HIV, Aging, and Opportunistic Infections

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Today’s Objectives

- Identify the unique needs of individuals living with HIV and aging
- Discuss common opportunistic infections and recommended prophylaxis regimens
- Identify common presenting signs and symptoms of opportunistic infections
HIV and Aging

- Antiretroviral Therapy (ART) has provided people living with HIV longer life expectancies

- According to the CDC, people living with HIV ages 55 and older were ¼ or 313,200 of the 1.2 million people in the US diagnosed with HIV in 2012

- Among older adults living with HIV, non-AIDS associated conditions are more common
HIV and Aging

- Common non-AIDS associated conditions found among older persons living with HIV include:
  - Cardiovascular disease
  - Lung disease
  - Certain cancers (anal, liver, lung, Hodgkin's lymphoma)
  - HIV-Associated Neurological disorders (HAND)
  - Livers disease, including Hep B/C, among others
HIV and Aging

- **HAND**
  - It is estimated that >50% of people with HIV have HAND
  - Deficits can be seen in:
    - Attention
    - Language
    - Motor skills
    - Memory
    - May experience psychological distress or depression
HIV and Aging

- Liver and kidney function decrease with age
- May make it harder for the body to process HIV medications
  - Increasing the risk of side effects
- May have other medical conditions (hypertension, diabetes, hyperlipidemia)
  - Increasing the risk of drug-drug interactions
  - Increasing the risk of side effects
  - Dosing of medications, including ART’s may need to be adjusted
HIV and Aging

- Diseases found in HIV negative people that occur in their 60-70’s are being seen in people living with HIV in their 40-50’s

- These conditions can include:
  - weakened bones
  - Loss of muscle and redistribution of fate
  - Cardiovascular disease
  - Liver disease
  - Kidney disease
HIV and Aging

- According to the CDC, older people in the US are more likely to be diagnosed with HIV infection later in the course of their disease
  - This means they’re starting treatment later
  - Suffering more immune-system damage
  - Both can lead to poorer prognosis and shorter survival after diagnosis
  - One study looking at diagnosis from 2004-2009 found a survival rate of 12 months after diagnosis to be 99% for those ages 20-24 and 73% for those diagnosed >65 years of age
HIV and Aging

- People aged 50 and older have many of the same HIV risk factors as younger people, but may be less aware of their risk.

- Healthcare providers may not always test older people for HIV infection.

- Older people may mistake their HIV symptoms for those of normal aging and not consider HIV as the cause.
HIV and Aging

- Many widowed and divorced people are dating again and may believe that HIV is not an issue for their peer group
- Women no longer worry about becoming pregnant after a certain age and may be less likely to use a condom
- Age-related thinning and dryness of vaginal tissue may raise older women’s risk for HIV infection
- Erectile dysfunction medications facilitate sex for older men who otherwise would not have been capable of vaginal or anal intercourse
HIV and Aging

- Initiation of ART needs to be timely because the immune systems of people >50 tend to recover more slowly

For more information on HIV and Aging:

http://www.cdc.gov/hiv/group/age/olderamericans
Opportunistic Infections

- ART has brought many advances in HIV treatment; however, OI’s still exist and can be life threatening for people living with HIV
  - Unaware of HIV infection
  - Psychosocial/economic factors
  - Some individuals taking ART do not attain adequate virologic and immunologic response
    - Retention in care
    - Poor adherence
    - Unfavorable pharmokinetics
    - Unexplained biologic factors
Opportunistic Infections

- “OIs are infections that occur more frequently and are more severe in individuals with weakened immune systems...”
- When a person living with HIV gets certain infections, called OIs, he or she will get a diagnosis of AIDS
- When an individual’s CD4 count is 200 or less, that is also a diagnosis of AIDS
Opportunistic infections

- Common OIs for individuals living in the US:
  - Pneumocystis carinii pneumonia (PCP)
  - Mycobacterium avium complex (MAC)
  - Cytomegalovirus diseases, particularly retinitis
Pneumocystis Carinii Pneumonia (PCP)

- PCP
- A lung infection caused by a fungus

Initial presentation can include:
- Progressive dyspnea
- Fever
- Non-productive cough
- Chest discomfort
- Hypoxemia - can be severe and life threatening
Pneumocystis Carinii Pneumonia

- Diagnosis
  - Difficult
  - Blood tests, chest x-rays can be unremarkable
  - Bronchoalveolar lavage or induced sputum can confirm diagnosis
Pneumocystis Carinii Pneumonia

- Chemoprophylaxis: to prevent infection in those with weakened immune systems
  - CD4<200
  - Or history of oropharyngeal candidiasis
  - CD4 200-250 may be considered
  - TMP-SMX
    - Drug of choice
    - One double strength tablet daily
Pneumocystis Carinii Pneumonia

- Chemoprophylaxis continued...

