

Impact of HIV-specialized pharmacies on adherence to medications for comorbid conditions

Janeen DuChane, Bobby Clark, John Hou, Karen Fitzner, Glen Pietrandoni, and Ian Duncan

Abstract

Objective: To determine if patients using human immunodeficiency virus (HIV)-specialized pharmacies have greater adherence to drugs used to treat comorbid conditions and HIV compared with patients who use traditional pharmacies.

Design: Retrospective cohort study, with patients' propensity matched based on pharmacy use: HIV-specialized versus traditional.

Setting: Nationwide pharmacy chain.

Participants: Adult patients who filled at least two prescriptions for an anti-retroviral therapy (ART). Patients also needed to have at least two prescriptions for an angiotensin-converting enzyme (ACE) inhibitor/angiotensin receptor blocker (ARB) or a statin for analyses examining comorbid conditions.

Main outcome measure: Proportion of days covered (PDC).

Results: The adherence analyses for ART, ACE inhibitors/ARBs, and statins included 14,278, 1,484, and 1,372 pairs, respectively. The mean PDC for ART patients using HIV-specialized pharmacies was higher than that for patients using traditional pharmacies (86.20% vs. 81.87%; $P < 0.0001$). Patients taking ACE inhibitors/ARBs in the specialized group also had a higher mean PDC compared with patients in the traditional group (82.61 vs. 79.66; $P = 0.0002$), as did specialized pharmacy users in the statin group (83.77 vs. 81.29; $P = 0.0009$).

Conclusion: HIV patients managed by an HIV-specialized pharmacy have significantly higher adherence to medication for comorbid conditions compared with patients using traditional pharmacies. Patients of HIV-specialized pharmacies also have significantly higher adherence to ART compared with peers using traditional pharmacies.

Keywords: HIV, adherence, antiretroviral therapy, comorbidity, proportion of days covered, ACE inhibitors/angiotensin II receptor blockers, statins.

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To date, more than 1.1 million people in the United States have human immunodeficiency virus (HIV), and approximately 50,000 additional Americans become infected each year.¹ Antiretroviral therapy (ART), which suppresses the virus and improves survival, has proven successful in the treatment of many people with HIV, particularly those who are adherent to prescribed medication regimens.^{2,3} As indicated in the U.S. Department of Health and Human Services' Guidelines for the Use of Antiretroviral Agents in HIV-1-Infected Adults and Adolescents on their *AIDSinfo* site, "Strict adherence to [ART] is key to sustained HIV suppression, reduced risk of drug resistance, improved overall health, quality of life, and survival."⁴

Because adherence to prescribed HIV therapy improves outcomes, patients with HIV are living longer and increasingly being diagnosed with comorbid conditions.⁵⁻⁹ People living with HIV have higher rates of comorbidities than their uninfected peers,^{7,8} with about 90% of HIV-positive patients having at least one comorbid condition.¹⁰ It has been reported that some of these comorbidities may be caused or exacerbated by the progression of the disease and its corresponding treatment.^{11,12}

At a Glance

Synopsis: This retrospective cohort study analyzed claims from a nationwide pharmacy chain to determine if patients with human immunodeficiency virus (HIV) who use HIV-specialized pharmacies have greater adherence to drugs for both HIV and comorbid conditions compared with patients who use traditional pharmacies. As cardiovascular disease is the leading cause of non-HIV-related death in those with HIV, the study considered not only adherence to antiretroviral therapy (ART) but also to antihypertensive agents and statins. The study found that those patients managed by an HIV-specialized pharmacy have significantly greater adherence to both ART and medication for comorbid conditions compared with their peers using traditional pharmacies.

Analysis: *The availability of medications that effectively suppress HIV has resulted in patients with the virus living longer, increasing their susceptibility to comorbid conditions. Therefore, it is essential that patients with HIV maintain optimal medication adherence to delay the development of both HIV-related conditions and the progression of non-HIV-related comorbidities. The study findings presented here show that patients with HIV benefit from using specialized pharmacies that employ pharmacists who are specially trained in the treatment of HIV and provide such additional services as enhanced patient education, refill synchronization, medication review, and adherence assessments.*

High blood pressure, high cholesterol, hypertension, obesity, and heart disease are among the most common comorbidities for HIV-positive patients.^{10,13} The elevated risk of cardiovascular disease (CVD) in the HIV population underscores the importance of individualized clinical and therapeutic management for this population.¹⁴ CVD is the leading cause of non-HIV-related death in HIV-infected persons and is of particular concern for those with HIV.¹⁵⁻²⁰ Recent clinical guidelines give special emphasis to comorbid conditions that arise in people infected with HIV, recognizing that these patients require treatment to minimize morbidity and mortality.^{2,3,21} Concomitantly, providers and payers are seeking effective and efficient ways to better manage these patients.

Aspects of CVD are amenable to therapy with anti-hypertensive agents (e.g., angiotensin-converting enzyme [ACE] inhibitors or angiotensin receptor blockers [ARBs]) and cholesterol-controlling statins, both of which are prescribed to those with HIV.^{22,23} Adherence to ART, ACE inhibitor/ARB, and statin regimens is associated with better overall health.^{22,24} However, despite evidence that medication improves quality of life and prevents death, patients with chronic conditions have nonadherence rates of 40%–50%.^{25,26} Just as nonadherence to ART leads to worse outcomes for people with HIV, nonadherence to ACE inhibitor/ARB and/or statin regimens results in increased hospital admissions and deaths.^{26,27}

Recently, the specialized pharmacy concept was piloted for patients with HIV to increase customer retention and improve medication adherence and persistence.^{5,28,29} Research has demonstrated that adherence to ART is higher for patients using HIV-specialized pharmacies than for those using traditional pharmacies.²⁸⁻³⁰ Specialized pharmacies aim to achieve above-average health care outcomes and value. These pharmacies employ pharmacists who are specially trained in HIV and are able to provide additional services such as enhanced patient education, refill synchronization, medication review, and adherence assessments, as well as to ensure availability of HIV medications.

Pharmacists in the current study provided patient counseling pertaining to the use of and adherence to medications in the form of individualized patient support, encouragement, and advice. All participating pharmacists received 25 hours annually of Accreditation Council for Pharmacy Education (ACPE)-accredited education (based on treatment guidelines and approved by the American Academy of HIV Medicine), with an expanded focus on cultural competency and HIV stigma. The pharmacists also maintained strong relations and contact with providers and case referral managers.

Our study confirmed that the use of HIV-specialized pharmacies positively impacted medication adherence to therapeutic regimens for HIV and examined the im-

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