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INTEGRATIVE REVIEW ARTICLE

THE USE OF ANTIRETROVIRAL THERAPY TO PEOPLE LIVING WITH HIV/AIDS: IMPLICATIONS FOR PATIENT SAFETY

USO DE TERAPIA ANTIRRETROVIRAL EM PESSOAS VIVENDO COM HIV/AIDS: IMPLICAÇÕES PARA SEGURANÇA DO PACIENTE

EL USO DE LA TERAPIA ANTIRETROVIRAL A LAS PERSONAS QUE VIVEN CON VIH/SIDA: IMPLICACIONES PARA LA SEGURIDAD DEL PACIENTE

Maria do Carmo Santos Ferreira[1], Patrícia Maria Gomes de Carvalho[2], Mônica Celes Nascimento Machado[3]

ABSTRACT

Objective: analyzing the national literature after identifying the implications on the use of antiretroviral therapy for patient safety living with HIV/AIDS. ***Method:*** an integrative review aimed at answering the question << ***What are the implications on the use of antiretroviral therapy for patient safety living with HIV / AIDS and how health professionals can act to ensure the safety of these patients?*** >>, held in LILACS database and virtual library Scielo, with articles in full, in Portuguese, published between 2006 and 2013. The sample consisted of 10 studies. ***Results:*** even with the advance of ART, we found complaints arising from the treatment, because this therapy causes numerous side effects in the short and long term. There were found few alternatives that guarantee or minimize risks to safety of these patients. ***Conclusion:*** health professionals play an important role in the care of people using ART and should guide them according to its side effects, the risk of treatment dropout, as well as the benefits of it. ***Descriptors:*** HIV; Treatment; Risk.

RESUMO

Objetivo*:** analisar a literatura nacional após identificar as implicações do uso da terapia antirretroviral para a segurança do paciente que vive com HIV/ AIDS. ***Método*:** revisão integrativa com vistas a responder à questão ***<< Quais as implicações do uso da terapia antirretroviral para segurança do paciente que vive com HIV/AIDS e de que forma os profissionais de saúde podem atuar para garantir a segurança desses pacientes? >> realizada na base de dados LILACS e biblioteca virtual Scielo, com artigos na íntegra, em português, publicados entre 2006 e 2013. A amostra foi composta por 10 estudos. ***Resultados***: mesmo com o avanço da TARV, encontramos queixas advindas do tratamento, pois esta terapia provoca inúmeros efeitos colaterais em curto e longo prazo. Foram encontradas poucas alternativas que garantam ou minimizem riscos à segurança desses pacientes. ***Conclusão***: os profissionais de saúde exercem papel importante no cuidado de pessoas em uso de TARV e devem orientá-los quanto aos seus efeitos colaterais, os riscos do abandono do tratamento, bem como os benefícios do mesmo. ***Descritores*:** HIV; Tratamento; Risco.

RESUMEN

Objetivo: analizar la literatura nacional después de identificar las implicaciones del uso de la terapia antirretroviral para la seguridad del paciente que vive con VIH/SIDA. ***Método:*** es una revisión integradora destinada a responder a la pregunta << ***¿Cuáles son las implicaciones del uso de la terapia antirretroviral para la seguridad del paciente que vive con el VIH / SIDA y cómo los profesionales de la salud pueden actuar para garantizar la seguridad de estos pacientes?***>> celebrada en la base de datos LILACS y biblioteca virtual Scielo, con los artículos en su totalidad, en portugués, publicados entre 2006 y 2013. La muestra estuvo constituida por 10 estudios. ***Resultados:*** incluso con el avance de la TARV, encontramos quejas derivadas del tratamiento, ya que esta terapia provoca numerosos efectos secundarios a corto y largo plazo. Encontraron pocas alternativas que garanticen o minimicen los riesgos para la seguridad de estos pacientes. ***Conclusión:*** profesionales de la salud desempeñan un papel importante en el cuidado de personas que utilizan TARV y deben guiarlos en cuanto a sus efectos secundarios, el riesgo de abandono del tratamiento, así como los beneficios del mismo. ***Descriptores:*** VIH; Tratamiento; Riesgo.

