Adherence With Combination Antiretroviral Therapy (cART): Do Challenges Still Persist?

TUPED271

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Background

The goals of combination antiretroviral therapy (cART) are to maximally suppress viral load, restore and preserve immune function, reduce morbidity and mortality, improve quality of life, and prevent HIV transmission. Adherence to cART continues to be a challenge in the treatment of HIV. This study was designed to better understand the factors that drive adherence to ART, and to determine the importance of these and other factors to patients and physicians when choosing or prescribing an ART regimen, respectively.

Study Objectives

Patient and physician surveys were developed to understand attitudes toward, and preferences about, HIV treatments, tolerability, and adherence.

- The primary objectives of the study were to
  - Assess patient adherence with HIV medications
  - Determine drivers of adherence
  - Identify barriers to adherence
- The secondary objective of the study was to evaluate any gaps or synergies between patient and physician perspectives related to treatment adherence

Methods

Study design

Patient recruitment

- A cross-sectional internet-based survey was conducted in the United States from June 23, 2014, to July 10, 2014, with patients with self-reported HIV (aged ≥18) who were then being treated with an HIV medication
- Patients were recruited from the Harris Poll Online[SM] Panel and third-party panels via email invitation
- The patient data were weighted to be demographically representative of the population of interest
- To be eligible for the study, a patient must have met the following criteria:
  - Residing in the United States
  - Aged ≥18 years
  - Have a diagnosis of HIV or AIDS
  - Undergoing treatment for HIV with a prescription medication
  - Able to complete the questionnaire in English

Physician recruitment

- A cross-sectional internet-based survey was conducted in the United States from June 23, 2014, to July 10, 2014, with primary care physicians (PCPs), including family practitioners (FP), general practice (GP), and internal medicine (IM) practitioners, and infectious disease (ID) specialists who treat patients with HIV
- Physicians were recruited from the Nielsen Physician Panel and third-party panels. More than 10,000 invitations were extended to physicians
- To be eligible for the study, a physician must have met the following criteria:
  - Then practicing in the United States
  - Either a PCP or an ID specialist
    - Treated ≥5 patients with HIV each month if a PCP
    - Treated ≥15 patients with HIV each month if an ID specialist
  - Spent at least 50% of time working in an outpatient setting
  - Able to complete the questionnaire in English

Survey design and administration

- Both surveys included screener questions, questions related to demographics and clinical information, and questions related to study objectives
- Several validated patient-reported outcome (PRO) questionnaires were included in the patient survey, including the HIV Treatment Satisfaction Questionnaire (HIVTSQ),[1] the 5-item World Health Organization Well-Being Index (WHO-5),[2] and the adapted version of the Morisky Medication Adherence Scale (MMAS)[3,4]
- The 30-minute online surveys were pretested with a small group of respondents (n=5 patients and n=5 physicians) prior to fielding
- Both of the final, updated surveys and all study documents were reviewed and approved by the Copernicus Institutional Review Board
- Electronic informed consent was obtained from eligible patients interested in participating. Following electronic consent, patient eligibility was confirmed via screening questions

Analysis

- Descriptive analyses were conducted to characterize survey responses
- The results of this study were analyzed using a variety of descriptive and comparative analytic techniques, including
  - Means, medians, and frequencies
  - Cross-tabs
  - Correlations
- Significance testing was conducted using *t* tests of means at the 2-sided alpha=0.05 level where sample sizes were sufficient (n≥30)

Results

Patient sample demographic and clinical characteristics

- The patient sample consisted of 400 patients and was predominantly male (79.3%) with an average (standard deviation, SD) age of 41.1 (13.2) years
- Sixty-one percent of participants reported that they were homosexual, while 28.1% reported that they were heterosexual, and 11.1% reported that that they were bisexual
- The majority of participants had a high level of education, with 69.5% of participants reporting that they had completed “some college or less”
- The sample was diverse based on income, with 41.8% of participants reporting a pretax total household income of less than $35,000 within the previous year and 18.9% reporting an income of ≥$100,000
- Approximately 58.9% of participants reported coexisting comorbidities, the most common of which were depression (27.5%), high blood pressure (23.6%), and high cholesterol or hyperlipidemia (20.2%)
- One hundred and forty-four (36%) participants reported taking 1 pill daily to treat their HIV and 256 participants reported taking ≥2 pills daily (range, 1-23 pills)
- Treatment switches were frequent, with 26.8% of participants reporting one HIV treatment switch while 23.6% reported no switching. The most common reasons for switching included side effects (37.5%), ineffectiveness of medications for controlling HIV (31.9%), and having too many pills to take (26.3%)
- A total of 69.2% of participants scored >50 on the WHO-5, which suggests “good well-being.” Approximately 20% scored between 29 and 50, which indicates “reduced well-being,” and 10.4% scored <29, which may suggest depression
- The mean (SD) of the total score on the HIVTSQ (range, 0-60) was 50.3 (9.1), which indicates that most participants were satisfied with their HIV treatments

