CARTA AL EDITOR

PHARMACIST-LED PATIENT EDUCATION ON ANTIRETROVIRAL THERAPY: IS IT ENOUGH TO IMPROVE ADHERENCE?

¿ES LA EDUCACIÓN TERAPÉUTICA LA MEJOR ESTRATEGIA PARA AUMENTAR LA ADHERENCIA DE LA TERAPIA ANTIRRETROVIRAL?

Pharmacist-led patient education on antiretroviral therapy: is it enough to improve adherence?★

The Acquired Immunodeficiency Syndrome (AIDS) became a manageable disease after effective control of HIV replication through antiretroviral therapy (ART).

The problem to be faced now is non-compliance to ART, which can be associated mostly to adverse effects, complexity of pharmacotherapy and lack of knowledge about the disease and the medication[1].

A pharmacotherapeutic follow-up was conducted with a 58-year-old man with HIV under ART for 12 years, and non-compliance to ART. He had a medical history of partial blindness due to ocular Herpes Zoster, and hospitalizations due to pneumonia.

Six meetings were realized within seven months. The first one consisted of anamnesis and consultation of medical record to verify drug dispensing data, and clinical and laboratory characteristics. Instruments to evaluate adherence, compliance and quality of life were also applied (Table 1), and the patient was classified as non-compliant according to the instrument SMAQ[3] by frequently forgetting to take the medication and to administrate it improperly.

The main complaints related to the ART were headache, difficulty to swallow the medication and gastrointestinal discomfort.

A care plan was proposed, targeting to solve problems related to the therapy, and to improve the knowledge regarding the disease and the therapy itself through educational interventions.

After the second meeting changes were made to the therapy, aiming to improve effectiveness and eliminate gastrointestinal discomfort. A daily medication diary was proposed according to the patient's routine to help and incentive the intake of medicines. It reinforced posology and drug information and was monitored till the end of the intervention.

During the educational interventions, the patient reported having none previous understanding of the benefits and risks of the therapy and the importance of adherence. This misunderstanding used to lead him to take all the medication together during weekends, and to take it daily without scheduling.

On the last meeting the same instruments and parameters of the first were verified, as well as intervention feedback. The patient reported that the acquired knowledge during the interventions helped him to understand the disease, the importance and mechanism of medication and the need to be compliant. He also correlated the improvement on his quality of life to the interventions.

The patient was classified as compliant on the last evaluation of SMAQ[2] and enhanced a higher score on CEAT-VIH[3], which evaluates adherence. The score of the HAT-Qol[4] instrument also had positive changes, especially on the dimension "Health Worries", what evidences that the interventions had a positive impact on quality of life (Table 1).

He changed the medicines administrations as recommended, but continued with the problems to swallow the medication and gastrointestinal discomfort.

The patient was receiving six different drugs, including three protease inhibitors (PI) (Table 2), which are known for causing gastrointestinal toxicity. In this way the gastrointestinal discomfort

might had been related not only to adverse effects of medication but also to daily pill burden[1]. Elimination of some drugs could have solved it and also eliminated omeprazole, which was being used for gastrointestinal protection.

Recommendations were done to the medical team during the follow up, but due to the history of poor compliance and serious history of opportunistic disease and uncontrolled AIDS, no drugs were switched over. A study conducted by Kelly DV et al (2013) showed that physicians believed that the most important pharmacist function was to help improving patient adherence, but rated functions in which the pharmacist made recommendations to physicians regarding modification of a patient's drug therapy as least important. This shows that sometimes physicians do not see how the pharmacists could work and how advantageous this cooperation could be, as improvement in adherence is highly related to modifications on pharmacotherapy[5]. Although individual interventions can positively impact on adherence, simplification of drug treatments among all strategies has probably the greatest impact[6].

One possible reason for the medical team refusal for drug replacement is that the patient was receiving double-boosted PI regimen (ritonavir, saquinavir and atazanavir), which have a high degree of antiviral efficacy and biodisponibility. Their effective viral suppression discourages the development of resistance with occasional missed doses, making them the most forgiving regimen[7].This would explain why he had already satisfactory levels of CD4+ count and HIV viral load, and therefore the achieved global health improvement did not transform into measurably better immunological and virological outcomes.

Also, it has been shown that antiretroviral drug resistance might not be a major determinant of clinical disease progression[8], so it could have been better to keep hold to a partial compliant efficient regimen than risking switching it.

