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Antiretroviral therapy: factors related to lack of adherence

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Abstract

Objective: to analyze the profile of patients with HIV/AIDS being followed up at a Specialized Care Service and their adherence to antiretroviral therapy. **Methods:** cross-sectional and descriptive study, with a qualitative approach, carried out in August and September 2020, in Fortaleza, capital of the state of Ceará. Voluntary recruitment took place during pharmaceutical care in a reserved room and an adapted form and Morisky's Therapeutic Adherence Scale were used. **Results:** 95 patients were interviewed, of which 58.9% (n= 56) were male. There was a predominance of young adults aged 21 to 30 years, 34.7% (n= 33) and with more than 12 years of schooling, 57.9% (n= 55); 60.0% (n= 57) were born in the metropolitan region and 81.1% (n= 77) live in the capital. 60.0% (n= 57) reported having been diagnosed with HIV/AIDS between 1 and 5 years ago; 74.7% (n= 71) had an undetectable viral load (<50 copies/mL), however 22.1% (n= 21) did not have up-to-date exams. Most patients (n=86) do not remember the names of the drugs they use. 13.7% (n=13) stated that they stopped taking the medication when they felt sad and 12.6% (n=12) for consuming alcohol. The forgetting factor was the most reported 80.0% (n= 76). Along with this, 91.5% (n=87) reported that pharmaceutical care helps a lot in drug orientation. In assessing adherence to treatment, 41.1% (n=39) had low adherence, with a score of less than 6. **Conclusion:** poor adherence to antiretroviral therapy may be associated with several factors. The study demonstrates the importance of the pharmacist in improving acceptance of treatment.

Keywords: adherence to treatment; antiretrovirals; HIV; acquired immunodeficiency syndrome; pharmacotherapy; pharmacist.

Terapia antirretroviral: fatores relacionados à falta de adesão

Resumo

Objetivo: analisar o perfil de pacientes portadores de HIV/Aids em acompanhamento em um Serviço de Atendimento Especializado e sua adesão à terapia antirretroviral. **Métodos:** estudo transversal e descritivo, com abordagem qualitativa, realizado nos meses de agosto e setembro de 2020, em Fortaleza, capital do estado do Ceará. O recrutamento voluntário ocorreu durante o atendimento farmacêutico em sala reservada e utilizou-se de formulário adaptado e a Escala de Adesão Terapêutica de Morisky. **Resultados:** foram entrevistados 95 pacientes dos quais 58,9% (n= 56) eram do sexo masculino. Houve predominância de jovens adultos de 21 a 30 anos, 34,7% (n= 33) e com escolaridade maior que 12 anos, 57,9% (n= 55); 60,0% (n= 57) eram naturais da região metropolitana e 81,1% (n= 77) residem na capital. 60,0% (n= 57) afirmaram ter diagnóstico de HIV/AIDS entre 1 e 5 anos; 74,7% (n= 71) tinham carga viral indetectável (<50 cópias/mL), contudo 22,1% (n= 21) não possuíam exames atualizados. A maioria dos pacientes (n=86) não lembra os nomes dos medicamentos que utilizam. 13,7% (n= 13) afirmaram que deixaram de tomar o medicamento quando se sentiram tristes e 12,6% (n=12) por consumir bebida alcoólica. O fator esquecimento foi o mais relatado 80,0% (n= 76). Junto a isso, 91,5% (n= 87) relataram que o atendimento farmacêutico auxilia muito na orientação dos medicamentos. Na avaliação da adesão ao tratamento, 41,1% (n= 39) apresentaram uma baixa adesão, com uma pontuação menor que 6. **Conclusão:** à baixa adesão à terapia antirretroviral pode estar associada a vários fatores. O estudo demonstra à importância do farmacêutico na melhoria da aceitação ao tratamento.

Palavras-chave: Adesão ao tratamento; antirretrovirais; HIV; síndrome de imunodeficiência adquirida; farmacoterapia; farmacêutico.

Introduction

Since the beginning of the Acquired Immunodeficiency Deficiency Syndrome (AIDS) pandemic in the first half of 2019, 966,058 cases have been identified in Brazil: 65.6% of them in men and 34.4% in women. Although a mean of 39,000 new cases have been recorded in the last five years, there has been a reduction in the number of annual cases. 37,161 were recorded in 2018, when compared to 42,934 new AIDS cases identified in 2013[1].

