HIV/AIDS: The Impact on Persons Age 50+

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Please take a look at the steps below; these will help you to progress through the course material, complete the course examination and receive your certificate of completion.

1. **REVIEW THE OBJECTIVES**

   The objectives provide an overview of the entire course and identify what information will be focused on. Objectives are stated in terms of what you, the learner, will know or be able to do upon successful completion of the course. They let you know what you should expect to learn by taking a particular course and can help focus your study.

2. **STUDY EACH SECTION IN ORDER**

   Keep your learning "programmed" by reviewing the materials in order. This will help you understand the sections that follow.

3. **COMPLETE THE COURSE EXAM**

   After studying the course, click on the "Course Exam" option located on the course navigation toolbar. Answer each question by clicking on the button corresponding to the correct answer. All questions must be answered before the test can be graded; there is only one correct answer per question. You may refer back to the course material by minimizing the course exam window.

4. **GRADE THE TEST**

   Next, click on "Submit Test." You will know immediately whether you passed or failed. If you do not successfully complete the exam on the first attempt, you may take the exam again. If you do not pass the exam on your second attempt, you will need to purchase the course again.

5. **FILL OUT THE EVALUATION FORM**

   Upon passing the course exam you will be prompted to complete a course evaluation. You will have access to the certificate of completion **after you complete the evaluation**. At this point, you should print the certificate and keep it for your records.

About the Author

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Introduction

Imagine for a moment that you are a nurse who floats, working today in an HIV clinic where you have not worked before. Your responsibilities include triage, taking vital signs, and escorting the patient to an exam room. The morning has gone along as expected, and now there are only two patients left. When you reach the chart rack you notice that the next chart is damaged and only the last name and social security number is visible. You wonder why things are never easy, but you grab the chart and go into the waiting room. Before calling out the person's name you quickly survey the room. To the left is a young woman with two small children and a baby. You assume she is the mother because she looks exhausted. The children are busy and she is trying to keep them quiet. The baby is crying. Slightly to the right is a large man with long hair and tattoos on every bit of exposed skin. He is wearing a lot of leather with chains as accessories. He has a beard. The only other person in the room is a small elderly woman who is neatly dressed and knitting. Her hair is pulled back into a tight knot at the nape of her neck. She looks familiar at first, maybe like your second grade teacher, or the woman at the library or…maybe the elderly woman who sat next to you in church last week. You subconsciously decide that she is one of the volunteer drivers who bring people to their clinic appointments. She smiles when you come into the room.

"Madison," you call out. To your surprise it is the elderly woman who stands and follows you into the triage room.

Objectives

Upon completion of this course, the learner will be able to:

- State the incidence and most common route of exposure of HIV/AIDS in the 50+ age group.
- Discuss factors that contribute to the incidence of HIV/AIDS in the elderly.
- Describe common symptoms of HIV/AIDS that are missed and/or attributed instead to aging.
- Discuss mental status changes from AIDS dementia complex.
- Identify questions that can be asked during a health/sexual history that facilitate the identification of risk factors for HIV/AIDS.
- Discuss antiretroviral therapy in the elderly.

Background

At the beginning of the HIV/AIDS pandemic, it appeared that the primary population who were at risk for HIV/AIDS infection was gay white males. Soon the virus spread to the drug community, and finally rates for infection through unprotected heterosexual sexual relations began to soar. Today HIV/AIDS is a condition that has in some way either infected or affected almost anyone. We have read about it in the paper, we have seen it on TV, or worse, we have experienced it firsthand among our families, our friends, ourselves. Even in small rural communities HIV/AIDS is a threat. It is no longer safe to assume that "we don't have to worry about that here." It is not just an urban disease. It is everywhere, affecting everyone.

In 1997, the Centers for Disease Control (CDC) released surveillance data that showed the first decline in AIDS infections since the early 1980s. This was very good news, with one surprising twist. The incidence of AIDS in the age 50 years+ group had not decreased proportionately with the others. Instead, it had increased from 10% to 22%. In fact, to date, there have been more cases of AIDS among the 50+ age group than among children in the United States (Centers for Disease Control [CDC], 2008b).

