Aging with HIV:

Bringing the latest research to bear in providing care.

By David E. Vance, PhD, MGS

Overview:

Since the advent of highly active antiretroviral therapy, HIV infection has become a chronic, albeit life-threatening, condition that can be managed; therefore, more and more people are growing older with HIV. Although little research has been conducted on how HIV infection and the aging process interact to affect patient care and well-being, the bodies of literature pertaining to gerontology and HIV and AIDS offer some guidance. It can be helpful for the nurse to have a brief overview of some common concerns—in particular, the potential for drug interactions or toxicities, cognitive declines, and emotional problems—that nurses and other health care professionals are likely to face when providing care to older adults with HIV.

Since the introduction in the mid-1990s of highly active antiretroviral therapy (HAART), combination therapy that delays the progression of HIV infection, growing older with HIV has become possible. Indeed, much like diabetes or lupus, HIV infection is becoming a chronic, albeit life-threatening, condition—one that can be managed with careful adherence to the treatment regimen. And as more and more people with HIV are living longer, nurses and other health care professionals are scrambling to better understand the clinical characteristics of this emerging population and to bring the latest research to bear in providing care.

About 1.1 million adolescents and adults in the United States were living with HIV at the end of 2006, according to the Centers for Disease Control and Prevention.[1] In 2005, of all those infected, adults 50 years of age or older represented 15% of all new diagnoses of HIV or AIDS, 24% of those living with HIV infection or AIDS, and 35% of AIDS-related deaths.[2] This trend is expected to grow. (*Editor's note*: In this article, "older adults" refers to people 50 years of age or older, unless otherwise stated.)

‹ Myron Gold, 67, an advocate for older adults living with AIDS, was diagnosed with HIV in 1993 and told he had six months to live. He is shown here at home in New York in 2008. Photo by David Goldman / *New York Times*.

HIV AND THE AGING PROCESS

There has been relatively little research into how HIV infection and the aging process interact to affect patient care and well-being. Much of what is known comes from studying the literature in each area and extrapolating possible outcomes. These include an increased risk of comorbidities, cognitive decline, and social isolation, each of which threatens one's ability to age successfully (see Figure 1). In one study of 2,583 men with HIV, researchers compared the clinical manifestations and survival rates of those 45 years of age or younger with those 46 years of age or older.[3] The older group exhibited significantly higher rates of weight loss, congestive heart failure, stroke, hypertension, diabetes, cancer, *Pneumocystis carinii* pneumonia (recently renamed *P. jirovecii*), and nephropathy.

Age also affects the body's ability to metabolize and use drugs; as the body's ability to clear drugs becomes less efficient, poorer absorption and irregular levels of medication in the body can result. And the drugs that halt HIV-disease progression can be highly toxic and cause metabolic complications. Such drug toxicities and metabolic complications can contribute to the

Clinical Considerations for an Emerging Population

‹ Paulette Hogan (center) prays with other choir members before Sunday worship services at her church in Oakland, California, in 2004. Diagnosed with HIV in 2001, Hogan became an AIDS activist and served as chairwoman of the HIV Health Services Planning Council for California's Alameda and Contra Costa counties. Photo by Kim Kulish / Corbis.

development or exacerbation of heart disease, kidney disease, liver disease, sarcopenia, and osteopenia, conditions that are also prevalent with increased age.[4-7] There is some evidence that in older adults, interactions among HIV infection, HIV pharmacotherapy, and the aging process result in higher risks of many comorbidities,[8] which also typically require pharmacotherapy and can in turn lead to other complications. Interactions among all of these processes and treatments might trigger or exacerbate cognitive as well as social and emotional problems.