Although the pharmacotherapeutic follow up improved self-care and awareness regarding the therapy, interventions seeking to simplify ART and strengthen cooperation between pharmacists and physicians might have a better impact on adherence, especially on symptomatic patient.

Table 1. Characteristics of lifestyle, clinical records, quality of life, adherence and posology

Characteristics	Baseline	Timeline
Lifestyle		
Smoking	Absent	Absent
Drinking	Frequent	Frequent
Exercising	Rare	Regular
Clinical Characteristics		
Viral load (copies/mL)[1]	Undetectable	Undetectable
Lymphocytes CD4+ count (cells/μL)[2]	667	550
Quality of Life		
HAT-Qol instrument[3]		
Overall function	83,3	83,3
Life satisfaction	87,5	93,75
Health worries	62,5	93,75
Financial worries	41,7	83,3
Medication worries	35	40
HIV mastery	100	100
Disclosure worries	60	85
Provider trust	100	91,63
Sexual function	75	75
Adherence		
SMAQ instrument	Non-adherent	Adherent
CEAT-VIH instrument[4]	70	76
Drug dispensing data	Up to date	Up to date

[1] Viral load is considered undetectable when there is <50 copies of virus/mL of blood

[2] The disease is considered controlled when CD4+ cell count is >350 cells/μL

[3] Dimensions accessed by HAT-Qol. Linear 0-to-100 scale, where 0 is the worst score possible and 100 is the best score possible

[4] Linear 17-to-89 scale, where 17 is the worst score possible and 89 is the best score possible

Table 2. Pharmacotherapy

	Drug	Posology	Class
ART Pharmacotherapy	Atazanavir	300mg OD	PI
	Ritonavir	100mg OD	PI
	Tenofovir	300mg OD	NRTI
	Lamivudina	150mg BID	NRTI
	Saquinavir	1g BID	PI
	Omeprazole	20mg OD	PPI

PI: protease inhibitor, NRTI: nucleoside reverse transcriptase inhibitor, PPI: proton pump inhibitor

Ana Clara Squilanti, Fernanda Mariana de Oliveira, Patrícia de Carvalho Mastroianni[*]
Department of Drugs and Pharmaceutics of School of Pharmaceutical Sciences of Universidade Estadual Paulista Júlio of Mesquita Filho (Araraquara, SP, Brazil). Rod. Araraquara - Jaú, km 1, 14801-902 - Araraquara - SP, Brazil

* Autor de correspondencia: patriciamastroianni@yahoo.com.br

REFERENCES

1. Guimarães MDC, Rocha GM, Campos LN et al. Difficulties reported by HIV-infected patients using antiretroviral therapy in brazil. Clinics. 2008; 63(2): 165-172.

2. Knobel H, Alonso J, Casado JL et al. Validation of a simplified medication adherence questionnaire in a large cohort of HIV-infected patients: the GEEMA Study. AIDS. 2002; 16(4): 605-613.

3. Remor E, Milner-Moskovics J, Preussler G. Adaptação brasileira do "Cuestionario para la Evaluación de la Adhesión al Tratamiento Antirretroviral". Rev Saúde Pública. 2007; 41(5): 685-694.

4. De Soárez PC, Castelo A, Abrão P, Holmes WC, Ciconelli RM. Tradução e validação de um questionário de avaliação de qualidade de vida em AIDS no Brasil. Rev Panam Salud Publica. 2009; 25(1):69–76.

5. Kelly DV, Bishop L, Young S, Hawboldt J, Phillips L, Keough TM. Pharmacist and physician views on collaborative practice: Findings from the community pharmaceutical care project. Can Pharm J (Ott). 2013; 146(4): 218–22.

6. Palella FJ Jr, Delaney KM, Moorman AC et al. Declining morbidity and mortality among patients with advanced human immunodeficiency virus infection. HIV Outpatient Study Investigators. N Engl J Med. 1998; 338(13):853-860.

7. Shuter J. Forgiveness of non-adherence to HIV-1 antiretroviral therapy. Journal of Antimicrobial Chemotherapy. 2008; 61: 769–773.

8. Recsky MA, Brumme ZL, Chan KJ, Wynhoven B, Yip B, Dong WW, et al. Antiretroviral resistance among HIV-infected persons who have died in British Columbia, in the era of modern antiretroviral therapy. Journal of Infectious Diseases. 2004; 190 (2), 285–92.