Physician sample characteristics

- The physician sample consisted of 119 PCPs and 81 ID specialists
  - Approximately 25% of PCPs and 80.2% of ID specialists reported being a certified HIV specialist
  - The PCPs reported treating an average (SD) of 46.1 (66.8) adult patients with HIV per month, while ID specialists reported treating an average (SD) of 125.3 (109.8) adult patients with HIV per month

Adherence from the patient perspective

- Adherence was assessed using the MMAS, a generic, self-reported, medication-taking behavior scale commonly used as an adherence screening tool.[3] Patient adherence to HIV medications within the preceding 7 days was evaluated using a 4-item adapted version based on a 5-point frequency scale (0 = never to 4 = always).[4] Higher scores indicate greater non-adherence. The scores for the 4 items were totaled, ranging from 0 to 16. Adherence was defined as a score of <3, and non-adherence was defined as a score of ≥3[5]
- Approximately 68.8% of participants were adherent with their HIV medications and 31.2% were non-adherent
- Those taking more than 1 pill to treat their HIV were significantly more likely to be non-adherent than those taking 1 pill (41.0% vs 12.2%)
- Compared with adherent participants, significantly more non-adherent participants found it difficult to pay for their HIV medications and found that their HIV medications were not always available locally/at a local pharmacy (Table 1)

Table 1. Summary of Management of Medications

Statement	Participants Who Somewhat or Strongly Agree: MMAS Score of <3 (Adherent) (n=275) (A)[a] N (%)	Participants Who Somewhat or Strongly Agree: MMAS Score of ≥3 (Non-Adherent) (n=125) (B)[a] N (%)
When I get my medications, it is important to have someone I can talk to about any concerns I have (ie, pharmacist, physician, nurse)	189 (68.7%)	99 (79.3%)
It is difficult for me to pay for the medications I need to best manage my HIV	113 (41.2%)	75 (60.1%) **A**
The medications I need to best manage my HIV are not always available locally/at a local pharmacy	75 (27.3%)	73 (58.3%) **A**

[a]Statistical significance (95% confidence) between columns is denoted using letters.

- A significantly higher proportion of adherent participants discussed their lab results regularly with their healthcare provider (HCP) compared with non-adherent participants (92.6% vs 62.3%) and talked about any problems with their HIV medicines or side effects (68.2% vs 47.8%; Table 2)
- Significantly more non-adherent participants discussed their ability to pay for their medications with their HCP compared with adherent participants (47.1% vs 30.1%) and talked about the types of support available (40.8% vs 23.3%)

Table 2. Summary of Specific Communications With Physicians

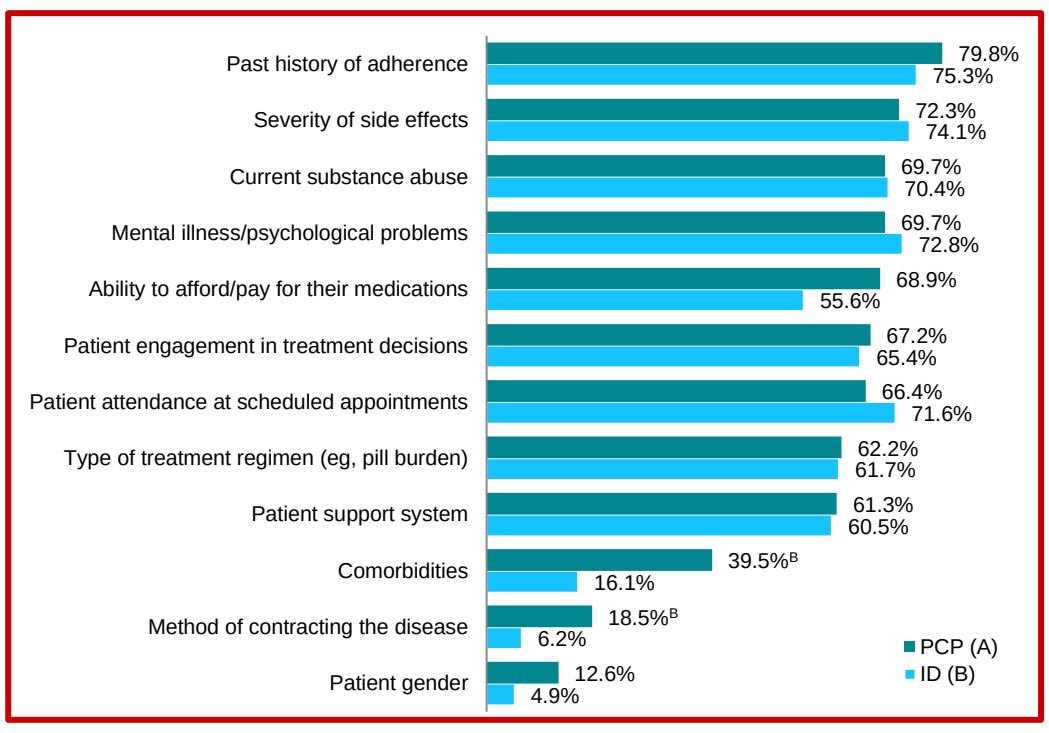
Statement	Participants Who Reported They Communicated With Their HCP Most of the Time or Always During Visits in the Past 12 Months: MMAS Score of <3 (Adherent) (n=273) (A)[a] N (%)	Participants Who Reported They Communicated With Their HCP Most of the Time or Always During Visits in the Past 12 Months: MMAS Score of ≥3 (Non-Adherent) (n=113) (B)[a] N (%)
We discussed my lab results	253 (92.6%) **B**	70 (62.3%)
We discussed the importance of sticking to my treatment regimen	190 (69.8%)	67 (59.4%)
We talked about whether I had any problems with my medicines or any side effects	187 (68.2%) **B**	54 (47.8%)
I was provided with solutions to manage my HIV treatment regimen	143 (52.8%)	60 (53.2%)
We discussed how my HIV affects my life	112 (41.2%)	56 (49.4%)
We discussed my system for adhering to my HIV treatment regimen (eg, calendars, reminders from family/caregivers)	116 (42.4%)	51 (44.9%)
We discussed my ability to afford my medications	82 (30.1%)	53 (47.1%) **A**
We talked about the types of support available to me (eg, family, support groups, other health care professionals)	64 (23.3%)	46 (40.8%) **A**
I was encouraged to attend programs in the community that could help me better live with and understand my HIV (eg, educational activities or support groups)	60 (22.0%)	27 (24.1%)