Cognitive problems. Although the incidence of HIV-related dementia has decreased dramatically with the advent of HAART, cognitive declines are often observed in adults with HIV; various cognitive domains can be affected, including speed of information processing, executive functioning and reasoning, memory and attention, and psychomotor functioning, which can affect everyday activities and reduce the quality of life.[9, 10] One study in adults with HIV (mean age, 37 years) found that those with neuropsychological impairment performed significantly worse on computer-simulated driving tests than did those with no impairment.[11] Another study in adults with HIV (mean age, 39 years) assessed their ability to perform instrumental activities of daily living, such as preparing meals, managing finances, and following drug regimens; those with neuropsychological impairment performed significantly worse on all functional measures.[12]

Aging and substance abuse are also known to increase the risk of cognitive declines, although to what degree these factors act synergistically in this population remains unclear. That said, studies indicate that older adults with HIV or AIDS may be at greater risk for cognitive declines than their age-matched, HIV-negative peers.[13-15] Such declines may be particularly profound in people with a history of substance abuse, although one study found that cognitive deficits in HIV-positive drug users were attributable to their drug use rather than to HIV infection, and that deficits were often reversible when drug use stopped.[16]

In general, older adults with HIV are more adherent to their drug regimens than are their younger counterparts.[17, 18] This is extremely important because adherence rates of 95% or higher have been linked to optimal viral suppression; lower rates make viral mutation more likely,[18] and one study found that among people on HAART, an adherence rate below 95% was associated with shorter survival.[19] But among older adults with HIV, those with cognitive impairments tend to be less adherent to their drug regimens than those not so impaired[17, 18]; this is also seen in the elderly population in general.[18, 20] Poor adherence can also result from unwanted or adverse drug effects, high drug costs, and weariness of the regimen. This downward spiral of poor adherence and cognitive decline, if not addressed, is likely to diminish the quality of the patient's life and hasten disease progression and perhaps death.[18]

Some emotional states, such as anger and depression, which are common in people with HIV or AIDS, may exacerbate cognitive problems. One study found that among adults who were beginning HAART (median age at baseline, 38 years), depression was associated with higher mortality; that association was strongest among people who were both depressed and not adhering to their treatment regimen.[19] Another study in adults with HIV (mean age, 36 years) found that depression had little effect on cognition, but that anger was a significant predictor of psychomotor impairment.[10]

Social and emotional problems. Social withdrawal and isolation—whether caused by the physical or cognitive effects of HIV and its treatment, the stigmatization sometimes associated with the illness, or a combination thereof—are common in people with HIV or AIDS. And treatment for HIV and AIDS is

expensive; having limited financial resources for social activities might compound isolation.

In particular, lipodystrophy—a metabolic complication of HAART, characterized in part by wasting of the subcutaneous fat in the face—can dramatically alter one's appearance and cause embarrassment or self-consciousness, leading to further withdrawal and isolation. Shippy and Karpiak surveyed 160 older adults with HIV or AIDS.[21] They found that most (71%) lived alone; fewer than half (47%) reported being in a committed relationship. The predominant source of social support was other older adults with HIV. Although this might suggest a strong sense of camaraderie among people facing similar challenges, 57% of respondents reported "unmet emotional support needs." The researchers concluded that older adults with HIV have fragile social networks that can't adequately support them as they age.