Researchers, clinicians, and the general public were shocked with this information. In many early research studies HIV/AIDS infection among the elderly was considered rare and almost exclusively due to transfusion with infected blood. In a review of 60 HIV/AIDS studies from 1984 to 1994, almost half (48%) did not even mention a route of infection among the elderly, infection by transfusion was assumed (Gueldner, 1995). Healthcare professionals had seen some older folks among their patients, but they were considered by many to be the exception to the rule. Soon after CDC released their data the news spread to the media, and several television broadcasts focused on this new HIV/AIDS phenomena. There were articles in the leading newspapers and magazines with titles such as, "HIV/AIDS Epidemic Hits Retirement Communities Hard." Still, many people, especially the elderly themselves, refused to believe they were at risk for infection.

Demographics and Routes of Infection in the 55+ Age Group

As of December 2006, the CDC reported about 124,000 U.S. cases of individuals age 55 and older at the time of a diagnosis of AIDS (CDC, 2008a). According to that data, the majority of those infected were male, predominately white, in the 55 to 64 year old age group. Among women, the highest incidence was among the black 55 to 64 year old age group. Unprotected sexual exposure continued to be the most common route of infection with the greatest incidence among homosexual men (CDC, 2008a). See Table 1 for a more comprehensive breakdown by age at time of diagnosis.

Table 1. *Cumulative AIDS Cases by Age at Diagnosis*

AGE	New HIV Cases	New AIDS Cases	Cumulative AIDS Cases
50-54	2718	3687	59,907
55-59	1438	2071	32,190
60-64	714	955	17,303
65+	618	835	15,074
Totals	5488	7548	124,474

Adapted from: CDC, 2008a

As a means of comparison, in 1985 a total of 597 men and 26 women were age 50 to 59 when diagnosed with AIDS, and 159 men and 38 women were age 60 and over. Those numbers combined amounted to about 800 total cases in the 50+ age groups. There are several reasons to consider when attempting to explain the steady rise of infection rate in this age group.

In 1985 there were about 8,000 cases of AIDS reported in the U.S. In 2006 there were over 37,000 people living with AIDS in the U.S. It is important to note that those numbers do not include persons infected with HIV (AIDS is defined as having a CD4 lymphocyte count of <200 or an AIDS defining illness). Until recently, only documented cases of AIDS required mandatory reporting. Estimates were made of the additional possible cases of HIV infection from numbers obtained through testing sites. Since most of these tests were done confidentially or anonymously it was hard to determine an accurate infection rate, knowing that people might have multiple tests and/or be tested at multiple sites. In addition, after experiencing an acute retroviral syndrome during seroconversion, which can easily be mistaken for the flu or other viral illness, the majority of people remain symptom free for up to ten years. That means at any time, there is a high probability that a sizable number of people in the general population do not know they are HIV infected. CDC estimates that between 25 and 30% of HIV infected people in the U.S. are not aware they are infected.

Another factor to consider when attempting to identify causes for the increased incidence of HIV/AIDS in the elderly is technological advancements. This may have impacted the elderly in two ways. First, advances in medical science have helped to prolong life expectancy and improve the overall quality of life in the U.S. Twenty years ago someone who was seventy was considered old. Now, thanks to improved medical procedures, health education, and treatment modalities, there are many 70-year-olds who are very active and in good health. Seniors continue to work, travel, socialize, and have sexual relationships with spouses and/or significant others. In Western culture, where value is placed on youth and beauty, the sexual needs and actions of the elderly have not always been recognized. There is a myth that sexual desire passes with youth. However, a survey conducted in 1998 by the National Council on the Aging, which examined sexual activity among persons age 60 and older in the U.S., did not support this assumption. In fact, results showed that the majority of men (71%) and women (51%) surveyed reported that they were still sexually active (Dunn & Cutler, 2000). Many older people who are sexually active do not use barriers since they consider them necessary only to prevent pregnancy. But in fact, older women may be at a greater risk for acquiring HIV due to a naturally thinning of the vaginal mucosa. Second, people have become much more able to travel both nationally and internationally with greater ease and frequency. This mobility also increases the likelihood of infection.

A Case History

Let's consider the following example.

