

# A CHARACTERIZATION OF OLDER AIDS PATIENTS IN MARYLAND

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This retrospective study evaluated Maryland acquired immunodeficiency syndrome (AIDS) patients who were  $\geq 50$  years at the time of AIDS diagnosis. All patients diagnosed between January 1987 and June 1996 who were  $> 50$  years were included in the cohort. A total of 610 male (82.7%) and 128 female (17.3%) AIDS patients aged  $\geq 50$  were identified. The most common mode of human immunodeficiency syndrome (HIV) transmission was male-to-male sexual contact (34.7%). Additionally, 146 (19.8%) patients contracted HIV through blood transfusions, 93 (12.1%) were infected through heterosexual contact, 134 (18.6) were infected through IV drug abuse, and the remaining 109 (14.8%) had unknown risk factors. Data from this preliminary study demonstrate that an alarming percentage of AIDS patients (approximately 10%) in Maryland are aged  $\geq 50$ . Sexual contact, either male-to-male or heterosexual transmission, was the route of transmission for nearly 47% of this patient population. However, few research projects, educational programs, or public health initiatives are specifically targeted to this patient population. The increasing life expectancy of AIDS patients as well as the advent of new drug treatments highlights the need for further research to investigate the diagnosis and treatment of AIDS and HIV infection among older patients. (*J Natl Med Assoc.* 1998;90:369-373.)

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**Key words:** acquired immunodeficiency syndrome  
◆ human immunodeficiency virus  
◆ older patients ◆ elderly

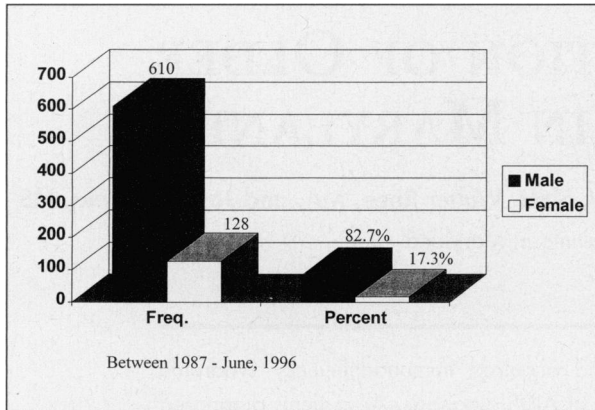
Recent data from the Centers for Disease Control and Prevention (CDC) show that 11% of male acquired immunodeficiency syndrome (AIDS) cases

and 8% of female AIDS cases have been among Americans  $\geq 50$  years.<sup>1</sup> However, little research has been conducted to investigate the incidence of AIDS among Americans in this group despite the fact that older persons constitute an estimated 10% of all AIDS patients.<sup>2</sup> The potential for drug-drug interactions, drug-food interactions, and general drug misadventures are highlighted in this population, particularly since many of them will already be under treatment for existing comorbidities.<sup>3-5</sup>

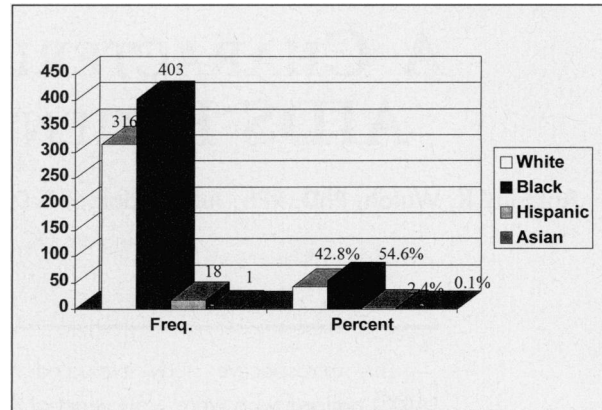
Although these percentages may differ slightly by ethnicity, it demonstrates that an alarming percentage of older Americans have developed AIDS. Further, 5% of all newly reported cases of human immunodeficiency virus (HIV) infection have occurred among patients  $\geq 50$ .<sup>6</sup> This suggests not only that there is a growing number of older patients with AIDS but also that a large percentage of them are becoming HIV infected after the age of 50.

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**Figure 1.** Maryland AIDS patients >50 years old by gender (1987-1996).



