

Absence of Frailty in an Older Population of HIV Infected Adults: Experience from an Urban HIV Clinic

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Introduction

In the US, there has been an increase in the number of older adults living with HIV. At the end of 2013, 42% of HIV-infected adults in the US were >50 and 6% were >65. In 1996-1997, a 20-year-old with HIV infection had a life expectancy of 19 years, while in 2011, life expectancy had improved to 53 years [1]. In our clinic which provides care to approximately 660 HIV-infected adults, about 9% of active patients are >65.

Historically, older adults with HIV infection have had poorer treatment outcomes [2]. Prior to availability of effective antiretroviral therapy (ART), older adults had worse outcomes as evidenced by more rapid decline in CD4 lymphocyte count and shorter survival [3]. Interestingly, despite lower rates of immunologic recovery, the French Hospital database found that older patients actually had better virologic responses [4].

Several factors may contribute to worse overall outcomes for older individuals living with HIV. Thymic function deteriorates with age, so that immunologic recovery is less robust than in younger patients [5]. Prevalence of diabetes is high among patients with HIV infection, affecting 10% of the population [6]. Certain antiretroviral agents may have more toxicity in older patients, a population not typically included in clinical trials. Examples of known adverse effects from antiretroviral therapy include nephrotoxicity, adverse impacts on lipids, insulin resistance, bone loss and accelerated cardiovascular disease [7]. Confounding factors may exist which could potentially increase side effects of ART in older patients. These include alcoholism, chronic kidney disease, viral hepatitis, and psychiatric disease [7]. Finally, it has been hypothesized that polypharmacy, more common in older patients may contribute to toxicities.

HIV associated neurocognitive disorder (HAND) was seen commonly in the pre-ART era, affecting up to 30% of patient with AIDS. With well-controlled HIV disease, rates of HAND in older patients are declining, but there is increasing recognition of overlap between Alzheimer's disease and HIV associated dementia. Identifying and treating such patients is important since neurocognitive impairment may be associated with lower retention in care [8].

With an aging cohort of people living with HIV, there is concern that older individuals may be at especially high risk to develop the "frailty phenotype". A study from San Francisco studied frailty in 155 HIV infected patients with an average age of 57 [9]. Falls were common as were incontinence and depression. While this frail, geriatric syndrome is not well defined, common features generally include history of falls, urinary incontinence and delirium, which may include problems with memory and attention [10,11].

Methods

This study was designed to assess outcomes in a population of geriatric patients cared for in an adult HIV clinic located in New Haven, CT. The vast majority of patients receive both primary and specialty infectious disease care at the same site. Demographic data, CD4 count and viral load are updated at each visit and logged into an AccessR Database. Patients are assessed at each visit for recent falls and flagged as "fall risk" in our electronic medical record (EpicR) if appropriate. There is also routine screening for substance use, adherence and mental health issues.

Patients were identified through query of our Access database, then electronic records of geriatric patients were reviewed. We identified 59 active patients over the age of 65. Demographic data is detailed in (Table 1) and common comorbidities are listed in Table 2.

Results

Fifty patients (85%) had complete virologic suppression with viral load <20 copies/ml. Among nongeriatric patients, 80% had virologic suppression. Four geriatric patients with incomplete virologic suppression had only low-level viremia, with HIV viral load between 21 and 50 copies/ml. Only two patients had viral loads >1000 copies/ml (1930 and 20,100). Median CD4 for geriatric patients was 488 (mean 543). Only 3 patients had CD4 counts below 200 cells/mm³. Among the general population, median CD4 was 541 (mean CD4) 644 (not statistically significant, p value 0.4599 by two-tailed t test).

When patients were assessed for frailty phenotype by screening for presence of low BMI (<19), cognitive decline, fall risk and urinary incontinence, none had all 4 of the risk factors present. When the number of risks factors for each patient was tabulated, 24 (40.7%) had no risk factors identified. Eleven patients (18.6%) had 2 frailty conditions present and 20 (33.9%) had only 1 risk identified. Only two patients had any documentation of aspiration, a condition predisposing to pneumonia and often present in elderly patients with dementia (Table 3).

Discussion

Our population of HIV-infected adults over the age of 65 had excellent immunologic and virologic control. Only 4 patients in this cohort (6.8%) had been diagnosed with dementia which is much lower than what was reported in the San Francisco cohort despite the fact that our population was older (median age 69 compared to 57 in their cohort). In addition, none of the patients in our study had all 4 factors that we screened for as markers of frailty.

We found a lower prevalence of cognitive decline than what has been previously reported in the literature. This may reflect improved long term virologic control, but our numbers were small so it is difficult to draw specific conclusions. We were also unable to assess

whether a history of substance use in the past was a risk factor for development of cognitive decline. However, we did find that mental health issues and ongoing substance use issues were prevalent, reinforcing the need to focus resources on these problems.

Gender	
Male	40
Female	19
Race	
NonHispanic Black	31
NonHispanic White	23
Hispanic	5
Median Age	69 years (range 66-81)
66-69 years	35 (59%)
70-74 years	19 (32%)
75-79 years	4 (7%)
>80 years	1 (2%)
HIV viral load <20 copies/ml	50 (85%)
CD4<200 cells/mm ³	3

Table 1: Demographics.

Hypertension	41 (69.5%)
Diabetes mellitus	18 (30.5%)
Chronic kidney disease	21 (35%)
Lipid disorder	24 (41%)
Coronary artery disease	7 (12%)

Table 2: Comorbid conditions.

Median BMI	26 (range 16-49)
Mean BMI	26.1
Median number non-HIV medications	10 (range 2-28)
Mental health disorder	
Depression	18
Cognitive decline/HIV dementia	4
Bipolar disease	3
Schizophrenia	2
Anxiety	5
Active substance use disorder	8
Cocaine	4

Alcohol	4
Conditions indicating frailty	
BMI <19	5 patients (8.5%)
Patients identified as fall risk	15 patients (25.4%)
Patients with urinary incontinence	3 patients (5%)
Patients with cognitive decline	4 (6.8%)
All 4 frailty conditions present	0
3 frailty conditions present	4 (6.8%)
2 frailty conditions present	11 (18.6%)
1 frailty condition present	20 (33.9%)
No frailty conditions present	24 (40.7%)

Table 3: Frailty indicators.

Conclusion

In summary, our population of older adults with HIV disease had very high levels of function with low prevalence of frailty and excellent immunologic and virologic control. Given the continued gains in life expectancy for people living with HIV, increased attention also needs to be given to managing other comorbidities such as hypertension, chronic kidney disease, dyslipidemia and cardiovascular disease which are likely going to be the important causes of illness for this population. Moving forward, this means a need for more coordination between multidisciplinary geriatrics centers and HIV providers.

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