[1]Graduate Student of Nursing at the University Center UNINOVAFAPI. Teresina (PI), Brazil. Email: maria.lia.santos@hotmail.com; [2]Graduate Student of Nursing at the University Center UNINOVAFAPI. Teresina (PI). Brazil. Email: mnicaceles.machado@gmail.com; [3]Nurse, Master Teacher at the University Center UNINOVAFAPI, Doctoral Student of Nursing, University of São Paulo/USP. São Paulo (SP), Brazil. Email: patriciamariag80@hotmail.com

INTRODUCTION

In Brazil, AIDS is a serious public health problem, involving men and women of different age range without color discrimination, race, sexual orientation or religion. The number of cases of HIV/AIDS also shows an increasing rate, which leads to a large percentage of people under antiretroviral therapy.[1]

It is estimated that 630.000 people aged 15 to 49 live with HIV/AIDS in Brazil. Of these, around 255.000 do not know their HIV status.[2] In recent years, the availability of antiretroviral drugs has led to a significant decline in morbidity and mortality related to HIV/AIDS. The advent of resources available treatment brings new challenges for understanding and coping with illness.[3]

With the confirmation of the diagnosis, we start the treatment. With the discovery of new drugs, we observed a greater control of the infection progression and, consequently, health maintenance.[4] The number of people under Antiretroviral Therapy (ART) has increased from 125.000 in 2002 to 217.000 in 2011. Each year, over 30.000 people start ART in Brazil.[2] it should be noted that several factors can influence favorably or unfavorably the adherence to ART.[3]

Although the disease still has no cure, patients with HIV/AIDS have the possibility of a quality of life and increased expectations with ART. One of the great motivators for the proper conduct of the treatment is the fact that users believe in the positive outcome of therapy.[5]

In this context, it operates an important perspective to be commented is that adherence to Antiretroviral Therapy (ART), since it feels a very great lack of information, monitoring and a more humanized care for people living with AIDS.

Adherence to treatment is a constant challenge for patients; there are several factors that imply the reduction of desire and/or ability of patients to comply with medical instructions. They may be related to the virus itself, the drugs, the relationship problems with health professionals (poor communication, ignorance, insensitivity to cultural differences and lack of experience in the treatment of HIV infection), the organization of the health system or the psychosocial difficulties (family, co-workers, social networking).[6]

Accession is understood as the establishment of a joint activity in which the patient is not a mere follower of the medical personnel, but understands and agrees with the recommended prescriptions. From this perspective, membership must be understood as a dynamic process, multidetermined and of responsibility between the patient and the health team.[3]

Adherence needs to be reviewed in all health activities, with the collaboration of all professionals so there is the humanization of care, facilitating the acceptance and integration of therapeutic imposed during the patient's daily life, ensuring the participation of the same in decisions.[7] The initiation of treatment, the schema changes and the occurrence of adverse effects are essential moments of reinforcing adherence to treatment. The preparation towards accession should be started early, even before the start of therapy, according to the needs of each patient, even those initially considered as compliant.[7]

In the routine of health services, the accession difficulties should be identified and understood in each case. This is because the experience of difficulties as well as facilities for membership differs from one person to another; and in the consultation process that the specific individual contexts may be appropriate by the team, favoring the proper and problem-solving approach. However, it is always important to emphasize that some factors acting together can ensure the success of antiretroviral therapy, they are: fit the schedules of medications to their daily routine, physical exercise and rely on social support.[7]

Recognizing the difficulties of people living with HIV/AIDS related to the use of ART provides a better understanding of non-adherence to treatment in Brazilian services. Such knowledge can help improve policies aimed at this group and help health professionals to deal with these difficulties.[8]

Improving patient safety and health care quality has received special attention globally. Currently, the movement for patient safety replaces "blame and shame" for a new approach to "rethink the care processes" in order to anticipate the occurrence of errors before they cause harm to patients in health services. As soon as the error is a human condition, one should make the most of this condition, always knowing, learning and preventing errors in health services. However, health professionals respond to the Councils for the acts of negligence, incompetence and recklessness, which also play an important role in creating a culture of accountability.[9]

Whereas treatment with antiretroviral drugs is of great importance to the quality of life of people living with AIDS and that we have difficulties in joining these patients

therapy due to lack of guidance and some stigmas imposed by society, this paper studied the safety of patient in the use of antiretroviral therapy.

Given the above, this study aims to:

- Analyzing the national literature after identifying the implications of the use of antiretroviral therapy for patient safety living with HIV/AIDS;
- Showing alternatives so that health professionals can act in order to ensuring safety and minimizing the safety risks to these patients.

Given the gaps in safety assurance of HIV-positive patients under antiretroviral therapy, it decided to show the deficits and present some ways to solve this problem; constituting, also, thus an important source of information for possible work that may be performed in the future about the same subject.