Suppose a woman, Mary, from Montana (a low endemic area), traveled to Florida (a high endemic area) to spend winters in a retirement community. Before going south, she and her long-term significant other, William, mutually decided to end their relationship. In Florida she met a man from New York City, John, with whom she had a new relationship. When the winter ended she returned to Montana where she met Paul, a retired school teacher who had recently moved from southern California to be near his daughter. She did see William several times as well, but he was reluctant to settle back into their previous relationship. Several months after her return home Mary began to feel ill. Her symptoms included: fever, malaise, body aches, anorexia, and diffuse lymphadenopathy. A week later she went to see her Primary Care Provider (PCP) who agreed to "squeeze her in" that afternoon. After a brief examination and routine labs, she was assured that she probably had a viral syndrome. Although her symptoms lingered for several additional weeks, she felt assured that nothing serious was wrong.

Three years later a male friend of Mary's was in a car accident, and a group of his close friends, including Mary, from the senior citizen center decided to donate blood. About a month later, Mary received a letter from the Red Cross telling her that an abnormality was found when testing her blood and urging her to see her own PCP. She was frightened, fearing she had cancer. Her PCP was puzzled since previous testing and assessments had shown Mary to be in good health. This time the PCP completed a full assessment, including a sexual history. Mary lived in a small town, and she was somewhat reluctant to give out personal information. She did not see how her sexual activities were related to a disease in her blood. But, she was worried, and finally answered the PCP's questions honestly. It was suggested that she be tested for several possible diseases including HIV, and while she thought this was a waste of time and money she reluctantly agreed.

When the HIV test returned positive, Mary was shocked. She had assumed that you could recognize someone who was HIV positive from the way they looked. She had seen pictures in magazines and on television of their pitifully thin faces and the sunken eyes of some living in Africa. Yes, she had seen movies about addicts, but she did not know people like that herself. She lived in Montana, and her friends were all from church or the senior citizen center. The PCP asked about William, her friend in Montana. She replied that she had known William for about 35 years and had dated him exclusively for about five years. Then she mentioned John, the man she met in Florida who was originally from New York City. She did not know him that well, but she was confident that he was a good man. More importantly, he looked very healthy and played golf everyday. Finally she mentioned Paul, her new boyfriend. He was a retired schoolteacher, she stressed, not the type to have HIV/AIDS. The PCP suggested they use the confidential partner notification system to contact the men encouraging them to be tested. She reluctantly agreed since she felt too upset and embarrassed to call them herself.

John called her several months later to tell her that he was infected with HIV. After he delivered the news, there was silence on the phone. He told her he was very sorry, and wanted to let her know so that she could also be tested. She asked what made him go for the test, and he related that he had been contacted about an anonymous partner who had an infectious disease. He was also shocked when given the results, and wanted to personally warn her. He apologized profusely, stressing again and again that he never suspected that he had the disease when they were together in Florida. She tried to hide her anger, but was not friendly and kept the call short. She was sure he had infected her with a deadly disease. Soon William and then Paul called with a story that was almost word for word the same as John's. She was confused. What was the common denominator for these three men who all lived in geographically diverse areas?

What Mary did not know was that her significant other, William, was not as monogamous as she was. William had traveled extensively in his work as a computer analyst and took advantage of sexual opportunities, occasionally even hiring prostitutes, while he was away from his small Montana town. Since each encounter was with a different woman he felt his chances of getting anything was small. In fact, several times after returning from his trips he was treated for an STD. Mary may have been infected

by him as many as eight years earlier. Her later viral syndrome may well have been just that. Ironically, Mary was very angry with John, whom she had decided was the person by whom she was infected. In fact, both John and Paul were infected by having unprotected sexual relations with Mary. William's lack of knowledge and failure to use a protective barrier had exposed and possibly caused many women to become infected with HIV. Similarly to Mary, these women, once infected, continued to unknowingly spread the virus to others.

