



Person-Years Lost by Late Presentation for HIV Care in Maryland

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ABSTRACT

Background: Detection of HIV-infection often does not occur until the infection is relatively advanced in the US. The CDC now recommends expanded screening for HIV as a method to detect HIV infection at earlier stages. We have previously shown that patients do not present for care in Maryland until their CD4 level, on average, is 250 cells/mm³. This analysis assesses the effect of late presentation on person-years of life lost. As of October 2007, Maryland has not yet adopted the CDC recommendations.

Methods: We determined the CD4 level at first presentation for HIV care from 2000-04 in the Johns Hopkins HIV Clinical Cohort. Comprehensive demographic and clinical data are collected on patients longitudinally beginning at clinic enrollment. We determined survival by Kaplan-Meier (KM) methods from first presentation for late (CD4 < 200) vs earlier presentation (CD4 201-350, >350). Person-time computations were applied to the number of patients newly presenting with HIV in Maryland during this time period to compute person-years (PY) of life lost.

Results: A total of 1617 patients newly presented for HIV care from 2000-04. Of these, 687 (42.5%) had CD4 < 200, 368 (22.8%) had CD4 201-350 and 562 (34.7%) had CD4 >350. Comparing those patients presenting for care at CD4 < 200 vs. those presenting at CD4 > 350, PY lost (per 100 patients) by late presentation for HIV care were 11.0 at 1-year, 15.9 at 2-years, 20.5 at 3-years and 24.3 at 4-years. Extrapolating the 4-year estimates to the 11,000 patients newly diagnosed with HIV infection in Maryland from 2000-2004, a total of 2,673 PY of life were potentially lost due to late presentation to care.

Discussion: In this era of highly effective ARV therapy, these results are a reminder that HIV-infected patients who first present in later HIV stages are at higher risk for early mortality. These data provide support for the CDC recommendations for expanded screening to be implemented.

BACKGROUND

In the United States and elsewhere, detection of HIV-infection often does not occur until the infection is relatively advanced (Egger M, CROI 2007, Abstract 62).

In 2006, the CDC recommended expanded screening for HIV in order to detect HIV infection at earlier stages. Revised Recommendations for HIV Testing of Adults, (Adolescents and Pregnant Women in Health-Care Settings. MMWR Recomm Rep 2006; 51:1-17).

These new recommendations advise routine HIV screening of adults, adolescents, and pregnant women in health care settings in the United States. These revised guidelines also call for the removal of a separate informed consent for HIV testing, because this is seen as a barrier to early diagnosis of HIV infection.

BACKGROUND (CON'T)

The guidelines suggest that general consent for medical care should be considered sufficient to encompass consent for HIV testing. To adopt these recommendations into practice, state laws which require HIV-specific written or verbal informed consent will need to be changed.

The law in Maryland regarding HIV testing has not yet been revised. Maryland continues to require written informed consent for HIV testing.

We have previously shown that patients do not present for care in Maryland until their CD4 level, on average, is 250 cells/mm³ (Clin Infect Dis 2007; 45: 1369-74).

This analysis assesses the effect of late presentation on person-years of life lost.

METHODS

This analysis is based on data collected as part of the Johns Hopkins HIV Clinical Cohort. This is a clinic-based observational cohort of patients receiving longitudinal HIV care in the Johns Hopkins HIV ambulatory clinics. These clinics are located in Baltimore City, and in 5 Maryland counties.

Comprehensive data collection is based on information abstracted from medical records, electronic laboratory sources, and pharmacy claims.

Collection of data begins with Clinic enrollment, and continues longitudinally for the duration of clinical care of the patient.

The analysis in this study is based upon data collected at the time of presentation for HIV care from all patients who initiated care from January 1, 2000 through December 31, 2004.

Analysis

The analysis was restricted to new patients enrolling in the clinic who were antiretroviral naive.

We first determined the CD4+ T-lymphocyte level at first presentation for HIV care from 2000-04.

METHODS (CON'T)

We then determined survival using Kaplan-Meier (KM) methods after starting HAART for late (CD4 ≤ 200 cells/mm³) vs. earlier presentation (CD4 201-350 cells/mm³, >350 cells/mm³). Survival is based on data from state and federal vital statistics, review of records, and communication with family and friends.

We computed person-time differences in the number of patients newly presenting with HIV in Maryland during this time period to compute person-years of life lost.

RESULTS

A total of 1617 patients newly presented for HIV care from 2000-04 who were antiretroviral naive. Of these, 687 (42.5%) had CD4 < 200, 368 (22.8%) had CD4 201-350 and 562 (34.7%) had CD4 >350.

Figure 1. Plot of CD4+ T lymphocyte count in antiretroviral-naive persons at presentation for HIV care, by calendar year

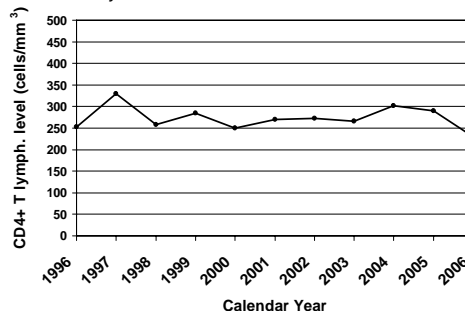


Table 1 shows a comparison of the number of deaths that occurred after 1, 2, 3 and 4 years after starting HAART. The Kaplan-Meier estimated probability of dying is also shown for each year of follow-up. These estimates are stratified by CD4+ T lymphocyte level at the start of HAART in antiretroviral-naive individuals.

RESULTS (CON'T)

Table 1: Number of Deaths and Kaplan-Meier Estimated Cumulative Mortality Rate (in parentheses) by Year after HAART Start

CD4 (cells/mm ³) at HAART start	1-Year	2-Years	3-Years	4-Years
≤200	82 (0.129)	123 (0.210)	155 (0.285)	179 (0.368)
201-350	14 (0.049)	24 (0.086)	34 (0.139)	39 (0.179)
> 350	10 (0.019)	23 (0.051)	32 (0.080)	42 (0.125)
Difference between:				
> 350 and 201-350 cells/mm ³	3 PY	3.5 PY	5.9 PY	5.4 PY
> 350 and < 200 cells/mm ³	11 PY	15.9 PY	20.5 PY	24.3 PY

Comparing the worst case scenario of patients presenting for care at CD4 ≤ 200 vs. those presenting at CD4 > 350, person-years lost (per 100 patients) by late presentation for HIV care were 11.0 at 1-year, 15.9 at 2-years, 20.5 at 3-years and 24.3 at 4-years.

Extrapolating the 4-year estimates to the ~11,000 patients newly diagnosed with HIV infection in Maryland from 2000-2004, (<http://www.dhmm.state.md.us/AIDS/Data&Statistics>), 2,673 PY of life were potentially lost due to late presentation to care under the worst case scenario, and 594 PY of life were lost under the best case scenario.

CONCLUSIONS

HIV-infected individuals continue to present for HIV care at a relatively late stage of HIV infection as indicated by the extent of immunosuppression. Such late presentation is not without consequences.

In this era of highly effective ARV therapy, these results are a reminder that HIV-infected patients who first present in later HIV stages are at higher risk for early mortality. These data provide strong support for the CDC recommendations for expanded screening to be implemented.