From 1996 onwards, free and universal distribution of Antiretroviral Therapy (ART) was launched in Brazil, supported by Law No. 9,313, which is part of strategies and policies to combat the epidemic. This resulted in a reduction in mortality and hospital admissions, as well as in lower incidence of opportunistic infections and vertical transmission of the Human Immunodeficiency Virus (HIV)[2]. Adherence to antiretroviral medication use exerts a direct impact on the treatment and may result in ART success or failure. Adherence related to ART is associated with a group of factors, including availability of access to medications, frequency and compliance with laboratory tests, consultations and receiving medications at the right time[3].

Currently, although the therapeutic schemes are simplified, with the flexibility of drug combinations, which eases their use, there are several challenges to be faced in adhering to ART, among which we can list the following: low schooling, side effects of the medications, non-acceptance of the diagnosis and adequacy of the treatment to the routine, among others. Therefore, everyone needs to be involved in this process, which encompasses patient, health team, family and other people in the social support network[4,5].

Therefore, promoting strategies to improve adherence requires investigation and understanding of factors that lead to their elaboration. In this aspect, work has been ongoing with the vulnerability notion, with the aim of identifying the main predispositions for non-adherence to ART[5]. It is known that success in treating these patients, that is, reducing viral load in the bloodstream, depends entirely on adherence to the pharmacotherapy employed. Therefore, studies focusing on monitoring therapeutic adherence in people with HIV are extremely important, given the scarcity of research using this approach.

In this context, the current study aims at analyzing the profile of patients with HIV/AIDS monitored in a Specialized Care Service (*Serviço de Atendimento Especializado*, SAE) for Sexually Transmitted Infections (STIs) and HIV/AIDS and their antiretroviral therapy acceptance, identifying possible factors interfering with the treatment, hoping that the results may assist in the future in the practices applied in health services, to monitor adherence to antiretroviral treatments.

Methods

This is a cross-sectional and descriptive study with a quantitative approach, carried out at an Antiretroviral (ARV) Medication Dispensing Unit (MDU) in Fortaleza-Ceará. The MDU is incorporated into the Pharmacy service of a secondary-level public hospital belonging to the Fortaleza Municipal Health Department. The hospital is a reference in maternal and child health care, offering hospitalization in the Pediatrics, Neonatology, Gynecology and Obstetrics specialties. It also has a Specialized Care Service (SAE) for patients with STIs/HIV/AIDS comprised by a physician, nurse, pharmacist, social worker and psychologist.

To assess adherence to the treatment, all patients registered in the MDU aged at least 18 years old were included. Priority was given to patients abandoning treatment, that is, those with at least ninety days without taking ARV medications in the MDU. Identification of the abandonment cases was based on a medication dispensing list from the Ministry of Health's Medication Logistics Control System (*Sistema de Controle Logístico de Medicamentos*, SICLOM). Telephone contacts were made as an active search strategy, based on ethical precepts and safeguarding confidentiality and respect for the users' rights.

The other patients, who attended the MDU to receive medications in August and September 2020, were also invited to participate in the study. Recruitment took place during pharmaceutical services in a reserved and private room. The users who showed no interest in the research were excluded.

The epidemiological data were obtained from SICLOM and the variables on treatment adherence were collected through structured interviews, using a pre-validated form prepared by the researchers and based on the questionnaire adapted by Remor, Milner-Moskovics and Preussler[6] and on adequacy of the Therapeutic Adherence Scale proposed by Morisky *et al.*[7].

All the information was organized in tables and graphs, expressed in a descriptive way using Excel® 2016. The numerical variables were described as mean and standard deviation and the categorical variables as absolute (n) and relative (%) references. The research was approved by the Ethics Committee of the hospital where the study was carried out under opinion number 3,027,219.

Results

During the study period, the MDU had 1,409 registered individuals living with HIV/AIDS. Of these, 18.4% (n=259) were abandoning treatment, with a mean delay of 776 days in receiving ARVs. Telephone contacts were made with all these patients as an attempt to re-accommodate them. However, only 5.4% (n=76) of the users were successfully contacted and they did not participate in the research for not returning to the service.