HIV Knowledge in Persons Age 50+

The majority of persons age 50+ do not engage in high-risk behaviors for HIV/AIDS and therefore most do not see themselves at risk (Lindau, Leitsch, Lundberg, & Jerome, 2006). Even when they are identified at risk, older people are unlikely to change those behaviors. Unprotected sexual relations continue to be the most common route of infection among the 50+ age group. In fact, older women are much more likely than younger women to never have used a condom (Lindau et al., 2006). In this age group, the use of condoms is often perceived as a means to prevent pregnancy rather than to protect against sexually transmitted diseases (Maes & Louis, 2003). In one study, only 28% of participants age 50 to 64 believed that condoms are very effective in preventing HIV/AIDS (Mack & Bland, 1999).

Older women have less overall HIV/AIDS knowledge than younger women (Alkers, Bernstein, Henderson, Doyle, & Corbie-Smith, 2008). Some believe that HIV/AIDS can be spread by sharing a bathroom, eating utensils, or being coughed on by someone who is infected (Zablotsky, 1998). This misinformation yields poor prevention results. In addition, it causes fear of transmission among elderly persons who are already infected with HIV/AIDS and want to take precautions not to infect others. Lack of knowledge can result in fear and isolation at a time when support is desperately needed. HIV/AIDS education has only been focused on the age 50+ age group in the past few years following release of the 1997 CDC data that showed them to be a population at risk.

HIV Testing in Adults Age 50+

In September 2006, CDC revised their HIV testing recommendations to include routine testing of people ages 13 to 64 in an attempt to identify the estimated 25% of persons infected with HIV who have not been tested. Based on their recommendation, Alkers et al. (2008) conducted a study of older women from an area with high prevalence rates of HIV/AIDS to determine if the cut off age of 64 years was adequate. Women age 50 and older (Range 50 to 84 years) who spoke English were enrolled from a general medicine clinic and asked to complete a 68 item questionnaire. Overall, subjects had low HIV knowledge and risk perception scores while engaging in moderate to high risk behaviors. When asked about previous HIV testing, younger women were more likely to respond positively than older women (Ages 50 to 54, 54%; 55 to 59, 49%; 60 to 64, 37%; 65+, 16%). Women who had a provider who had suggested having a test in the past were more likely to have been tested.

Risk factors identified in this group of subjects included: partner with a history of intravenous drug use; sexual partner with HIV; history of exchanging sex for money; having multiple sexual partners; and exposure to blood products. The authors suggested that providers should continue to conduct a full sexual and HIV risk history on patients of all ages, and encourage HIV testing of anyone with a history of risk behaviors regardless of their age.

Characteristics Specific to the HIV/AIDS Infected 50+ Age Group

HIV/AIDS in the elderly is sometimes considered to be an "imposter disease." That is because the symptoms mimic those of other age related diseases, often causing a delay in diagnosis. In the Harlem Hospital study (El-Sadr & Gettler, 1995) HIV-1 antibody testing was performed on samples of all patients who were 60 years of age or older at their death between the years 1992 and 1993. Slightly more than five percent were HIV positive (n=257), although no mention of suspicion for HIV was mentioned in their medical records. The most common causes of death were pneumonia and dementia, while other AIDS defining illnesses may have gone undiagnosed. Without a thorough risk assessment, common symptoms related to HIV/AIDS may be missed and/or attributed instead to aging. These include:

- Pancytopenia;
- Wasting;
- GI disturbances;
- Dementia;
- Pneumonia;
- Anemia;
- Weight loss;
- Varicella zoster virus;
- Non-Hodgkin's lymphoma;
- Recurrent fungal infections.

Persons in the 50+ age group are less likely to know their route of infection than younger persons infected with HIV/AIDS. In one study, almost a fifth (19.3%) of persons over the age of 50 indicated that they did not know how they were infected, compared to less than one-tenth (9.3%) of respondents in the 13 to 49 year old group (Inungu, Mokotoff, & Kent, 2001). This is again related to an overall lack of HIV/AIDS knowledge, especially risk factors. In fact, older persons usually do not request an HIV test unless encouraged to do so by their healthcare provider regardless of their risk factors (Alkers et al., 2007). For this reason, the elderly are often diagnosed at a later stage of the disease when the prognosis is poorer. In addition, they are usually tested during a hospital admission after other more obvious etiologies have been ruled out.