METHOD

In the preparation of this integrative review were following the steps: identifying the problem; elaboration of guiding question; establishment of inclusion and exclusion criteria; data collection on a scientific basis; selection of items; analysis and interpretation of results.[10]

The question that guided this study was: What are the implications of the use of antiretroviral therapy for patient safety living with HIV/AIDS and how health professionals can act to ensure the safety of these patients?

For the selection of these studies there were used as databases: Latin American and Caribbean Health Sciences - LILACS and Scientific Electronic Library Online - SciELO. The survey of publications was carried out from July to September 2013 using the following descriptors in Portuguese: side effects AND treatment AND HIV in LILACS; HIV AND treatment AND risk in Scielo.

The sample selection followed the following inclusion criteria: full articles available electronically; focus on the subject of research in individuals above 18 years old; studies published in the time frame from 2006 to 2013; answer the main question; be written in Portuguese. The exclusion criteria were established: review of studies; research they had children or pregnant women as subjects; studies of editorial formats, case studies, epidemiological studies, dissertations, theses and comments. Figure 1 shows the strategy used for the identification and selection of articles that make up the sample of this study.

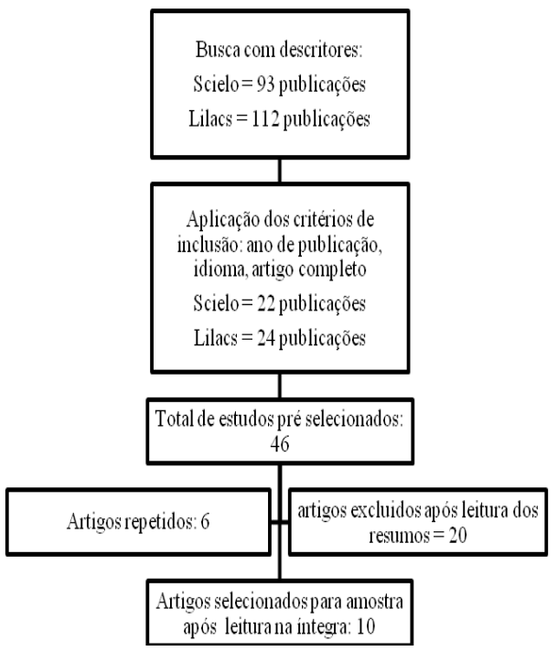

Figure 1. Sample selection flowchart. Teresina-PI, Brazil, 2013.

Prior to the application of the inclusion criteria there were identified 93 articles in SCIELO and 112 in LILACS; however, there were six items repeated in both databases. So, after reading and criteria used in full, the articles were selected for the total sample of 10 studies. The location of the items, corpus of this study, was performed by three researchers independently, that after selecting gathered for discussion and consensus on the studies and their inclusion or exclusion.

For data analysis we used a script prepared by the authors that included the identification of the article, methodological characteristics of the study, level of scientific evidence, implications of the use of antiretroviral therapy for patient safety living with HIV/AIDS and alternatives to that health professionals can act to ensure the safety or minimize the security risks to these patients. Articles were initially analyzed in the form of summaries and subsequently were analyzed in full.

This study did not show the need for approval by the Research Ethics Committee, since that handles data access free; it is not, therefore, documents that require ethical secrecy.

RESULTS AND DISCUSSION

Through electronic search conducted there were located 205 articles. From this total, 159 were excluded for not meeting the inclusion criteria of this research, pre-screened and 46 articles, where six studies were excluded by repetition and 20 articles excluded after reading the abstracts. After analyzing the full texts and consensus meetings, 10 articles were selected, identified chronologically as E1 to E10. Figure 2 presents the studies selected with their authors, year of publication and title.

Study*	Author	Title	Year
E1	Vieira ABC *et.at.*	Otononeurological manifestations associated with antiretroviral therapy	2008
E2	Silva e cols.	Lipid profile, cardiovascular risk factors and metabolic syndrome in a group of patients with AIDS	2008
E3	Reis AN *et, al.*	Relationship between Psychopathological Symptoms, treatment adherence, and quality of life in HIV Infection and AIDS	2010
E4	Silva EFR *et al.*	Nutritional study, clinical and food pattern of people living with HIV/AIDS ambulatory assistance in São Paulo	2010
E5	Oliveira OCA de, Oliveira RA, Souza LR.	Impact of antiretroviral treatment on the occurrence of macrocytosis in patients with HIV/AIDS in the municipality of Maringa, State of Parana	2011
E6	Rego SRM *et al.*	Study of self-report and problematic alcohol use in a population of individuals with AIDS in use of ART	2011
E7	Monteiro e cols.	Calcium score in evaluation of atherosclerosis in patients with HIV/AIDS	2011
E8	Romancini JLH *et, al.*	Levels of physical activity and Metabolic Changes in people living with HIV/AIDS	2012
E9	Godoi ETAM *et al.*	Effect of antiretroviral therapy and viral load levels in the intima-media complex and the ankle-arm index in patients infected by HIV	2012
E10	Eira e cols.	Highly effective antiretroviral therapy for human immunodeficiency virus infection increases Aortic Stiffness	2012

