

# ACQUIRED IMMUNODEFICIENCY SYNDROME IN OLDER AFRICAN AMERICANS

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The purpose of this study was to determine if older African Americans are disproportionately affected by acquired immunodeficiency syndrome (AIDS), and to review the clinical impact of AIDS and the importance of prevention and treatment efforts. A review of the literature and statistics was obtained using Medline and the AIDS Public Information Data Set offered by the Centers for Disease Control and Prevention. Twenty-seven percent of the U.S. population is above the age of 50, and the number of AIDS cases in this group is growing, with African Americans accounting for the highest proportion of cases and deaths. Testing for HIV may be delayed and symptoms attributed to other illnesses. Though 5% of new cases occur in those over 50, prevention programs, testing, and the perception of risk by providers may be insufficient. There are few research studies on HIV treatment in older patients and no specific guidelines for antiretroviral treatments available. Although death rates for AIDS has been declining, adults over 50 still have the highest mortality rate. Co-morbid conditions, such as heart disease and hypertension, may require taking multiple drugs, which may complicate treatment. Increasing heterosexual transmission rates and a lack of information on HIV reinforces the need for specific prevention programs targeted toward older African Americans. (*J Natl Med Assoc.* 2002;94: 209-214.)

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**Key words:** older African Americans ♦ AIDS ♦ prevention ♦ treatment

As of April 2000, the total United States population was 281,421,906. Fifty-nine million people were over the age of 55, representing 21% of the total population.<sup>1</sup> The U. S. Census estimates through November 2000 placed the total

population over 50 years old at approximately 76,767,000, which represented nearly 27% of the U. S. population.<sup>2</sup> African Americans make up approximately 12.3% of the population, or 34,658,190, but accounted for 37% of the cumulative acquired immunodeficiency syndrome (AIDS) cases through December of 2000.<sup>1,3</sup>

Although AIDS has been viewed as a disease of the young (13-49 years of age), it is the ninth leading cause of death in the age group 45 to 64. Most literature and prevention efforts have been targeted toward the younger age group.<sup>4,5</sup> Nevertheless, the Centers for Disease Control and Prevention (CDC) has been reporting on AIDS in those over 50 since the

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beginning of the epidemic. Sadly, African Americans over 50 account for the highest proportion of cases.<sup>6</sup> This paper addresses the epidemiology of AIDS in those over 50, clinical characteristics, prevention, and treatment-related concerns with an emphasis on African Americans.

## EPIDEMIOLOGY

More than 10% of the cases of AIDS reported to the CDC before 1989 were seen in those over 50.<sup>7</sup> Contaminated blood was the major risk factor for contraction of human immunodeficiency virus (HIV). While accounting for only 1% of cases in those aged 13 to 49 years old, contaminated blood or blood products accounted for 6% in those 50 to 59, 28% in those 60 to 69, and 64% in those greater than 70 years of age.<sup>6</sup> By 1996, the proportion of those over 50 with AIDS had climbed to 11%. The majority of cases were males (84%), with African Americans making up the highest proportion (43%). In 1989, the percentage of adult males with AIDS over 50 who had sex with men, so-called "men who have sex with men" (MSM) was 60%. By 1996 this had fallen to 36%. Perhaps as many as two thirds of AIDS cases in men over age 50 are in men who have had sex with other men but who may not identify themselves as "gay." Although rates were decreasing in MSM, heterosexual transmission-related risks increased. There was a doubling of heterosexual transmission-related risks from 1992 to 1997, going from 6% to 13%, respectively.<sup>8</sup> The proportion of men with no reported risk declined from 25% in 1989 to 7.6% in 1996.<sup>7</sup>

Those over 55 years of age account for 10% of all reported AIDS cases and represented a 71% increase between 1992 and 1994.<sup>5</sup> In communities with larger populations of older adults, such as Broward County, north of Miami, and suburban Cook County, outside of Chicago, the 10% number quoted by the CDC for persons older than 50 with AIDS may approach 15%.<sup>8</sup> Those over 65 years of age constitute approximately one eighth of the U.S. population, and this is expected to double in