In this way, interviews were carried out with 95 patients who came to receive medications during pharmaceutical care, of which 58.9% (n=56) were male. The study presented a male/female ratio of 1.4:1.

There was predominance of young adults aged from 21 to 30 years old (34.7% [n=33]) and with more than 12 years of study (57.9% [n=55]). In relation to birthplace and origin, 60.0% (n=57) were from the Fortaleza metropolitan region and 81.1% (n=77) of the patients lived in the capital city (Table 2). It was also verified that 60.0% (n=57) of the patients interviewed asserted having been diagnosed with HIV/AIDS between 1 and 5 years ago and that 74.7% (n=71) had undetectable viral loads (<50 copies/mL); however, 22.1% (n=21) did not have any updated viral load test (Table 2).

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Table 1. Sociodemographic profile of the patients with HIV/AIDS (Aug-Sep, 2020).

Information (N=95)	
Sociodemographic data	
Mean age (years old) (Standard Deviation)	37.6 (10.9)
Age group (years old)	N. (%)
18-20	-
21-30	33 (34.7)
31-40	26 (27.4)
41-50	22 (23.2)
51-60	11 (11.6)
>60	3 (3.1)
Gender	
Male[1]	56 (58.9)
Marital status	
Single	63 (66.3)
Married	16 (16.8)
Divorced	3 (3.2)
Widowed	3 (3.2)
Stable union	10 (10.5)
Schooling (years)	
None	2 (2.1)
1-3	3 (3.2)
4-7	19 (20.0)
8-11	16 (16.8)
>12	55 (57.9)
Birthplace	
Fortaleza	57 (60.0)
Inland of Ceará	29 (30.5)
Other states	9 (9.5)
Origin	
Fortaleza	77 (81.1)
Inland of Ceará	18 (18.9)

Table 2. Clinical profile of the patients with HIV/AIDS (Aug-Sep, 2020).

Information (N=95)	
Information about HIV and AIDS	**N. (%)**
Time since diagnosis (years)	
<1	10 (10.5)
1-5	57 (60.0)
6-10	20 (21.1)
>10	8 (8.4)
Viral load (copies/ml)	
<50	71 (74.7)
50-1,000	2 (2.1)
> 1,000	1 (1.1)
No recent tests (<6 months)	21 (22.1)
Treatment	
Initial (after diagnosis)	
TDF+3TC/DTG	44 (46.3)
TDF+3TC+EFZ	22 (23.2)
AZT+3TC/EFZ	6 (6.3)
Others	23 (24.2)
After monitoring	
TDF+3TC/DTG	51 (53.7)
TDF+3TC+EFZ	16 (16.8)
AZT+3TC/EFZ	1 (1.1)
Others	27 (28.4)

[1]Dichotomous variable for which information from only one of the categories was presented. TDF+3TC/DTG: Tenofovir + Lamivudine / Dolutegravir; TDF+3TC+EFZ: Tenofovir + Lamivudine + Efavirenz; AZT+3TC/EFZ: Sidovudine + Lamivudine / Efavirenz.

In relation to ART, 90.5% (n=86) of the patients did not remember the names of the medications they used. The initial regime with Tenovofir (TDF) + Lamivudine (3TC), known as 2 in 1, associated with Dolutegravir (DTG), was prescribed to 46.3% (n=44) of the interviewees, followed by 23.2% (n=22) in use of Tenovofir + Lamivudine + Efavirenz (EFZ), known as 3 in 1. However, in relation to the therapy, there was an increase to 53.7% (n=51) in the TDF/3TC + DTG therapy use and a reduction to 16.8% (n=16) in the TDF/3TC/EFZ therapy use. This change in therapy was mainly due to the occurrence of Adverse Drug Reactions (ADRs) such as nausea, dizziness, palpitations, gastrointestinal effects and kidney damage, among others, as 58.9% (n=56) reported emergence of these reactions (Table 2).