**Figure 2.** Maryland AIDS patients >50 years old by race (1987-1996).

The recent introduction of protease inhibitors, non-nucleoside reverse transcriptase inhibitors, and combinations of older reverse transcriptase inhibitors has produced great excitement concerning the treatment of HIV infection and AIDS.<sup>7,9</sup> Several investigators have gone as far as to consider the possibility of the treatment of HIV infection as a long-term chronic illness, much in the way that hypertension, diabetes, and heart disease are treated among elderly Americans.<sup>10</sup>

Until recently, conventional treatment for HIV infection generally was limited to a single reverse transcriptase inhibitor, usually zidovudine.<sup>11</sup> Although there had been discussion regarding the optimal time for initiating therapy, it had been accepted that monotherapy was the preferred mode of treatment.<sup>12</sup> The recent introduction of two new classes of agents, protease inhibitors and non-nucleoside reverse transcriptase inhibitors, has greatly expanded the armamentarium available to treat HIV infection. Combination therapy with multiple variations of drugs is becoming accepted as the optimal means of delaying disease progression and the development of resistance, and ultimately prolonging the survival of AIDS patients.<sup>13</sup> However, these agents were approved rapidly by the Food and Drug Administration prior to lengthy investigation of potential drug interactions, particularly concerning the elderly who may be taking several drugs for HIV infection as well as chronic medication to treat comorbid conditions.<sup>14</sup>

These combinations of antivirals do not include the host of drugs taken for prophylaxis to prevent

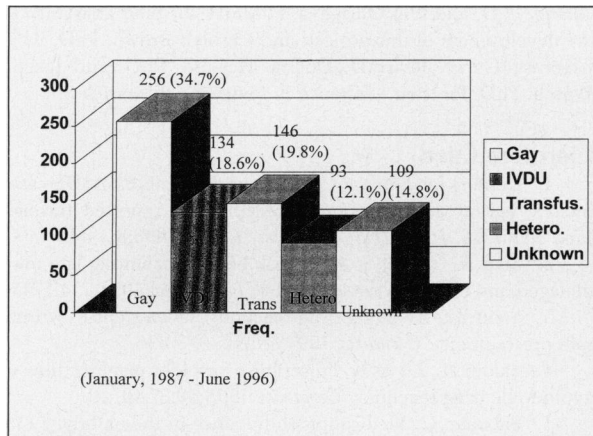
opportunistic infections that develop as a result of immune deficiency. A typical AIDS patient may be on prophylaxis regimens to prevent *Pneumocystis carinii* pneumonia, *Mycobacterium avium* complex, candida, herpes, and toxoplasmosis.<sup>15</sup> When this treatment regimen is added to potential treatment for hypertension, diabetes, or congestive heart failure, it is easy to imagine the complexity of the drug regimen for an elderly AIDS patient.

## METHODS

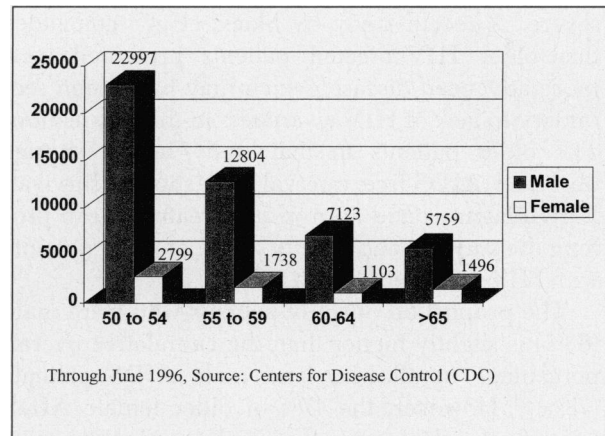
A retrospective study was conducted to detail the incidence of AIDS among Maryland AIDS patients who were  $\geq 50$  years at the time of AIDS diagnosis. All patients diagnosed between January 1987 and June 1996 who were >50 years of age were included in the cohort. Transmission routes included male-to-male transmission, intravenous drug use, heterosexual contact, transfusion recipient, and other. Patients who indicated both intravenous drug and any other category were classified as intravenous drug users.

The Human Immunodeficiency Virus Information System (HIVIS) database was the primary source of data for this study. This database is the statewide database on HIV costs and financing and was established in 1987. This epidemiologic tool matches the AIDS registry records of persons with AIDS to a variety of secondary data bases. Longitudinal, person-based files are created to profile utilization, costs, and financing of HIV-related treatment provided during the course of illness.<sup>16</sup>

The HIVIS database has been applied for many



**Figure 3.** Older Maryland AIDS patients by mode of transmission (1987-1986).



**Figure 4.** National AIDS cases in patients >50 years old.

purposes in various studies; it has been used previously to measure the use of prescription drugs by AIDS patients by demographic, geographic, and HIV risk group; perform post-marketing surveillance of new AIDS-related drugs; measure access to drug therapies; assess the impact of drugs on clinical outcomes; and evaluate the cost/benefit and cost effectiveness of new therapies.<sup>17,19</sup>

**RESULTS**

During January 1981 to June 1996, a total of 14,067 AIDS cases were reported in Maryland. Of these cases, 1335 (9.5%) were >50 years old at the time of diagnosis. A total of 738 patients >50 years old and diagnosed between January 1987 and June 1996 were selected for detailed analysis.