Older women are at a greater risk of infection than their younger counterparts because of the friability of the vaginal mucosa after menopause. The lack of estrogen may result in tears in the mucosa facilitating the entry of HIV. Older gay men who are the receptive partners during anal sex may also develop tears in the anal mucosa and are at an increased risk of infection.

It appears that there is a natural decrease in immune function that is associated with aging. For example, ninety percent of flu deaths occur in elders greater than the age of 65 (CDC, 2008c). This may be due to the decreased ability of the older adult to replace T cells. This phenomenon may explain the shorter progression in time from HIV to AIDS and from AIDS to death among this age group. There is some evidence now that these trends may be slowed due to advances in antiretroviral therapy, but research studies continue to have conflicting results on this topic.

Mental Status Changes in the Elderly

Mental status change is something that is commonly associated with older age. People often joke about getting older when they find themselves to be more forgetful or less able to recall events associated with short-term memory. In fact, it has been estimated that there are more than 600,000 cases of advanced dementia in the United States. These cases occur most often among people age 75 and older. We must not assume all mental status changes in the elderly are caused by dementia. In fact, there are several other etiologies that must be considered before a definite diagnosis is made, including AIDS and opportunistic infections related to immunosuppression.

Dementia is a syndrome that presents as a generalized decline in mental functioning, including memory and cognitive ability, without the loss of consciousness. The progression of the disease is slow, with symptoms worsening over months or years. There are several etiologies for dementia including: degenerative diseases of the nervous system, diseases that affect blood vessels, masses or lesions in the brain, infectious processes, accumulation of fluid, head injury, and toxic reactions.

Alzheimer's is one of the leading causes of dementia accounting for 50% to 70% of all cases. The cause of Alzheimer's remains a mystery although there are currently several proposed theories. We know that nerve cells in the brain die causing difficulty in transmitting signals to the rest of the body. On autopsy, the brains of affected persons have been found to be atrophied with enlarged ventricles. Many times symptoms go unrecognized or are considered a normal slowing associated with the aging process. The most common symptoms include:

- Impaired memory;
- Inability to perform abstract reasoning;
- Poor judgment;
- Loss of motivation;
- Changes in personality;
- Difficulty with language and communication;
- Change from normal sleep patterns.

Dementia that results from toxic reactions or increased intracranial pressure may be treatable. To date, there is no known cure for Alzheimer's disease or vascular dementia (formerly called multi-infarct dementia).

AIDS dementia complex is the result of an infection of the central nervous system by HIV. The exact pathogenesis is not known, but it is widely accepted that the degree of dementia correlates with the amount of HIV in the cerebral spinal fluid (CSF). Initial onset is often unnoticed and progression of the disease is slow. The probability of developing AIDS dementia complex is more likely in patients who are severely immunocompromised and with older age. There are estimates that some degree of the complex has been detected in up to 90% of people with AIDS. Early symptoms mimic other age related dementias and can include memory loss, withdrawal, and depression. Later symptoms are more debilitating and include:

- Incontinence;
- Leg weakness;
- Ataxia;
- Psychiatric disorders;
- Loss of balance;
- Paraplegia.

Treatment with antiretroviral medications especially AZT, which crosses the blood brain barrier, has proved to be beneficial in improving neurocognitive functioning in AIDS patients. Without treatment prognosis is poor. Death usually results in cases of severe dementia within several months. Unless the CNS is specifically tested for HIV, a diagnosis of AIDS dementia may be missed.

Psychosocial Issues in the Elderly with HIV/AIDS

The elderly face many issues common among other age groups infected with HIV/AIDS. First, they must face the AIDS related stigma that is prevalent in society. For them, this may be more difficult since they may not be as aware or connected with community based HIV/AIDS organizations that can provide social support and services. Many of the elderly are already isolated, having lost family members and friends. Their lack of knowledge can isolate them further, making them afraid of infecting others they care about.

Many elderly live on fixed incomes and have limited transportation options. Often these hardships make it impossible to keep medical appointments and to eat a nutritious diet. They may take their medications less frequently than prescribed in order to “stretch out” their monthly allotment for prescriptions.