Figure 2. Articles with the authors, titles and years in the period of 2006 - 2013. Teresina/PI, Brazil, 2013. Study* Identification of the study

The distribution of 10 selected items according to the year of publication was as follows: 02 (E1 and E2) article published in 2008, 02 (E3 and E4) in 2010, 03 (E5, E6 and E7) in 2011, 03 (E8, E9 and E10) in 2012. In relation to the authors, it is observed that an author has two publications (E2 and E4), but in different years.

In Figure 3 we present the analysis of studies about the type of the research, the source of publication and the country.

Study*	Type of the study	Source of Publication	Country
E1	Case control	Rev. Soc. Bras. Med. Trop.	Brazil
E2	Cross-sectional Study	Arq Bras Cardiol	Brazil
E3	Quantitative research	Psychology: Reflection and Critics	Brazil
E4	Cross-sectional Study	Rev. Bras Epidemiology	Brazil
E5	Quantitative research	Rev Soc. Bras. Med. Trop.	Brazil
E6	Case control	J Bras Psychiatry	Brazil
E7	Quantitative and qualitative research	Arq Bras Cardiol	Brazil
E8	Quantitative and qualitative research	Rev Bras Med. Sport	Brazil
E9	Prospective, observational, analytical, cross-sectional study.	J Vasc Bras	Brazil
E10	Cross-sectional Study	Arq Bras Cardiol	Brazil

Figure 3. Article on the type of study, source of publication and published country in the period 2006 to 2013. Teresina/PI, Brazil, 2013. Study* Identification of the study.

Concerning the approach the prevalence are studies Cross (E2, E4, E9 and E10), followed by the other quantitative studies (E3 and E5), quantitative and qualitative (E7 and E8) and case-control (E1 and E6). All publications have Brazil as the country of origin. Regarding the source of publication identified the Brazilian Archives of Cardiology as owner of most publications (E2, E7 and E10).

In Figure 4, what stand out most were evidenced in each survey, which are the side effects of antiretroviral medications that cause long-and short-term, relatively. Of the

10 studies analyzed in this review identified that the situation appears more are the side effects related to structural changes after use of HAART (E1, E7, E9 and E10), followed by metabolic effects (E2, E4, E5 and E8) and psychopathology effects (E3, E6).

Study*	Implications of the use of ART for patient safety who lives with HIV/AIDS
E1	Patients treated with antiretroviral therapy when compared to a group of patients who were not treated with the therapy, showed hearing losses that were not related to Earwax stopper or exposure to occupational noise common cause in the group treated with antiretroviral drugs.
E2	Total cholesterol and HDL, triglyceride levels were higher in patients with ART when compared to a non-group treated with HAART. Not identified an increased cardiovascular risk in patients who make use of ART. Metabolic Syndrome similar to two groups.
E3	The study showed that people living with HIV/AIDS who have difficulty adhering to antiretroviral treatment present more frequently psychopathological symptoms (being the most frequent: stress, anxiety and depression), also demonstrated that patients who showed greater capacity of accession have better quality of life.
E4	The average levels of total cholesterol, triglycerides and glucose were higher in the group of people who make use of ART. Most of the participants of the study, with and without ART were eutrophic. The waist-hip ratio was higher in men in ART than among those without ART. The group in ART presented average scores indicative of greater food consumption "not protectors for CVD (Cardiovascular Disease).
E5	HIV infection can present wide range of hematologic changes. The study looked at patients according to the type of anti-retroviral treatment and which were highlighted that hematologic analyses, that even after in use of ART there was no significant difference in the distribution of folic acid in the body of individuals, since the distribution of vitamin B12 showed significant difference between the groups (one in use of ART and another without use of ART).
E6	Strong association between adherence to HAART failure measured through self-report and problematic alcohol consumption was assessed by the AUDIT (Alcohol Use Disorders Identification Test). However, for not being a prospective study, you can't say that this is a casual Association. Showed that in the presence of a self-report of non-adherence, the probability of being in front of an individual with harmful use of alcohol is quite large.
E7	Low prevalence of atherosclerosis in patients with HIV/AIDS on antiretroviral therapy for at least two years (similar to the general population). Among the risk factors assessed only the age, smoking and hypercholesterolemia were associated with the development of atherosclerosis. The short duration of therapy and the age of the study population may have influenced the results.
E8	Study compared groups of people living with HIV (a group using ART and others not) who practiced some physical activity to a group of people living with HIV that did not practice any physical activity and showed changes in HDL cholesterol, in both groups, but these changes they caused more damage to the body of those individuals who did not practice any kind of physical activity.
E9	Study with a group of patients who made use of ART has demonstrated that the anklebrachial Index (ITB) was raised in a single patient and not showed thickening of the intima-media complex in any individual. There was no significant Association of intima-media complex measurement of the right common carotid with none of the analyzed variables. The young individuals, under use of ART for five years or more, did not show thickening of the CMI (intima-media complex) or modification of the ITB. There was no difference in the thickening of the CMI associated with the ARV scheme used or level of CV (viral load), except for greater tendency of the schemas containing ITRNN (reverse transcriptase inhibitors, non-nucleoside/nucleotide analogues) and IP (protease inhibitors).
E10	Increased arterial stiffness in patients infected by HIV is associated more with the use of ART than with his own HIV infection, especially among women.