**Table 1. Females with AIDS by Race and Age Group**

Age	Whites	Blacks	Hispanics	Totals
50-54	1,183	3,016	1,114	5,313
55-59	756	1,649	682	3,087
60-64	480	973	363	1,816
>65	959	967	312	2,238
Total	3,378	6,605	2,471	12,454

the next 50 years.<sup>5</sup> The information on HIV and older adults is based on data about AIDS cases and not HIV infection; consequently, it is suggestive of a more advanced stage of the disease. The number of older people living with HIV infection is difficult to ascertain. It is possible that as many as 60,000 people over the age of 60 are now living with HIV infection.<sup>8</sup> During the years when the blood supply was not being adequately tested, 70% of all red cell transfusions were given to persons over age 49. Although some elders may be aware of blood transfusions received during illness or surgery, many may have received transfusions unknowingly.<sup>8</sup>

AIDS affects African-American women disproportionately, and the same holds true for those women over 50 years of age. In addition to representing more than 50% of the cumulative number of females with AIDS, African-American females also represent over 50% of the total of those females over 50 (Table 1).<sup>3</sup> Women with HIV infection who are over 50 tend to be older than men and more uninformed about HIV transmission and risks compared to younger women.<sup>9,10</sup>

African-American males over 50 are also disproportionately represented by AIDS. Through December of 2000 there was a cumulative total of 640,022 men with AIDS, with 70,619 being over the age of 50. Of those over 50, African-American males represented nearly 35% of cases (Table 2).<sup>3</sup>

Through 1999 there was a cumulative total of 49,044 deaths in AIDS patients over 50. Of these deaths 16,416 occurred in African Americans, representing 33.47% of the total over 50. The majority of deaths fell into the 50 to 54 age

Table 2. Males with AIDS by Race and Age Group

Age	Whites	Blacks	Hispanics	Totals
50-54	16,650	11,778	5,442	33,870
55-59	8,923	6,420	2,989	18,332
60-64	4,916	3,510	1,649	10,075
>65	4,051	2,957	1,334	8,342
Total	34,540	24,665	11,414	70,619

group. African Americans also made up 32.29% of those dying of AIDS over the age of 65 (Table 3).<sup>11</sup>

Initial reports to the CDC included few or no older drug abusers with AIDS. By 1988 this had changed, and the percentage of patients over 50 with HIV secondary to drugs had risen to 8%. This rising trend has continued, reaching 11% in 1991 and 17% in 2000. This challenges conventional gerontologic wisdom that the elderly seldom use nonprescription recreational drugs.<sup>7</sup>

Gordon performed a retrospective chart review of patients age 60 or older at Grady Memorial Hospital in Atlanta. Patients were identified by a computerized search of 6,493 positive enzyme-linked immunosorbent assays (ELISA's) for HIV between January 1985 and June 1992.<sup>12</sup> A total of 32 HIV-infected elderly patients were identified. There were 27 men and 5 women, with a mean age of 64.8 (range, 60-83). Twenty-six patients (81%) were African American. Among the men, HIV risk factors included 10 patients who were homosexual/bisexual, 5 who used intravenous drugs, 2 who received transfusions, 2 who were heterosexuals, and 8 who had no identified risk factor. Of the 5 women, only 1 had an identified risk factor, which was a blood transfusion. Notably, HIV testing was performed only after a diagnosis of an AIDS-defining opportunistic infection (OI) in 15 of 32 patients (47%). Among 24 elderly patients who presented with signs or symptoms of HIV infection, testing for HIV was often delayed from 1 to 10 months. The diagnosis of HIV infection in the elderly was usually not considered by clinicians until late in the

course of infection, despite a high prevalence of prior sexually transmitted diseases (STDs).

