Sexual Health in HIV and Aging

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Educational Objectives
By the end of the session, learners will be able to:

1. Describe two risk factors for sexually transmitted diseases (STDs) including HIV in older adults.
2. Choose three questions that are part of a sexual assessment in older adults.
3. Outline two indications and two lab tests required for the initiation of preexposure prophylaxis (PrEP) to prevent HIV transmission.

Suggested reading:
1. Gornin M. Sexual dysfunction in older adults. Available at: [link]
2. American Academy of HIV Medicine (online). Sexual health in HIV and aging. Available at: [link]

CASE ONE:

Mrs. Surprise is a 55-year-old woman with a 48-pack-year smoking history but no significant past medical history who develops progressively worsening dyspnea on exertion over 2 weeks. She received prescription for inhalers and steroid taper from an outpatient clinic last month, but symptoms returned after the steroid taper was completed.

In the emergency room, her temperature is 36.5 °C, pulse 114, respiratory rate 20, oxygen saturation is 94% on 2L. Chest X-ray shows diffuse reticular opacities bilaterally. Her labs are otherwise normal, including white blood cell counts and arterial pH, although her lymphocyte percentage is 8.8. Patient is admitted for pneumonia with COPD exacerbation, treated with antibiotics and steroids.

As part of the workup, Mrs. Surprise undergoes chest CT angiogram to rule out pulmonary embolism, which showed diffuse ground-glass opacities throughout both lungs. Subsequently, diagnostic bronchoscopy is performed, which shows pneumocystis carinii. Rapid HIV testing is positive.
Questions:

1. **How common is HIV in patients over 50 years old? How common are new HIV infections?**
   - According to the Centers for Disease Control (CDC), 37% of HIV-infected patients are over 50 years old. By mid-decade, the percentage will increase to 50%. Moreover, 17% of new cases of HIV infection (1 in 6) occur in adults over 50 years old (1).

2. **How often do older adults have sex? What about HIV-infected older adults?**
   - Health-care professionals often underestimate the desire for and the level of sexual activity in older adults, thereby neglecting their risk for sexually transmitted diseases (STDs) exposure (2). This results in decreased discussions regarding safe sex practices or healthy sexual behaviors.
   - **Uninfected patients:** There is a general decline in the frequency of sexual activity in both sexes after the age of 65, although 50-80% of patients over 60 continue to have sexual intercourse at least once a month (3). Physical health appears to be the most influential factor for older men, while the quality of the relationship is the most important for older women (4).
   - **HIV-infected patients:** According to Golub et al (5), about half of HIV-infected adults over 50 are sexually active.

3. **What factors put older adults at risk of STDs, including HIV?**
   - **False sense of security:** Data from the CDC found that individuals over 65 account for less than 1% of reported STDs, including Chlamydia, gonorrhea and syphilis (6). However, because STDs can be perceived as a disease of the young, older adults may forgo safe sex practices based on this perception. Studies have found that 41% of sexually active older adults with HIV have unprotected anal or vaginal sex in the prior 3 months, with the lowest condom use rates among gay and bi-sexual males (5). This likely contributes to the high rates of new HIV infection in older adults.
   - **Lack of sexual education:** Many older people never received the sex education that has routinely been provided to younger individuals in recent decades. In addition, very few public awareness campaigns about safe sex practices are targeted to seniors.
   - **Decreased use of barrier protection:** Barrier contraceptives may have lower utilization rates in older adults, since they are not needed in post-menopausal women to prevent pregnancy.

4. **What do you say to Mrs. Surprise, who does not yet know that she has HIV?**
   - You will be delivering bad news and the SPIKES framework should be used (7). The following topics should be discussed:
     - It will be important to convey to Mrs. Surprise that HIV is a manageable chronic condition and no longer a death sentence, and that she will be supported throughout her disease.
You should ask if there is anyone that she would NOT want to be informed of the new HIV diagnosis, and document her decisions clearly so that all of her health-care providers are aware. If she would like anyone to be informed, you should offer to help her communicate the news to her loved ones if she prefers.

It will be important to assess risk factors and identify potential routes of HIV infection. It is also important to discuss partners/contacts, since many states require partner notification. An example guideline from the state of New York is listed here: http://www.health.ny.gov/diseases/aids/providers/regulations/reporting_and_notification/question_answer.htm#seventeenthru25

CASE ONE CONTINUED:

You inform Mrs. Surprise of her newly diagnosed HIV infection, using the SPIKES method. Mrs. Surprise states that she was last sexually active about 4 years ago, with a partner whom she believes gave her HIV. She denies drug use or prior blood transfusion. Her only family member is her daughter. She asks that the medical team do not tell her daughter of the HIV diagnosis.