- Alternate therapies:
  - Dapsone 100mg daily
  - Aerosolized pentamadine 300mg per nebulizer monthly
  - Atovaquone 1500mg daily

- Chemoprophylaxis can be discontinued once the CD4 >200 for at least 3 months

If not on ART, a patient should ideally initiate medications within two weeks or as possible after a diagnosis of PCP
Pneumocystis Carinii Pneumonia

- Treatment:
  - TMP-SMX
    - Treatment of choice
    - Treatment dose should continue for 21 days, then prior recommended chemoprophylaxis dose until discontinuation
  - Dapsone
    - Alternative treatment
  - Adjunctive Treatment
    - Can include corticosteroids, such as prednisone
    - Should be started as early as possible and within 72 hours
Mycobacterium Avium Complex (MAC)

- OI with MAC is typically a disseminated, multi-organ infection
- Mycobacterium is found in the environment, including in soil and dust particles
- MAC disease usually seen in patients with CD4<50

- Presenting signs and symptoms can include:
  - Fever
  - Night sweats
  - Weight loss
  - Fatigue
  - Diarrhea
  - Abdominal pain
Mycobacterium Avium Complex

- Initial lab testing:
  - Anemia, more pronounced than usually seen in HIV infection
  - Elevated liver alkaline phosphate levels
  - Blood cultures

- Other common findings:
  - Hepatomegaly
  - Splenomegaly
  - Lymphadenopathy
Mycobacterium Avium Complex

- Diagnosis:
  - Clinical signs and symptoms
  - Isolation of MAC from cultures of blood, lymph node, bone marrow, or other sterile tissue/body fluids
Mycobacterium Avium Complex

- Chemoprophylaxis:
  - Should be initiated in individuals with a CD4 <50
  - Azithromycin 1200mg weekly or 600mg twice weekly is the preferred regimen
  - Clarithromycin 500mg twice daily can be used as an alternate therapy
  - Can be discontinued when CD4 >100 for at least 3 months
Mycobacterium Avium Complex

Treatment:
- 2 or more antimycobacterial drugs
- Clarithromycin + ethambutol (500mg BID + 15/mg/kg daily)
- Azithromycin can be substituted for clarithromycin if needed (500-600mg daily + 15/mg/kg daily)
- Repeat blood cultures 4-8 weeks after treatment
Cytomegalovirus (CMV), particularly retinitis

- Can infect multiple parts of the body
- Today will discuss the sight-threatening infection retinitis (infection of the retina in the back of the eye)
- CMV retinitis is a medical emergency because it can cause blindness if not treated promptly
- 2/3 of patients present with unilateral disease
CMV retinitis

Initial signs and symptoms:
- Peripheral: floaters and peripheral visual field defects
- Central: decreased visual acuity and central field defects

Initial therapy should be individualized:
- Location
- Severity of lesions
- Level of immunosuppression
- Other factors: including concomitant medications, ability to adhere to regimen, etc.
Diagnosis:
- CMV viremia
  - DNA in vitreous in 80% of patients
  - DNA in blood in 70% of patients
- Made on clinical criteria and response to therapy
CMV Retinitis

- Treatment:
  - Intravitreal injection of ganciclovir or foscarnet

- Chronic maintenance therapy:
  - Valganciclovir 900mg twice daily x 14-21 days; then 900mg daily
  - Treatment usually 3-6 months
  - Can discontinue maintenance therapy after 3-6 months if lesions are inactive and CD4 >100 for 3-6 months
Resources

- Opportunistic infections/guidelines:
  http://aidsinfor.nih.gov/guidelines

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