In relation to drug administration, 13.7% (n=13) asserted that they stopped taking the medication when they felt sad or depressed and 12.6% (n=12) because they consumed alcoholic beverages. When asked if they stopped taking their medications for any other reason, the forgetfulness factor was the most reported, with 80.0% (n=76). Along with that, 91.5% (n=87) reported that pharmaceutical assistance assists to a large extent in guiding drug administration.

When asked whether they considered that their health had improved since treatment initiation, 56.8% (n=54) of the individuals stated that there had been a considerable improvement in their health, which was noticeable through the improvements in immunity and physical disposition.

As for the psychosocial factors, in the family aspect, 69.5% (n=66) of the participants asserted that their family knows about their diagnosis; however, 49.5% (n=32) reported that this factor does not interfere with their treatment. In turn, regarding the religious aspect, 53.7% (n=51) declared themselves Catholics and that the fact of professing a religion assists in their treatment through faith. Nearly 66.0% (n=63) asserted having a job, of which 95.5% (n=60) felt that work does not hinder carrying out their treatment, except in relation to scheduling appointments and exams (Table 3).

When assessing adherence to the treatment, it was observed that 47.4% (n=45) of the interviewees had no difficulty remembering to take their medications; however, 62.1% (n=58) stated that they sometimes forget to do so, 15.8% (n=15) answered that they had already stopped taking their medication or reduced the dose without telling their physician, and 97.9% (n=93) asserted that they did not stop taking their medication when they felt their disease was under control. Also when assessing adherence to the treatment, 41.1% (n=39) presented low adherence, with scores below 6 (Table 3).

Table 3. Adherence of the patients with HIV/AIDS (Aug-Sep, 2020).

Information (N=95)	
Factors that interfere with adherence	N. (%)
Can't remember the name of the medications[1]	86 (90.5)
Health improved after treatment initiation	
Not at all	25 (26.3)
A little	16 (16.8)
Very much	54 (56.8)
Had to change their routine due to the treatment[1]	22 (23.2)
The number of tablets hinders treatment[1]	8 (8.4)
The family knows about their HIV status[1]	66 (69.5)
Professes a religion[1]	71 (74.7)
Works[1]	63 (66.0)
Had an adverse drug reaction[1]	56 (58.9)
Felt depressed or sad. stopped taking the medications[1]	13 (13.7)
Stopped taking the medications to consume alcohol or other drugs[1]	12 (12.6)
Stopped taking the medications for some other reason[1]	64 (67.4)
The pharmacist's explanation assists in taking the medications	
Not at all	3 (3.2)
A little	5 (5.3)
Very much	87 (91.5)
Treatment adherence assessment	
High	18 (18.9)
Average	38 (40.0)
Low	39 (41.1)

Discussion

The existence of public policies for universal access to antiretroviral medications in Brazil through the Unified Health System (*Sistema Único de Saúde*, SUS) means that studies like these, on adherence to ART, become of utmost relevance because they help health professionals understand the factors that may hinder or impede the patients' treatments, seeking ways to ensure adequate and continuous therapies[8].

This study showed a patients' profile with characteristics compatible with the Brazilian profile, according to the 2019 epidemiological bulletin[1], such as predominance of males and the age group between 20 and 35 years old, in line with the results found by Albuquerque and Santos[9].

In relation to adherence, male patients showed greater adherence when compared to women, similarly to other studies[10,11]. This can be related to the fact that women are more involved with household chores and family care, leaving aside their needs, as well as personal care. In other situations, women adhere more to treatments when they are pregnant; this is due to greater concern regarding transmission of the virus to their child[12].

In relation to schooling level, there was prevalence of people with Higher Education (more than 12 years of study), higher than the Brazilian epidemiological profile[1], which presented HIV-positive people with low schooling, corroborating the result also found by Galvão *et al.*[13]. High schooling levels can assist in the search for information about the disease, providing better resources for dealing with the diagnosis and easing adherence to the treatment[9]. Despite the prevalence of people with high schooling levels, the patients' profile in the study showed average and low adherence, with 40.0% (n=38) and 41.1% (n=39), respectively.