The elderly now grew up in a time that had values different from today. Many feel guilty, believing that their disease is a punishment. They are embarrassed to tell their children or friends because of the way they were infected. As one patient said so truthfully, “When you’re young, people say you’re sowing your wild oats and excuse any indiscretion. When you’re old, they just think you are a dirty old man.”

Depression, common among people living with chronic disease, is also more common among the elderly. The inability to reconcile loss, resolve life’s conflicts, and move toward a peaceful end of life often results in feelings of anger, and despair.

HIV Prevention Among the Elderly

Until recently few HIV prevention programs focused on education for the elderly. Most of the resources available were used to develop programs and interventions for gay men and intravenous drug users. Now there is evidence that the elderly are a population at risk, and nurses and other healthcare providers must spearhead efforts aimed at identifying risky behavior and promoting risk reduction.

In our society it can be considered improper to talk with others, especially the elderly, about their sexual activities and preferences. As healthcare providers we owe it to our patients to talk openly and to assess thoroughly for risks of HIV/AIDS infection. Below is a list of questions that can be included when taking a sexual history (Shaw, 2001):

- Do you consider yourself to be heterosexual, homosexual, or bisexual?
- Have you ever engaged in unprotected sex (without using a condom)?
  - If yes, how often? With whom?
- Have you and/or your partner ever used recreational drugs?
- Did you have a blood transfusion before 1985?
- Have you ever had an STD?
- Have you ever been hospitalized with pneumonia?
- Do you have recurrent fungal/infections?
- Have you ever used alcohol to excess?
  - If yes, when? How often?
- Have you ever known anyone with HIV?
  - How?

The HIV/AIDS Infected Elderly and Adherence

Adherence is a major concern for all people who are infected with HIV/AIDS. Research supports the fact that greater adherence with HIV medications yields better patient outcomes. Aside from all the scientific formulas, it just makes sense that medication is not going to work if it's not taken regularly. Antiretroviral therapy (ART) can be difficult to manage because of the number of pills, special dietary restrictions, multiple daily dosing, and unwanted side effects. Looking at literature on aging and HIV/AIDS research may lead to the conclusion that adherence among the elderly could be even more difficult for several reasons. Co-morbid conditions requiring additional medication would compound the already difficult to manage pill burden and increase the likelihood of drug interactions. In addition, age related memory loss would lead to difficulty remembering the components of a complicated regime.

Of special interest is a recent qualitative study of 49 HIV infected older adults (age range 50-67) examining motives and justifications for non-adherence (Siegel, Schrimshaw & Ravies, 2000). The focus of the study was to identify different causes of intentional and non-intentional non-adherence, which the authors defined as consciously decided upon, not accidental or situational and non-planned. Most participants in the study reported at least occasional non-adherence either by missing a dose of medication or by taking the dose at a different time than prescribed. Several took "medication holidays." Surprisingly, results did not identify any specific age related reasons for their adherence or non-adherence, but rather themes immerged which may have easily been applicable to any adult age group. Almost all participants were able to correctly identify medications and proper dosing intervals. They concluded that reasons identified for personal non-adherence should be considered before interventions are planned.

Antiretroviral Therapy and the Elderly Patient

There is no contraindication for use of any antiretroviral medication due to advanced age of the patient. However, as with any patient, a thorough physical, mental, and social evaluation should be done before deciding on therapy. A regimen that cannot be followed properly is of no use to the patient. For example, suppose there is a 65 year old patient who lives alone. He was recently diagnosed with HIV after being hospitalized with pneumonia that was finally diagnosed as Pneumocystis Carinii Pneumonia (PCP). He is severely immunocompromised with a CD4 count of 28, and viral load of >850,000. Obviously, a plan that will have optimal results in suppressing the virus is desired. The following treatment regimen was determined:

- Videx 100 mg ii po q 12 hours taken at least 30 minutes before or 2 hours after a meal
- Epivir 150 mg i po bid taken with or without food
- Crixivan 400 mg 2 po q 8 hours taken within 2 hours of a meal. Must also drink at least 2 liters of water a day to decrease likelihood of developing renal calculi.

