BACKGROUND: Controversy exists regarding who should provide care for those with HIV/AIDS. While previous studies have found an association between physician HIV experience and patient outcomes, less is known about the relationship of physician specialty to HIV/AIDS outcomes or quality of care.

OBJECTIVE: To examine the relationship between choice of appropriate antiretroviral therapy (ART) to physician specialty and HIV/AIDS experience.

DESIGN: Self-administered physician survey.

PARTICIPANTS: Random sample of 2,478 internal medicine (IM) and infectious disease (ID) physicians.

MEASUREMENTS: Choice of guideline-recommended ART.

RESULTS: Two patients with HIV disease, differing only by CD4+ count and HIV RNA load, were presented. Respondents were asked whether ART was indicated, and if so, what ART regimen they would choose. Respondents’ ART choices were categorized as “recommended” or not by Department of Health and Human Services guidelines. Respondents’ HIV/AIDS experience was categorized as moderate to high (MOD/HH) or none to low (NO/LO). For Case 1, 72.9% of responding physicians chose recommended ART. Recommended ART was more likely (P<.01) to be chosen by ID physicians (88.2%) than by IM physicians (57.1%). Physicians with MOD/HH experience were also more likely (P<.01) to choose recommended ART than those with NO/LO experience. Finally, choice of ART was examined using logistic regression: specialty and HIV experience were found to be independent predictors of choosing recommended ART (for ID physicians, odds ratio [OR], 4.66; 95% confidence interval [95% CI], 3.15 to 6.90; and for MOD/HH experience, OR, 2.05; 95% CI, 1.33 to 3.16). Results for Case 2 were similar. When the analysis was repeated excluding physicians who indicated they would refer the HIV “patient,” specialty and HIV experience were not significant predictors of choosing recommended ART.

CONCLUSIONS: Guideline-recommended ART appears to be less likely to be chosen by generalists and physicians with less HIV/AIDS experience, although many of these physicians report they would refer these patients in clinical practice. These results lend support to current recommendations for routine expert consultant input in the management of those with HIV/AIDS.

KEY WORDS: HIV/AIDS; physician specialty; antiretroviral therapy.


Over the past 4 years, the standard of care and outcomes of care for HIV/AIDS have changed dramatically.1–3 Potent 3- or 4-drug combination antiretroviral regimens have resulted in substantial increases in CD4+ cell counts and suppression of HIV plasma viral load in treated individuals. There is also growing evidence from randomized clinical trials that use of these combination antiretroviral regimens results in improved clinical outcomes for those living with HIV/AIDS.4–6 Use of these regimens also appears to have been the major factor contributing to recent reductions in morbidity and mortality due to HIV/AIDS in the United States.1,7

Evidence from both clinical trials and observational studies have demonstrated the clear benefit of this therapy, and recent guidelines have outlined its appropriate indications and use.2,3,8,9 Given the complexity of these regimens and the rapid pace at which antiretroviral management is evolving, current guidelines suggest that these medications should “generally be prescribed only by physicians with extensive experience in the management of HIV/AIDS, and when this is not possible, such expertise should be accessed through consultation.”3 This recommendation reflects a long-standing, but growing, debate regarding the role of generalists and physicians with little experience in the care of HIV/AIDS patients.

Previous research in this area found that hospitals and physicians with more HIV experience provide better HIV/AIDS care, evidenced by lower inpatient mortality and increased survival.10–15 While physicians with more HIV experience probably provide better HIV care, little is known about the specific processes of care that result in these better outcomes.16 Controversy also exists about the relative competence of generalists compared with specialists in infectious diseases to provide HIV/AIDS care; yet, there is little data to inform this debate.17 Since the advent of highly active antiretroviral therapy (HAART) for HIV/AIDS, appropriate treatment with these medications is felt to be among the most important factors affecting patients’ outcomes. Appropriate prescribing of these medications, therefore, is a key indicator of HIV quality of care.

In the present study, our goal was to examine antiretroviral therapy (ART) choices of general internal medicine (IM) physicians and infectious disease (ID)
subspecialists, and to examine whether these choices conform to current guideline recommendations.\textsuperscript{2,3,8,9} Physicians in this study were presented standardized cases of asymptomatic HIV/AIDS patients in a self-administered survey. Our objective was to examine whether physician respondents were aware that ART therapy was indicated for 2 of these hypothetical patients, and to examine their ability to choose an appropriate antiretroviral regimen, consistent with the current guideline recommendations. Using physicians’ antiretroviral medication choices for these hypothetical patients, we also sought to examine whether choice of appropriate ART is associated with specialty, HIV experience, or both.