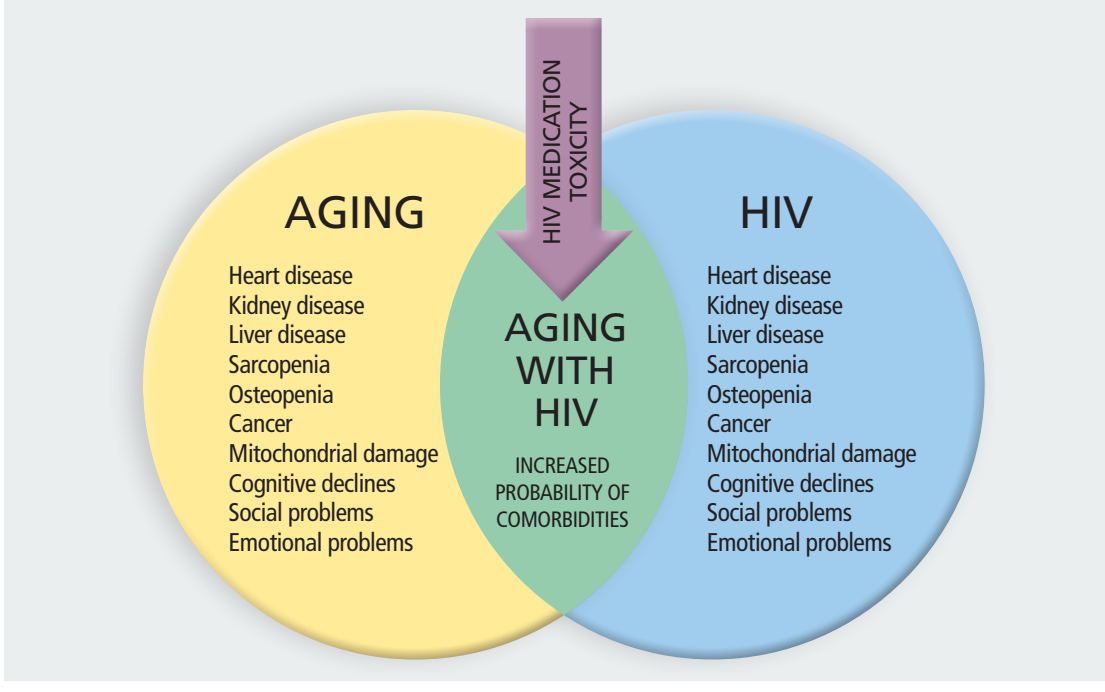
This, along with the comorbidities that accompany aging with HIV, may prove overwhelming for some, resulting in depression and suicidal ideation. Shippy and Karpiak found that 58% of participants reported being depressed.[21] And in a study of 113 adults ages 45 years or older (mean age, 53 years) with HIV or AIDS, Kalichman and colleagues found that 27% had had thoughts of suicide within the past week.[22] This level of suicidal ideation was 8% higher than that found in a study of 2,909 HIV-positive adults (mean age, 42 years).[23] Depression and suicidal ideation might also be factors in substance abuse, poor adherence to treatment regimens, or further social withdrawal.

SUCCESSFUL AGING WITH HIV

Several definitions of successful aging exist; most agree that it involves both maintaining existing abilities and compensating for declines.[24] As my colleagues and I have stated elsewhere, successful aging with HIV can be defined as "being cognitively and emotionally functional, having supportive social networks that fulfill personal and intimate needs, and avoiding medical problems while retaining vigor and mobility."[25] And as noted earlier, various factors, including the effects of the aging process, HIV infection, HAART and other drug regimens, and comorbidities, may independently or synergistically compromise one's ability to age successfully.

It's important to remember that every person ages differently; not everyone will face the same challenges. Moreover, some people will possess more effective coping skills or have better resources than others. For example, the quality of hardiness or resilience—composed of elements such as social competence, curiosity, the ability to confront problems directly, and a sense of "spiritual grounding"[24]—has been associated with successful aging in the general population, and it seems likely that among older adults with HIV, those who are hardier will also tend to fare better as they age.[24] Some people might have greater financial resources than others, allowing them to socialize with friends more often and lessening the financial burden of illness. Some might have strong spiritual resources, such as a belief that God is directly involved in their lives and will help them weather life's challenges. In a pilot study I conducted with 50 HIV-positive and

Figure 1. Interactions among aging, HIV, and HIV drugs increase the risk of comorbidities.



'I Don't Fear Aging with HIV'

Photo courtesy of Paul Durham.

Diagnosed with HIV in 1992, 53-year-old Paul Durham has had 17 years' experience with both the infection and the health care providers who help him manage it. In a recent interview with *AJN*, Durham spoke highly of the clinicians at Trinity Medical Center in Birmingham, Alabama, saying, "You get to know your nurses a little better than your physician. I feel lucky to have developed relationships with them; they know me up and down and have pulled me through some tough times."

For the last two years, a daily regimen of the antiretroviral drugs lopinavir and ritonavir (combined as Kaletra) and emtricitabine and tenofovir (combined as Truvada), as well as vitamins, has sustained him. Aside from some fatigue and backache, he reports experiencing no symptoms of HIV or adverse effects from the drugs; he said his physician calls him "a picture of health."

"I don't fear aging with HIV, unless I think too hard about it," Durham said. "I live one day at a time. I feel healthy. I keep up my meds, my routine; I'm in a good, loving relationship; I have hobbies. I'm always busy."

During the first four years after his diagnosis he took azidothymidine (also called zidovudine or AZT), an antiretroviral that made him extremely sick. He's since taken so many drugs that he can't recall their names. He was often too ill to work, and after his employer allowed him to retire, he became withdrawn for a while. But as he continued living with HIV and as the drugs used to treat it improved, he recalled, "I decided to start taking care of my body with diet and exercise, improving my mind and my spiritual side. I'm a pretty positive person now and attitude is everything." He also said that attitudes of health care workers have changed dramatically, especially within the last five years. "People are more aware that you can't catch HIV that easily. My dentist is really friendly," he said. "People just treat me like a normal human being now."