In addition he will need prophylaxis for PCP (CD4<200) and Mycobacterium Avium Complex (MAC) (CD4<50):

- Bactrim SD 1 po qd
- Azithromycin 600 mg ii po q week on Monday

His dosing schedule on Monday would look like the following:

TIME	CRIXIVAN	EPIVIR	VIDEX	BACTRIM	AZITHROMYCIN
6 am (breakfast)	2 tabs	1 tab	X	1 tab	2 tabs
8 am	X	X	2 tabs	X	X
Noon (lunch)	X	X	X	X	X
2 pm	2 TABS	X	X	X	X
6 pm	X	1 TAB	X	X	X
8 pm	X	X	2 tabs	X	X
10 pm (with food)	2 tabs	X	X	X	X

If this patient also has heart disease and benign prostatic hypertrophy (BPH) his schedule would look even worse.

TIME	CRIXIVAN	EPIVIR	VIDEX	BACTRIM	AZITHRO	ISMO	METOPROLOL	TERAZOSIN
6 am (breakfast)	2 tabs	1 tab	X	1 tab	2 tabs	1 tab	X	X
8 am	X	X	2 tabs	X	X	X	1 tab	X
Noon (lunch)	X	X	X	X	X	X	X	X
2 pm	2 tabs	X	X	X	X	1 tab	X	X
6 pm	X	1 tab	X	X	X	X	1 tab	X
8 pm	X	X	2 tabs	X	X	X	X	X
10 pm (with food)	2 tabs	X	X	X	X	1 tab	X	1 tab

This is not an unusual regimen. The patient's entire day revolves around taking medications and eating on time. This would be hard for anyone to manage. For an elderly individual with limited social support and resources compounded by even minimal forgetfulness it may be impossible. Now imagine his eye sight is poor and he is illiterate.

In the past several years the seriousness of pill burden and dosing schedules has become a topic of interest for pharmaceutical companies as well as providers and consumers. In an effort to make taking medications more manageable new combinations have been developed and longer dosing intervals have been approved for some medications. Since the patient we discussed above is naïve to antiretroviral therapy he may be able to take atripla (one tab that is a combination of three medications: epivir, emtriva, and tenofovir) which is dosed as one tab at bedtime. This change would eliminate the need for special dietary restrictions, extra fluid intake, and staggered dosing of medications. His new regime would reduce the number of pills by more than half and increase the likelihood of manageability and adherence. It would then look like the following:

TIME	ATRIPLA	BACTRIM	AZITHRO	ISMO	METOPROLOL	TERAZOSIN
6 am	X	X	X	1 tab	X	X
8 am	X	1 tab	1 tab	X	1 tab	X
2 pm	X	X	X	1 tab	X	X
8 pm	X	X	X	X	1 tab	X
10 pm	1 tab	X	X	1 tab	X	1 tab

In addition to management issues, many elderly patients with HIV have co-morbid conditions. Treatment for these conditions and/or pathology resulting from the conditions can affect the way antiretroviral medications work. While this is true for all patients, there is a greater probability that certain diseases will affect older patients. See Table 2 for a partial list of medication precautions and interactions.

Table 2. *Medication Precautions and Interactions*

Medication	**Precaution/Interaction**
Abacavir	Use of alcohol increases bioavailability of abacavir by 41%
Agenerase	Adjust dosage for liver disease and severe cirrhosis. Don't take with cisapride, simvastatin, lovastatin. Use with caution if taking tricyclic antidepressants, warfarin.
Delavirdine	Don't take with cisapride, simvastatin, lovastatin, H2 Blockers, warfarin.
Effavirenz	Don't take with warfarin. Can cause nightmares, hallucinations, vivid dreams.
Crixivan	Can contribute to development of hyperlipidemia and renal calculi.
Epivir	Dose adjustment needed for renal failure.
Ritonavir	Don't use with lovastatin, simvastatin, zolpidem. Use with caution with Clarithromycin, theophylline, sildenafil.

Source: AIDSmeds, 2008

As for all patients, careful monitoring is the key to positive outcomes.