## COURSE AND CLINICAL MANIFESTATIONS

HIV infection may be diagnosed later in elderly patients and therefore at a more advanced stage of disease that may be less amenable to treatment.<sup>5,6,12</sup> Older patients more frequently present with AIDS at the time of diagnosis of HIV infection compared with younger patients.<sup>9</sup> The course of the illness may be more rapid in the elderly<sup>9</sup> and their survival shorter.<sup>7,8</sup> In a retrospective case control study comparing older (>55 years) vs. a younger cohort, Skies showed that a larger proportion of patients in the older cohort died within 60 days of HIV diagnosis.<sup>13</sup> Although his study was small and the result did not reach statistical significance, he postulated that the increased early mortality is reflective of a more rapid progression to AIDS in the older group and that older patients may present later in the course of their disease or be misdiagnosed, causing a delay in diagnosis. The elderly have more comorbid conditions compared with younger patients. These comorbid conditions include infections, especially tuberculosis, cancers (especially cervical cancer in women), and renal and cardiac age-related declines and dysfunction.<sup>8,9</sup> Some diseases of the elderly may be confused with AIDS-associated opportunistic infections, such as congestive heart failure (CHF) mimicking *Pneumocystis carinii* pneumonia, herpes zoster, which occurs more frequently in the elderly, and AIDS-related dementia mimicking Alzheimer's disease.<sup>9</sup> The proportional increase in opportunistic infections from 1991 to 1996 was greatest among persons more than 50 years of age compared with those aged 13 to 49 (22% vs. 9%).<sup>10</sup> Altered mental status, decreased mentation and memory secondary to HIV dementia may be mistakenly attributed to Alzheimer disease or age-related decline.<sup>9</sup> Elderly patients are often misdiagnosed because many of the symptoms of AIDS such as fatigue, weight loss, night sweats, and poor appetite may mimic age-re-

Table 3. Number and Percentage of AIDS Deaths by Race and Age

Age	Whites n (%)	Blacks n (%)	Hispanics n (%)	Totals n (%)
50–54	10,922 (50)	7,326 (34)	3,391 (16)	21,639 (44)
55–59	6,446 (50)	4,281 (33)	2,070 (16)	12,797 (26)
60–64	3,849 (51)	2,517 (34)	1,143 (15)	7,509 (15)
>65	3,822 (54)	2,292 (32)	985 (14)	7,099 (14)
Total	25,039 (51)	16,416 (33)	7,589 (15)	49,044 (100)

lated symptoms.<sup>5</sup> The function of the immune system may be decreased secondary to the aging process. This may accelerate the disease process in older people with AIDS and lead to a shorter survival time.<sup>13</sup> Adler suggested that the difference between young and old HIV-infected persons in disease progression is not because of the degree or loss of specific immune function but rather to the faster loss of CD4<sup>+</sup> helper cells in older persons compared with the loss rate in younger persons.<sup>14</sup> Physiological changes in the elderly may make them more susceptible to acquiring HIV. These changes include thinning of the vaginal mucosa in women, decreased vaginal lubrication, and increased tissue friability. This increases the chances of tears in the vaginal wall during intercourse. Anal mucosal tears in older men may occur during rectal intercourse secondary to thinning of the epithelium of the anal canal.<sup>15</sup> African Americans have a high incidence of hypertension and diabetes.<sup>16</sup> There is a synergistic increase in microvascular and macrovascular complications when both hypertension and diabetes coexist. This leads to a dramatic increase in cardiovascular diseases.<sup>17,18</sup> An analytical review by Grossman<sup>19</sup> showed that the coexistence of diabetes doubled the risk of cardiovascular events, cardiovascular mortality, and total mortality in those with hypertension. Lipid disorders and metabolic side effects secondary to protease inhibitors may be exacerbated in the elderly and especially in African-American elderly. Tsiodras,<sup>20</sup> in a 5-year cohort study, showed that protease inhibitors increased cholesterol, triglycerides, and glucose and that there was a

5-fold increase in the development of lipodystrophy.

## PREVENTION

HIV and AIDS are seldom talked about in the elderly population.<sup>5</sup> There is concern about HIV in the elderly because 5% of newly reported cases of HIV infections have occurred in those over 50 years of age.<sup>5,21</sup> Prevention programs can help make changes in behavior that reduce the risks of infection. Both primary and secondary prevention efforts are important—primary because they keep people from becoming infected and secondary because they reduce the spread of infection to others, decrease the risks of opportunistic infections, and may decrease the progression to AIDS. Patients over 50 may not perceive the need to be tested because they may not perceive themselves as being at risk. Providers should assess risks for HIV even in patients over 50 years of age and counsel their patients about decreasing risky behavior.<sup>5</sup> Older people may engage in homosexual, bisexual, and multiple sex partner relationships, which increase their risks of acquiring HIV. Older gay men may become involved with younger gay men at the death of their older partners. Older women may share male partners at the death of their own spouse, increasing their risks of HIV infection.<sup>15</sup> Sexual and drug histories should be obtained. Older women, even more than younger women, may have difficulty negotiating condom use by their partners.<sup>5</sup> Older adults may lack information regarding condom effectiveness. In a study by Mack,<sup>22</sup> more than one third (36%) of adults aged 18 to 49 believe that condoms are very

effective in the prevention of HIV infection, whereas only 28% between the ages of 50 and 64 felt that condoms were effective. Prevention efforts for the elderly should involve places such as houses of worship, elderly day care, and other places where elderly may congregate.<sup>5</sup> Reaching those in houses of worship is especially important for African Americans.