It is not possible to reach consensus on the time since diagnosis related to adherence to the therapy; however, it is mentioned that patients with shorter diagnosis times have a lower adherence rates when compared to those with longer periods of time since their diagnosis: this factor cam be related to not perceiving any improvement in their clinical condition and to the emergence of adverse drug reactions at treatment initiation[9,13]. The current study showed patients with 1 to 5 years since their diagnosis with average to high adherence levels.

In relation the antiretroviral treatment scheme, the main reason for the change was the emergence of adverse reactions, a result similar to the ones found by Lima *et al.*[14], in which they highlighted zidovudine (AZT) as the main substance altered in the treatment regime, as it caused the most severe adverse reactions, and by Vielmo *et al.*[15], who identified that the reasons for the changes were anemia caused by AZT (10%) and skin rush caused by EFZ (5%). In the current study, the substance identified as the main cause of adverse reactions was efavirenz. In addition to that, the treatment for opportunistic diseases can take place simultaneously with ART, which somehow affects tolerance to antiretrovirals, with the possibility of increasing toxicity of these medications and hinder adherence to the treatment[16].

It is noticeable that patients stop using antiretroviral medications when they consume alcoholic beverages, which is a factor that interferes with adherence to ART and may favor possible virus resistance[17]. However, the study did not find patients with this behavior and profile, with 12.6% (n=12) who stopped taking their medications to consume alcoholic beverages.

Psychosocial support is also a prominent factor when talking about adherence to the therapy for chronic diseases. The family and religious aspect is cited as one of the main psychological supports among the patients interviewed, as social support plays an important role in alleviating negative events and their possible consequences, recognizing that adherence to the treatment does not only consist of pharmacological factors. However, many patients with HIV/AIDS choose not to share their diagnosis for fear of suffering prejudice, thus causing social isolation and, consequently, a decrease in interpersonal relationships[8,18].

Pharmacists are part of the health team, actively participating in patients' care and guidance, thus contributing to clarifying doubts about the treatment and helping to improve acceptance in these patients[19]. Oliveir, Filipin and Giardini[20] showed the importance of pharmaceutical professionals for the patients, as important members of the health team.

In assessing adherence, there are still no methods that promote a full and accurate adherence analysis; therefore, there are several ways of analyzing adherence to drug therapy through questionnaires, self-reports and dispensing forms, among others. If we compare the current research with the study by Morisky *et al.*[7], who evaluated adherence in patients undergoing treatment with antihypertensive medications, we observe similar results with the predominance of patients with low adherence to the treatment, which may indicate that adherence does not depend only the type of medication and treatment, but that it is rather a multifactorial issue.

Even so, it was not possible to find any comparison in the literature on the 8-item Morisky Method in the treatment of people with HIV/AIDS, only studies for patients with other diagnoses, showing the importance of the current research for future comparisons regarding ART acceptance, as the results shown were of low adherence among those interviewed, causing a possible increase in viral loads and a reduction in CD4T cell counts, posing risks to the patients' health and increased chances of spreading the virus[11,18].

This study had the limitation of only using the patient's reports as a measure to evaluate treatment adherence. Another limiting factor was the impossibility of conducting interviews with the patients abandoning treatment, as they were not represented in the results in terms of sociodemographic, clinical and adherence aspects.

In addition to that, interpreting adherence through dispensing of the ARVs only suggests adherence or non-adherence, as there is no way to ensure that, even in possession of the medications, the patients have taken them regularly or as prescribed[21].

Conclusion

The patients' low adherence to the antiretroviral therapy can be associated with lack of psychosocial support, emergence of adverse reactions to antiretroviral medications and consumption of alcoholic beverages.

The patients' reports showed the importance of pharmacists for guidance on medication use and the consequent improvement in adherence to the treatment, becoming essential and necessary professionals for the service.

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Collaborators

Project conception: AFA, EDB, GAR. Data collection: AFA, EDB, DKS, ASA. Data analysis and interpretation: AFA, EDB, DKS, ASA. Writing of the article and responsibility for all the information presented in the paper, ensuring accuracy and integrity of any of its parts: AFA, EDB, DKS, ASA, GAR. Relevant critical review of the intellectual content and final approval of the version to be published: IGA, GAR.

Declaration of conflicts of interest

The authors declare that there is no conflict of interest in relation to this article.

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