METHODS

Study Population

The study population consisted of ID physicians and IM physicians without subspecialty in 4 states: California, Florida, Massachusetts, and New York. We chose these 2 groups of physicians because our primary study question was whether ID subspecialty was as important as HIV experience in antiretroviral prescribing and how the ART choices of generalists compared with ID subspecialists. We chose these 4 states because of their high prevalence of HIV/AIDS and their geographic diversity.\textsuperscript{7}

Physicians were identified from a list of names, addresses, and self-reported specialties obtained from the American Medical Association’s (AMA) Master File, which includes members and nonmembers of the AMA. We selected a random sample of 2,478 physicians, stratified according to state and specialty. The sample was comprised of 1,000 ID physicians and 1,478 IM physicians from California, Florida, Massachusetts, and New York. The ID sample size within each state was proportional to the total number of ID physicians in the state, and the number of IM physicians chosen was 1.5 times the number of ID physicians in each state’s sample.

Survey Instrument

A study survey instrument was developed which presented 3 standardized cases of patients with asymptomatic HIV disease, who differed only by CD4 count and HIV RNA load. For each case, respondents were asked what level of care they would provide were they to see this patient in their clinical practice. Possible responses were to assume all the patient’s care; provide primary care, but refer for HIV-specific care; provide HIV-specific care, but refer for primary care; and refer for all care. Respondents were then asked to indicate whether ART was indicated, and if so, what specific ART regimen they would prescribe. Respondents could check whichever medications they would use from a list comprised of all Food and Drug Administration-approved antiretroviral medications.

In the current report, we present results only for Cases 1 and 2, those for which ART is indicated based on the Department of Health and Human Services (DHHS) and International AIDS Society (IAS)-USA guidelines released in 1997.\textsuperscript{2,3,8,9} These 2 cases are shown in the Appendix. They are identical, except Case 1 is more advanced, with a CD4 count of 330 and HIV RNA of 250,000 copies/mL; Case 2 has a CD4 count of 460 and HIV RNA of 50,000 copies/mL. Respondents were also asked to rate the likelihood of various clinical outcomes for each case if the patient were to receive treatment with 1 of 2 ART regimens or no treatment. The results of this analysis and Case 3 are presented elsewhere.\textsuperscript{18} The survey also asked respondents for their professional and demographic characteristics.

Data Collection and Response Rate

The study sample consisted of 2,478 physicians: 1,000 ID physicians and 1,478 IM physicians. The self-administered survey was mailed to all physicians in the sample in May 1998. Follow-up mailings were sent to all nonrespondents in June and July 1998, and telephone calls were made to the offices of nonrespondents to further optimize response rate during the 2 weeks prior to and following the third mailing.

A total of 1,233 physicians responded and returned the survey: the overall response rate was 51.8%, with adjustments as listed below. A subset of 96 physicians were removed from the denominator because of an incorrect address. A number of physicians responded but did not complete their survey; therefore, their responses could not be used in the analysis. One hundred six returned the survey, but stated that they never see HIV patients, and 65 did not complete the survey because of serious illness or retirement. Thus, a total of 1,062 surveys were complete and available for analysis; the data from these responses are presented here.

Nonrespondents were compared to respondents by state and specialty, the only characteristics available for nonrespondents. There was no difference in response rate by state (\(P = .08\)). However, there was a difference in response rate by specialty (\(P < .05\)). Of the 1,417 IM physicians sampled whose addresses were correct, 569 (40.1%) returned a completed survey; compared with to 493 (51.1%) of 965 ID physicians. Of note, these numbers refer only to those respondents who returned a completed survey; those who returned the survey partially completed saying they did not see HIV patients, were too sick, or were retired are not included in these response rates. It had been anticipated that ID physicians might have more interest in this subject and respond at a higher rate. Therefore, more generalists were sampled. Thus, the respondent group consists of more IM physicians (569, 54%) than ID physicians (493, 46%).

Choice of Antiretroviral Therapy

Antiretroviral regimens chosen by responding physicians were categorized according to whether they were