Durham's friends who are HIV positive are also doing well on various drug regimens. His advice to others aging with HIV? "There's so much hope—if you can turn your attitude around and quit feeling sorry for yourself. Take your meds, go to your physician, have good friends. Get active in something, and try to find a support group."

Durham is even quick to point out that aging has its benefits. "You start to appreciate things more and become more aware of your mistakes. It's helped me." What's next? He's planning a trip to New Zealand. He said, "I don't hold back anymore. I decided I can't."

—Alison Bulman, senior editorial coordinator

50 HIV-negative adults 30 years of age or older, 72% of HIV-positive participants indicated that their spiritual lives had changed after diagnosis, and 44% felt that HIV was a blessing.[26] Those who considered HIV a blessing were significantly more likely to feel they were aging successfully.

NURSING IMPLICATIONS

Some patients epitomize successful aging with HIV. They tend to adhere to their drug regimens, keep health care appointments, exercise regularly, and eat healthfully; they're more proactive about their health care and more likely to feel their lives have meaning and purpose. Indeed, one study in 119 HIV-positive patients (average age, 38 years) looked at conscientiousness—a domain of personality said to include elements such as dutifulness, striving to achieve, and self-discipline—and found that those who scored higher on a 12-item conscientiousness scale fared much better than those with lower scores.[27]

But many patients find aging with HIV more challenging. They may require additional care for comorbidities such as heart disease or depression or for problems such as social isolation. Nurses can be instrumental as advocates for older patients with HIV. And nurses can also help to better define what successful aging with HIV means and determine how to help patients achieve it.

As educators, nurses must convey three things to patients with HIV. First, aging with HIV is possible. This point is extremely important, especially for those newly diagnosed, who might still consider HIV a death sentence. Hope is a strong motivator; patients who understand that growing older with HIV is possible will probably take better care of themselves. Second, nurses must convey the necessity of adherence to the drug regimen, explaining both how viral

RESOURCES

- **HIV Wisdom for Older Women**
  www.hivwisdom.org
  (Information for men is also available.)
- **New England Association on HIV Over Fifty**
  www.hivoverfifty.org

mutation occurs and how nonadherence increases the likelihood of viral resistance to the drugs. Third, nurses should make sure patients understand how to promote overall health and wellness (such as by eating a healthful diet, getting adequate sleep and regular exercise, and managing stress). Such practices may be especially important in people whose health is already compromised by advancing age or HIV-disease progression.

In the clinical setting, nurses must be aware not only of possible comorbidities that can occur in older adults with HIV, but also of possible cognitive declines and emotional problems. Cognition can be evaluated by using bedside neuropsychological measures such as the Mini–Mental State Examination, assessing for possible signs of decline such as missed health care appointments and inappropriate responses to questions, and talking with patients' family members or caregivers.[28] Similarly, patients' emotional status can be evaluated by using tools such as bedside depression measures and talking with patients and their families and caregivers. Referrals to appropriate health care providers (such as neurologists or psychologists) should be made when warranted. (For more information, see *Resources*.)

FURTHER RESEARCH

Although we're learning more about how HIV infection and the aging process interact, much remains unknown. There are a number of questions that require further investigation: How exactly does HAART affect older adults (a population usually excluded from drug trials)? What are the contraindications for drugs used to treat HIV and AIDS and those used to treat age-related comorbidities such as heart disease or osteopenia? Until more is known, nurses and other clinicians must consult both the gerontologic and the HIV and AIDS literatures and rely on their clinical judgment in treating this emerging population. ▼

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David E. Vance is associate professor in the School of Nursing at the University of Alabama at Birmingham (UAB). *He has received grants from the UAB's Center for AIDS Research and from the National Institute of Mental Health (No. R03MH076642-01A2) for research on the cognitive effects of aging with HIV.* *Contact author: devance@uab.edu.* *The author of this article has no other significant ties, financial or otherwise, to any company that might have an interest in the publication of this educational activity.*

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