Figure 4. Description about the implications of the use of ART for patient safety that lives with HIV/AIDS, according to studies published in the period from 2006 to 2013. Teresina/PI, Brazil, 2013. Study* Identification of the study

With the progress of research, one can see how much antiretroviral therapy has advanced in terms of effectiveness, since its inception. Along with this breakthrough we find the complaints arising from the same treatment, because in addition to prevent the virus from multiplying this therapy brings with it great number of side effects in the short and long term, depending on the time at which the drugs are being used. Thus, in accordance with articles adopted for this research, the effects we found distributed according to adverse events that cause and/or system that affect the individual who is using it, independent of the antiretroviral regimen followed.

Adverse events are changes or diseases that may occur in the long term resulting from the inflammatory action of HIV in the body and drug toxicity, added to individual and genetic factors, age, habits and lifestyles. Over the last decade it has been observed, especially, the appearance of lipodystrophy, cardiovascular disease (CVD) and metabolic, bone and renal disorders. In this way, we will continue this discussion initially talking about the metabolic changes that an individual may have to make use of antiretroviral therapy.[11]

They are included in these metabolic changes abnormalities such as hyperlipidemia, insulin resistance, lipodystrophy (changes of fat redistribution), as well as some hematological disorders.

Considering the above effects, the stand-E8 Studies, E6 and E7, that throughout their research showed through different methods one of the most common metabolic changes that may occur with patients using ART, which is the increased levels Total cholesterol, HDL-cholesterol and triglycerides.[12-4]

Another metabolic change that was highlighted as an adverse event of ART in the adopted articles comes from the study E5, where the authors described in the research a hematological event arising from the use of ART hitherto little documented in the literature, they are the distribution of folic acid and vitamin client B 12 in the body, which according to their research, the only component that distribution of difference according to the type of antiretroviral therapy used was vitamin B12.[15]

It is noteworthy that, despite the development of research and few publications with regard to this change, it cannot confirm that this type of change occurs for all users of ART. Significantly, it is necessary to loosen more research into this area so that we can achieve greater security and provide greater support for the person living with HIV/AIDS.

In addition to these changes, there are two authors mention the joining of factors arising from the use of antiretroviral therapy for the development of concomitant diseases. According to the study E4, lipid rates increase and contribute to the onset of cardiovascular diseases.[16] Another study which is against to the study cited above claims is Study E10, which is more specific and claiming the use of antiretroviral therapy proposes increased arterial stiffness.[17]

Study E9 also fits the structural changes issues facing cardiovascular disease; it seeks to identify the prevalence of atherosclerosis because of structural changes related to classic factors of the disease and the specific HIV-infected (disease duration, time treatment, and type of treatment, type of antiretroviral therapy used, CD4 and viral load). Concluding that the use of ART did not interfere indicators for atherosclerosis.[18]