Conclusion

The elderly are now recognized as a population at risk for becoming infected with HIV/AIDS. Our preconceived ageist myths regarding the lack of sexuality among the elderly have been proven false and steps to provide education and HIV/AIDS prevention messages to that age group are needed. As healthcare providers we have the opportunity to talk with our patients about risky behaviors they may be involved in, and to facilitate behavior change.

The elderly are unique in many ways:

- They often do not know how they became infected with HIV/AIDS, and often are diagnosed later in the disease leading to a poorer prognosis.
- Many lack financial and social support.
- They may blame themselves or feel guilty, believing the disease is a punishment for some wrongdoing.
- Elders are less likely to know other people who are HIV/AIDS infected or to be connected to community based HIV/AIDS organizations resulting in isolation and fear of disclosure.
- They may perceive a greater degree of social stigma because of their age.
- Because they have less overall HIV/AIDS knowledge they may be more fearful of infecting others they love.

According to Erickson's theory, old age is a time to process one's life experience and to prepare to die peacefully. The task for the mature adult, ego integrity versus despair, may not be accomplished because of the anger, betrayal, and shame that can accompany a diagnosis of HIV/AIDS. For many elderly, healthcare providers are a source of support and a safe person to talk to about their concerns and fears.

Resources

For more information about HIV/AIDS and the elderly, visit the Web site of the National Association for HIV over Fifty, Inc at www.hivoverfifty.org.

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HIV/AIDS: The Impact on Persons Age 50+

Course Exam

After studying the downloaded course and completing the course exam, you need to enter your answers online. **Answers cannot be graded from this downloadable version of the course.** To enter your answers online, go to e-leaRN's Web site, www.elearnonline.net and click on the Login/My Account button. As a returning student, login using the username and password you created, click on the "Go to Course" link, and proceed to the course exam.

1. The first surveillance data, released in 1997 by the CDC, which showed the first decline in AIDS infections, also showed a decline in the incidence of AIDS in the 50+ year age group.

    A. True
    B. False

2. Unprotected sexual exposure is the most common route of infection among the 50+ year age group.

    A. True
    B. False

3. Factors that contribute to the incidence of HIV/AIDS in the elderly include:

    A. The increased probability of exposure to someone who was infected with HIV, since the total number of persons living with AIDS and persons with HIV infection has increased.
    B. Technological advances have contributed to the increased life expectancy, and people are more fit in their later years.
    C. Increased mobility of the population increases the likelihood of infection.
    D. All of the above.

4. Some common beliefs among the elderly that contribute to increased HIV infection include:

    A. Condoms are a means of preventing pregnancy, rather than a means of preventing sexually transmitted disease.
    B. General lack of knowledge of HIV/AIDS in older women as compared to younger women.
    C. Misinformation regarding the spread of HIV, such as the sharing of bathrooms, eating utensils or being coughed on by someone who is infected with HIV.
    D. All of the above.

5. Healthcare providers are often guilty of bias when it comes to the elderly, assuming that persons over the age of 50 are unlikely to be infected with HIV.

    A. True
    B. False

6. Common symptoms of HIV/AIDS that can be missed or attributed to aging include: pancytopenia, wasting, GI disturbances, dementia, pneumonia, anemia, weight loss, varicella zoster virus, non-hodgkin's lymphoma and recurrent fungal infections.

    A. True
    B. False

7. Early symptoms of dementia, including AIDS dementia complex, are

    A. Impaired memory and inability to perform abstract reasoning.
    B. Poor judgment, loss of motivation, language and communication difficulties.
    C. Changes in personality and sleep patterns.
    D. All of the above.

8. HIV prevention among the elderly includes a thorough risk assessment during the health/sexual history. Some of the questions that should be asked during the risk assessment include:

    A. Have you or your partner ever used illegal drugs?
    B. Have you ever engaged in unprotected sex (that is, without a condom)? If yes, how often? With whom?
    C. Do you have recurrent fungal infections?
    D. All of the above.

9. Some of the factors that impact on adherence to treatment in patients with HIV/AIDS include:

    A. The number of pills and multiple daily dosing.
    B. Special dietary restrictions.
    C. Unwanted side effects.
    D. All of the above.

10. Antiretroviral medication for the treatment of HIV/AIDS is contraindicated in persons of advanced age.

    A. True
    B. False