Of the 738 patients in this study population, 610 (82.7%) were men, and the remaining 128 (17.3%) were women (Figure 1). In terms of ethnicity, 403 (54.6%) were black, 316 (42.8%) were white, 18 (2.4%) were Hispanic, and 1 (0.1%) was Asian (Figure 2).

The most commonly reported mode of transmission was male-to-male sexual contact; 256 (34.7%) of the cohort reported this as the mode of HIV transmission (Figure 3). Additionally, 134 (18.6%) of the cohort was infected through IV drug abuse. One hundred forty-six (19.8%) contracted HIV through blood transfusions, 93 (12.1%) were infected through heterosexual contact, and the remaining 109 (14.8%) had unknown risk factors or an undetermined mode of transmission.

**DISCUSSION**

Nationally, 55,819 cases of AIDS in patients >50 years have been reported to the CDC<sup>1</sup> (Figure 4). Of those cases, 7255 were reported among patients >65 years. These cases represent 11% and 8% of the overall cases in American men and women, respectively. Data from this preliminary study demonstrate that a similarly alarming percentage of AIDS patients (approximately 10%) in Maryland are >50 years. It is important to note that many of these patients probably were infected with HIV about 10 years prior to an AIDS diagnosis; however, data indicates that 5% of all newly reported cases of HIV infection have occurred among patients ≥50.<sup>6</sup> While our society tends to characterize older Americans and the elderly as asexual, nearly 47% of patients in this population contracted HIV through sexual contact (including male-to-male and heterosexual contact).

A study by Gordon and Thompson<sup>20</sup> concludes that the elderly still participate in behavior that places them at risk, including injection drug use, and that many are still sexually active. The proportion of patients in this cohort with IV drug use as the mode of transmission (18.6%) is reflective of the higher incidence of intravenous drug use in major urban areas in Maryland, particularly the Baltimore Metropolitan area.<sup>21</sup>

The delayed diagnosis or misdiagnosis of AIDS in elderly patients further exacerbates the progression of this disease because appropriate treatment is potentially delayed until a patient's condition is

severe. A recent study by Skiest et al<sup>22</sup> concludes that older HIV-infected patients presented with more advanced disease, which may have been secondary to lack of HIV awareness in this population. The older patients in that study had a shorter observed AIDS-free interval and shorter survival. Early diagnosis and appropriate treatment can prolong the survival and quality of life of older patients with HIV infection and AIDS.

The proportion of study patients who were male (83%) is slightly higher than the cumulative overall percentage of all Maryland male AIDS patients (78%).<sup>21</sup> However, the 17% of older female AIDS cases further highlights the increasing incidence of HIV infection among women.<sup>23</sup> Heterosexual women are one of the fastest growing groups of AIDS patients nationwide,<sup>23,24</sup> and this trend is supported by the percentage of older female AIDS cases in this study. As the general US population ages, the incidence of older AIDS patients will likely increase. Further, as our ability to treat HIV infection and AIDS improves, and therapeutic advances are made, there will also be a corresponding increase in the number of older patients with AIDS.

However, few research projects, prevention programs, or public health initiatives are specifically targeted to this population of patients. The increasing life expectancy of AIDS patients as well as the advent of protease inhibitors, non-nucleoside reverse transcriptase inhibitors, and combinations of reverse transcriptase inhibitors highlight the potential for significant drug interactions and potential drug misadventures, particularly among elderly AIDS patients. A recent study by Stein<sup>3</sup> concludes that two thirds of patients aged  $\geq 65$  use one or more drugs daily, and the number of drugs taken by older patients greatly influences their chance of experiencing adverse drug reactions.

## CONCLUSION

Further research is warranted to investigate the diagnosis and treatment of AIDS and HIV infection among older and elderly patients. Future research considerations should include determinants of access to medical care and medications for the elderly, compliance issues specific to older AIDS patients, and age-related variations in immune function at diagnosis of HIV infection.

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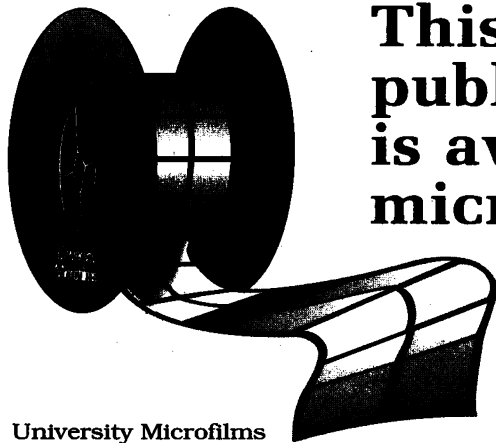
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