The study E7 affirms the contrary, showing that people who use antiretroviral drugs do not exhibit, after tests, the presence of cardiovascular diseases. But it is important noting that there has to be crucial to the distortion of research, treatment time employee individuals. The same justification that because of the short duration of therapy and the age of the population studied the results may have been influenced.[14]

Continuing with the changes resulting from the use of ART, another group of abnormalities are the otononeurological cited in the study E1, they are characterized by the appearance of tinnitus, hearing loss and dizziness. In his study, the author tries to compare the appearance of the symptoms mentioned between people who do and do not make use of antiretrovirals, showing that, according to the symptoms presented by the groups, the patients taking ART have hearing loss unrelated to common factors, such as cerumen or occupational noise exposure.[19]

In psychopathological issues highlight the studies E6 and E3 mentioning patients with pictures of stress, anxiety, depression and alcoholism, these barriers to adherence and consequently deficit in the safety of the patient due to discontinuation of treatment or resistance to antiretrovirals. Moreover, alcohol can harm the liver and increase the side effects of some anti-retroviral drugs. The studies also showed that patients who had higher adhesion capacity have better quality of life.[13, 4]

On the implications of the use of ART for patient safety living with HIV/AIDS highlighted in this review we highlight in Figure 5 which analyzed articles presented as alternatives to ensure the safety or minimize risks to these patients.

Study*	Alternatives to ensure the safety or minimize risks to patients
E1	Did not present.
E2	Studies that assess the impact of therapeutic intervention in patients who are alcohol abuse and are, at the same time, on treatment with HAART should be performed in order to stimulate the psychiatric consultation in Infectology services.
E3	The proper use of antiretroviral medication (and membership) as a protective factor for a health and quality of life of the population with HIV infection and AIDS.
E4	Did not present.
E5	Did not present.
E6	Is pointed to the need for health interventions targeting the people living with HIV/AIDS, for the control of the factors associated with these diseases before the final outcome.
E7	Did not present.
E8	Practice of physical activity improves the level of HDL-cholesterol in patients living with HIV/AIDS.
E9	Did not present.
E10	Did not present.

Figure 5. Summary of alternatives to ensure the safety or minimize risks to these patients, according to articles published in the period from 2006 to 2013. Teresina/PI, Brazil, 2013. Study* Identification of the study.

As we can see in Figure 5, only the studies E2, E3, E6, E8 presented alternatives that minimized risk factors for patient safety living with HIV/AIDS and make use of ART.

The E8 study says that physical activity influences the quality of life of patients, reducing lipid rates of people living with HIV/AIDS.[12] The benefits of exercise are well documented, because they promote the reduction in risk of death cardiovascular diseases; reduction in risk of developing diabetes, hypertension and colon cancer and breast cancer; improving the mental health level; bones and healthier articulation; better body functioning and preservation of the independence of the elderly; control of body weight correlates with favorable reducing smoking and alcohol and drug abuse. And the same applied to people living with HIV/AIDS.[20]

Research shows that patients with a physically active lifestyle develop a protective effect against lipodystrophy associated with antiretroviral therapy, and avoid lipohypertrophy and prevent cardiovascular complications.[21]

As the study E3, adherence to ART is shown as a great protective factor the health of patients living with HIV/AIDS, besides being crucial to a better quality of life for these people. As exemplified by this study, presenting depressed individuals due to illness and did not adhere to treatment. But the group that made the proper use of medications could have a life without many losses.[4] And according to the study E9, the need for targeting health interventions for people living with HIV/AIDS to control the factors associated with these diseases before the final outcome.[18]

We also saw the danger of alcohol association with treatment (Study E7), having to be made a follow-up that promotes the reduction of evasion of treatment and possible development of an alcoholic individual. Indicating how consultations solution/accompaniments with psychiatrists parallel to infectologists.[14]

CONCLUSION

The use of ART is an important factor to consider when evaluating patient safety, especially for being a mandatory and chronicity of treatment characteristics. They need to disclose the alternatives to ensure compliance, control and continuity of antiretroviral treatment, but one needs the involvement of health professionals who deal with the problem.

The results suggest that interdisciplinary continuing education and support programs for health professionals can assist in activities to reduce the risks to health of people living with HIV/AIDS and make use of ART.

Information about side effects evidenced by the use of ART, the risk of treatment dropout and the benefits of it can contribute to patient safety and adherence to treatment and improved quality of life for people living with HIV/AIDS.

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Corresponding Address

Maria do Carmo Santos Ferreira
Rua Alcides Freitas, 1745
Bairro Mafúa
CEP 64003-150 – Teresina (PI), Brazil