CASE TWO:

Mr. Newlove is a 62 year-old homosexual man with HIV, well-controlled on elvitegravir, cobicistat, emtricitabine and tenofovir. He also has a history of hypertension, well-controlled on metoprolol 25mg daily, and depression on venlafaxine 75mg daily. During a regular follow-up visit, Mr. Newlove divulges that he is starting to go out on dates again, after ending a long-term relationship with his partner 9 months ago.

5. What questions would you ask to assess Mr. Newlove’s sexual health and behaviors?
   - Possible questions include (8):
     - Do you have any questions or concerns about your sexual functioning?
     - Have you noticed any problems or changes with your ability to have or enjoy sex?
     - Has your present illness (or medications) affected your sexual function?
     - Do you ever have pain with intercourse?
     - Do you have any difficulty achieving orgasm?
     - Do you have any difficulty obtaining or maintaining an erection? Do you have any difficulty with ejaculation?
     - Have you ever had any sexually related diseases?
How often do you use condoms?

What do you do to protect your partner from contracting HIV?

For uninfected patients: Do you have, or have you ever had, any risk factors for HIV? (Blood transfusions, needle stick injuries, intravenous drug use, STDs, partners who may have placed you at risk, exchanging money for sexual activity, use of alcohol or drugs in association with sexual activity)

CASE TWO CONTINUED:

Mr. Newlove admits to an inability to achieve and sustain an erection that is adequate for sexual function. He also mentions that his new love interest is a 58-year-old homosexual man without HIV, and Mr. Newlove is concerned about preventing HIV transmission to his new partner.

6. What are age-related changes in sexual function in men? In women? What are common reactions to these changes?

- **Men**: Although men have a relatively stable sexual desire throughout their lives, they experience a gradual decline in testosterone production, which results in decreased amounts of seminal fluid during ejaculation, less reliable and less durable erections that require more stimulation to achieve and sustain, and increased refractory period by hours to days. When the testosterone level decreases to less than 200 ng/dl, patients suffer from hypogonadism, which occurs in between 35 to 70 percent of men over the age of 70 (9).

- **Women**: Age-related sexual changes in women are driven by menopause, which lasts between 2 to 10 years. It typically begins in a woman’s 40s and culminates in complete cessation of menses by the early 50s. Physiological changes associated with menopause include atrophy of urogenital tissue leading to decreased uterine and vaginal size, decreases in vaginal lubrication and vasocongestion, and a decline in the erotic sensitivity of nipple, clitoral and vulvar tissue during sexual activity. Menopause also results in changes in sexual function such as decline in libido, sexual responsiveness, uncomfortable intercourse or dyspareunia, or decreased sexual frequency.

- Patients may react in positive or negative ways to these changes, depending on their ability to adapt and understand that certain changes in sexual function are normal:
  - **Women**: With menopause, a woman may welcome the freedom from worry about contraception and unwanted pregnancy, while another may grieve the loss of potential motherhood, particularly if they never had children.
  - **Men**: Declines in erectile function can be viewed as threatening to men’s sense of masculinity and lead to excessive worry, anger,
depression, while another man may be able to shift his focus from sexual intercourse as the end-all and be-all of sexuality to pleasurable sensual intimacy of foreplay.

7. How would you approach Mr. Newlove’s erectile dysfunction?
- Erectile dysfunction in HIV-infected patients should be evaluated using the same approach as that in the uninfected. However, the following should be considered in Mr. Newlove:
  - Elderly patients are at risk of polypharmacy, and erectile dysfunction may be a side effect of medications. Usual culprits include beta-blockers, diuretics, selective serotonin-reuptake inhibitors, and psychotropic medications. Since Mr. Newlove is on metoprolol and venlafaxine, you can avoid the prescribing cascade by switching these medications to other classes that can achieve similar control of hypertension and depression, to see if his erectile dysfunction improves.
  - Since cobicistat inhibits the CYP3A system, it may increase serum concentration of phosphodiesterase-5 enzyme inhibitor such as sildenafil. For erectile dysfunction, sildenafil doses should be limited to 25mg per 48 hours.

