect people when they engage in high-risk behavior

Prevention of HIV Infection

- Decreasing risks related to sexual transmission
  - Eliminate the risk of exposure to HIV through semen and cervicovaginal secretions
    - Abstaining from all sexual activity
    - Limit sexual behavior in which the mouth, penis, vagina, or rectum come into contact with blood, semen, or cervicovaginal secretions
      - Massage; telephone sex
      - Masturbation; mutual masturbation
      - Use of barriers
Prevention of HIV Infection

- Decreasing risks related to drug use
  - Stop the use of injectable drugs
  - Provide drug treatment opportunities
- If drugs are going to be injected
  - Use sterile needles and equipment
  - Instructions on cleaning needles and equipment

Prevention of HIV Infection

- Decreasing risks of occupational exposure
  - Risk is very low
  - Handwashing is the single most effective means of preventing the spread of infection
  - Universal Precautions and body substance isolation
  - High-risk exposure treatment
    - Begin antiretroviral medications within 1-4 hours for at least 4 weeks
    - HIV testing: baseline, 6 months, and 12 months

HIV and Sexually Transmitted Diseases

- STD’s increase infectivity of HIV
  - A person co-infected with an STD and HIV may be more likely to transmit HIV due to an increase in HIV viral shedding
  - More white blood cells, some carrying HIV, may be present in the mucosa of the genital area due to a sexually transmitted infection
HIV and Sexually Transmitted Diseases

- STD’s increase the susceptibility to HIV
  - Ulcerative and inflammatory STD’s compromise the mucosal or cutaneous surfaces of the genital tract that normally act as a barrier against HIV
  - Ulcerative STD’s include: syphilis, chancroid, and genital herpes
  - Inflammatory STD’s include: chlamydia, gonorrhea, and trichomoniasis

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Nursing and the History of HIV Disease

- As early as 1979, physicians in New York and California were noting cases of Pneumocystis carinii pneumonia (PCP) and Kaposi’s sarcoma (KS).
- These two diseases were occurring at alarming rates in homosexual men whose immune systems were failing.
- The Centers for Disease Control and Prevention (CDC) soon learned that this immune disorder was also affecting intravenous drug users and hemophiliacs, and later found that it also affected heterosexual men and women.
- It is known that the human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) occurred as long ago as the late 1950s.
Nursing and the History of HIV Disease

• In 1986, the virus was named the human immunodeficiency virus (HIV) and two viruses were identified: HIV-1 (found throughout the world and responsible for the majority of HIV infection cases) and HIV-2 (found primarily in West Africa).

• In 1987, the CDC reported three cases of occupationally acquired HIV infection in healthcare providers. “Universal Blood and Body Fluid Precautions” guidelines were then developed for the prevention of occupational exposure.

• Currently, a broad spectrum of individuals, from children to adults, and crossing all socioeconomic strata, is affected by this disorder.

Nursing and the History of HIV Disease

• Significance of the problem
  – 120,000,000 people will die of AIDS in the next 25 years.
  – 1 million people are infected in the US
  – 252,000-312,000 are unaware they are infected
  – In all 25,000,000 people have died worldwide and 40 million have become infected.
  – Population of Napa is 100,000. 100,000 divided into 25,000,000 equals the death of all the people in Napa. Napa population will have died off 2,500 times to equal the number who have died from AIDS thus far.