[a]Statistical significance (95% confidence) between columns is denoted using letters.

Adherence from the physician perspective

- Approximately 22% of PCPs and 29.6% of ID specialists reported that almost all or all of their treatment-naive patients were fully adherent to their HIV medications
- Physicians were presented with 12 factors that may influence adherence to treatment and were asked to rate each with respect to how predictive (1 = not at all predictive; 2 = somewhat predictive; 3 = moderately predictive; 4 = very predictive; 5 = extremely predictive) these factors were in determining patients’ adherence. Over half of the PCPs and IDs reported that 9 factors were very/extremely predictive of adherence (Figure 1)

Figure 1. Physicians’ Responses to Factors Influencing Adherence to HIV Regimen



Differences between patient and physician perspectives on adherence

- Patients and physicians were asked to select the most common reasons for non-adherence with HIV medications. Both surveys included the same question with 22 response options, and participants were instructed to select all responses that applied (Table 3)
- Physicians were more likely than patients (64.5% vs 13.7%) to cite side effects as a reason for non-adherence
- Forgetting to take medication and availability of pills were the most commonly cited reasons for non-adherence by both groups
- A larger proportion of physicians reported reasons for non-adherence for all of the response options than were reported by patients (note: data not presented)

Table 3. Comparison of the Top Reasons for Non-Adherence According to HIV Patients and Physicians

Top Reasons for Not Taking HIV Medications as Prescribed (Ranked by Patients and Physicians)	Patients	Physicians
Forgetting to take	36.2%	67.5%
Not having pills available (eg, away from home, on vacation)	17.7%	39.5%
Felt ill or sick	15.9%	45.5%
Change in daily schedule	15.3%	24.5%
Busy with other things	14.9%	34.5%
Feeling depressed/overwhelmed	14.6%	61.0%
Experienced side effects	13.7%	64.5%
Had difficulty taking medications at specific times	13.2%	33.0%
Did not want others to notice me taking my medication(s)	12.9%	26.0%

Limitations

- The study used web-based convenience samples
- The patient participants may have had comorbid conditions that could have affected the study results
- All data were self-reported. For the patient survey, repeated logic checks for certain questions such as HIV status and identity of the medications taken were included. Nevertheless, some recall error is likely inevitable for both surveys
- Response rates to voluntary surveys are rarely high enough to remove concerns regarding potential bias. The forced termination of data collection after a targeted number of questionnaires have been completed creates an artificial response rate, and one that is lower than would otherwise be achieved if an unlimited number of invited participants were allowed to participate

Discussion

- The patients included in this study represent a demographically diverse sample, and their disease, sexual identity, and medication characteristics are consistent with those expected for patients treated for HIV. Notably, ethnicities, geographic regions, socioeconomic levels, employment statuses, and insurance types were well represented among the study participants
- The sample was diverse for both types of physicians in terms of the geographic locations where they practiced and type of medical practice
- The results of this study provide valuable insights from patient and prescriber perspectives in determining drivers and barriers to adherence, understanding factors important in choosing an HIV treatment regimen, and evaluating gaps and synergies between patient and physician perspectives
- Despite good well-being and self-reported satisfaction for most of the patients in the sample, the results suggest that there remain several unmet needs for HIV patients
  - Almost half of participants reported that it was difficult to pay for the medication to manage their HIV
  - Approximately one-third of participants reported that their HIV medications were not always available at a local pharmacy
  - Those participants taking more than 1 pill to treat their HIV were significantly more likely to be non-adherent than those taking 1 pill
  - There was a disconnect regarding reasons for non-adherence reported by HCPs and patients. More physicians than patients thought that patients were more likely to forget to take their HIV medications, or to not take them because of side effects or because of feeling depressed

Conclusion

- Adherence challenges persist with cART for both physicians and patients. HIV and its treatment has a substantial impact on the lives of patients and many factors come into play during decision-making by both patients and physicians

Acknowledgment

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