Older adults should have more HIV testing. Only 26.6% of older adults had ever been tested, compared with 46.8% in the younger age group. Those who perceive themselves at risk are more likely to be tested; therefore, efforts should be made to educate older people on risk factors for HIV infection, which may motivate more to become tested.<sup>22</sup>

## TREATMENT

Although studies have not shown that elderly HIV patients should be treated differently from younger patients, one should realize that there are few studies done in the elderly with HIV; moreover, before 1993, clinical trials were not allowed on those over 60 years of age.<sup>6</sup> There are few published research studies on HIV treatment in older patients. Age-related losses in renal and hepatic function in older patients have frequently excluded them from clinical trials for new drugs.<sup>9</sup> The elderly may be at greater risk of drug toxicity secondary to age-related losses in renal and liver functions.<sup>6</sup> As many as two thirds of patients over the age of 65 use one or more drugs on a daily basis, and the number of drugs taken increases the chances of adverse drug reactions.<sup>23</sup> The potential for drug-drug, drug and food, and general drug interactions is high in the elderly.<sup>24</sup> Medications that may be used in younger adults with HIV infection may require reduced doses in the elderly, and there are few data that suggest the appropriate dosage reduction for older people.<sup>9</sup>

Comorbid conditions may be of great concern to elderly African Americans. Such conditions include arthritis, diabetes, and heart disorders. As previously noted, symptoms related to advancing age and other medical conditions

may be confused with those related to HIV/AIDS. HIV dementia may imitate other forms of dementia in the elderly but is more amenable to treatment with antiretroviral medications. Psychosocial issues are of paramount importance in elderly African Americans and should be addressed. These issues include changes in self-image, isolation, depression, homophobia, and discrimination. Older people may be taking multiple medications for comorbid conditions, and this is complicated by the addition of complex antiretroviral medications.<sup>9</sup> Very little literature or study has been devoted to protease inhibitors and the elderly or to the use of aggressive triple antiretroviral medications. There are no guidelines for specific antiretroviral treatments in patients over 50.<sup>6</sup> Whitman and colleagues<sup>25</sup> showed that mortality rates in Chicago declined between 1995 to 1997 in both those over and under 50. This correlated with the introduction and use of protease inhibitors and potent antiretroviral medications. Nevertheless, adults older than 50 had a higher mortality rate than those under 50. The decline in death rates for those older than 50 was 51% compared with 61% in those less than 50 years of age. The degree of mortality reduction although less in the over age 50 group still suggests that the benefits of triple combination therapy are also accessible to older people with AIDS. Palella and coworkers,<sup>26</sup> using national surveillance data, showed recent, marked reductions in morbidity and mortality associated with AIDS. They analyzed data on 1255 patients, each of whom had at least one CD4<sup>+</sup> count below 100 cells/mm<sup>3</sup>, who were seen at nine clinics specializing in the treatment of HIV infection in eight U. S. cities from January 1994 through June 1997. The proportion of antiretroviral medications prescribed from 1994 to 1997 increased from 72% to 95%, with marked increases in the prescription of combination therapy from 25% to 94% during the same period. The rate of protease inhibitor-containing regimens increased from 2% in mid-1995 to 82% by June 1997. They concluded that the recent declines in morbid-

ity and mortality due to AIDS were secondary to the use of intensive antiretroviral medications. They noted that the reductions in mortality was shown regardless of sex, race, age, and risk factors for transmission of HIV.

## CONCLUSION

The prevalence of AIDS in older Americans continues to rise, and older African Americans are disproportionately affected. Increasing heterosexual transmission in older African Americans along with a lack of information on HIV risks underscores the need for specific prevention programs in this population. HIV is diagnosed in later stages of infection in older individuals, and the course of the infection may be accelerated. Psychosocial issues such as changes in self-image, isolation, depression, and discrimination are particularly troubling for older African Americans. The burden of comorbid conditions, such as diabetes, hypertension, and congestive heart failure, increases the difficulty of using highly active antiretroviral therapy and underscores the need for vigilance in anticipating drug interactions, side effects, and compliance.

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