8. How do you counsel Mr. Newlove about preventing HIV transmission to his uninfected partner? Would you recommend preexposure prophylaxis (PrEP)? How do you counsel Mr. Newlove about PrEP and how would you monitor the treatment?
- Mr. Newlove should be counseled the viral load suppression is highly protective against HIV transmission (96% reduction shown in heterosexual partners) (10). Therefore, it is important that Mr. Newlove is adherent to his ART regimen. You should also educate Mr. Newlove to use condoms with every sexual encounter.
- Mr. Newlove and his partner should be counseled regarding daily oral preexposure prophylaxis (PrEP), which consists of tenofovir disoproxil fumarate (TDF) 300 mg and emtricitabine (FTC) 200 mg. However, unless Mr. Newlove’s partner is also your patient, you should not prescribe PrEP and ask Mr. Newlove’s partner to seek PrEP from his regular doctor. In essence, PrEP should not be prescribed to an uninfected person not in your care, since monitoring and follow-up will be challenging.
- Indications: PrEP is indicated in the following patients (11):
  - Sexually-active adult men who have sex with men (MSM) without acute or established HIV infection, at substantial risk of HIV acquisition, defined as not in a monogamous partnership with a recently tested HIV-uninfected man with at least one of the following: any anal sex without condoms in the past 6 months, any STDs diagnosed in the past 6 months, or in an ongoing sexual relationship with an HIV-infected male partner (grade IA) (12).
- Adult heterosexually active men and women without acute or established HIV infection, at substantial risk of HIV acquisition, defined as not in a monogamous partnership with a recently tested HIV-uninfected partner with at least one of the following: is a man who has sex with both women and men, infrequently uses condoms during sex with 1 or more partners of unknown HIV status who are known to be at substantial risk of HIV infection such as injection drug users (IDU) or bisexual male partner, or in an ongoing sexual relationship with an HIV-infected partner (grade IA) (13).

- Adult injection drug users (IDU) without acute or established HIV infection, at substantial risk of HIV acquisition defined with one of the following: any sharing of injection or drug preparation equipment in past 6 months, been in a methadone, buprenorphine or suboxone treatment program in past 6 months, or risk of sexual acquisition (grade IA) (14).

- **Lab testing:** Clinicians should consider the following tests prior to initiation of PrEP:
  - **HIV status:** clinicians should document a negative HIV antibody test result within the week before initiating PrEP, because receiving PrEP during an unrecognized acute infection can lead to resistance to TDF, FTC, or both. In patients with signs or symptoms of acute HIV infection in the prior 4 weeks who test negative, viral load or HIV antibody/antigen assay should be performed to rule out acute infection.
  - **Renal function:** Because TDF can cause decreases in renal function, with occasional cases of acute renal failure and Fanconi’s syndrome, baseline renal function should be checked prior to initiation of PrEP.
  - **Hepatitis B virus (HBV) infection:** Because both TDF and FTC are active against HBV, patients with active HBV infection who stop taking these medications can experience TDF-resistant HBV or reactivated HBV infection resulting in hepatic damage. As a result, it is important to document baseline HBV status, so that liver function can be monitored should patients stop taking PrEP.

- **Adherence:** Mr. Newlove’s partner should be counseled regarding the importance of adherence to PrEP. According to the STRAND trial, intracellular levels of the active form of TDF corresponded to an HIV risk reduction of 99% for 7 doses per week, 96% for 4 doses per week, and 76% for 2 doses per week (15). This result demonstrates that despite some “forgiveness” for occasional missed doses, a high level of prevention efficacy requires a high level of adherence to daily medication. To enhance adherence, patients should be educated about the medications to help anticipate and manage side effects, establish dosing routine that mesh with their work and social schedules, provide reminder system, and address financial/mental health needs that may impede adherence.

- **Missed medication:** Patients should be counseled to take a single missed dose as soon as they remember, unless it is almost time for the next dose, in which
case patients should skip the missed dose and continue with the regular dosing schedule. The importance of using condoms during sex, especially when medications are missed/stopped, should be reinforced.

- **Safe sex practice**: Patients should continue to receive client-centered counseling (in which content is tailored to a patient’s sexual risk behaviors and the situations in which risks occur), in conjunction with goal-setting strategies, to prevent transmission of other STDs not covered by PrEP.

- **Monitoring**: Once PrEP is initiated, patients should return for follow-up at the following intervals:
  
  o *To be done 1 month after initiation*: assess and confirm HIV-negative test status, assess for early side effects, discuss any difficulties with medication adherence, and answer questions.
  
  o *To be done at least every 3 months*: repeat HIV testing and assess for signs or symptoms of acute infection to document that patients are still uninfected with HIV, repeat pregnancy testing for women who may have become pregnant, provide a prescription or refill authorization of daily TDF/FTC for no more than 90 days until the next HIV test, assess side effects/adherence/HIV acquisition risk behaviors, provide support of medication adherence and risk-reduction behaviors, and respond to new questions and provide any new information about PrEP use.
  
  o *To be done at least every 6 months*: monitor creatinine clearance (a rise in serum creatinine is not a reason to withhold treatment if creatinine clearance remains ≥60 ml/min), and conduct STD testing recommended for sexually active adults (i.e. syphilis, gonorrhea, Chlamydia).
  
  o *To be done at least every 12 months*: evaluate the need to continue PrEP as a component of HIV prevention.
Additional reference:
15. Anderson P LJ, Buchbinder S, Guanira J, and the iPrEx study team. Interpreting detection rates of intracellular FTC-TP and TFV-DP: The iPrEx trial. 18th Conference on Retroviruses and Opportunistic Infections; 2011; Boston, Massachusetts.