




# MARKED ON THE SKIN: DERMATOLOGICAL LESIONS IN HIV/AIDS PATIENTS: AN INTEGRATIVE REVIEW

**MARCADOS NA PELE: LESÕES DERMATOLÓGICAS EM PACIENTES HIV/AIDS: UMA REVISÃO INTEGRATIVA**

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## ABSTRACT

**Introduction:** Knowledge of professional practice is relevant to provide studies concerning the integral assistance to persons living with HIV/AIDS. This knowledge aims at a differential care that meet the needs of each patient and confidence in procedures, elucidating doubts on the drug treatment and appropriate care of each type of skin lesion that may arise during their lives, allowing greater awareness of their health, mainly concerning the stigmatization of the scars marked on their skin. **Objective:** To know the skin lesions described in scientific articles affecting the HIV/AIDS patients. **Methods:** Integrative review with research into MEDLINE, *Biblioteca Virtual em Saúde* and Scientific Electronic Library Online databases' articles between 2010 and 2016. **Results:** Nine articles were selected, and three categories emerged from the Thematic Content Analysis: dermatological lesions in HIV/AIDS patients; benefits of antiretroviral therapy and possible dermatological reactions; dermatological lesions care. **Conclusion:** The main dermatological lesions in HIV/AIDS patients described in the scientific articles were the following: pruritic papular eruptions; Kaposi's Sarcoma lesions; mucocutaneous eruptions and ulcerations; Molluscum Contagiosum lesions; Psoriasis lesions; rashes due to drug interactions; maculopapular eruptions, urticarias and hyperpigmentation of cutaneous attachments as adverse reactions to antiretrovirals; and erythematous papules.

**Keywords:** skin manifestations; HIV; nursing care.

## RESUMO

**Introdução:** A produção do conhecimento relacionada à prática profissional torna-se relevante para a elaboração de estudos direcionados à assistência integral à pessoa vivendo com HIV/AIDS, visando a um cuidado diferenciado para responder às necessidades de cada pessoa e segurança nos procedimentos, orientando os pacientes quanto a suas dúvidas sobre o tratamento medicamentoso e quais os cuidados para cada tipo de lesão de pele que pode surgir ao longo de sua vida, possibilitando maior consciência de sua saúde, no que concerne a estigmatização das próprias cicatrizes marcadas na pele pelas lesões. **Objetivo:** Conhecer as lesões dermatológicas que acometem os pacientes HIV/AIDS descritas nos artigos científicos. **Métodos:** Revisão integrativa com busca na MEDLINE, na Biblioteca Virtual em Saúde e na *Scientific Electronic Library Online*, selecionando artigos entre 2010 e 2016. **Resultados:** Nove artigos foram incluídos, e na Análise de Conteúdo Temática emergiram três categorias: lesões dermatológicas nos pacientes HIV/AIDS; benefícios da terapia antirretroviral e possíveis reações dermatológicas; cuidado às lesões dermatológicas. **Conclusão:** As principais lesões dermatológicas em pacientes HIV/AIDS descritas nos artigos científicos foram: erupções papulares pruriginosas; lesões de Sarcoma de Kaposi; erupções e ulcerações mucocutâneas; lesões de Molusco Contagioso; lesões de psoríase; erupções cutâneas por interações medicamentosas; erupções maculopapulares, urticárias e hiperpigmentação de anexos cutâneos como reações adversas aos antirretrovirais; e pápulas eritematosas.

**Palavras-chave:** manifestações cutâneas; HIV; cuidados de enfermagem.

## INTRODUCTION

The Acquired Immunodeficiency Syndrome (AIDS) is a disease of the immune system caused by the Human Immunodeficiency Virus (HIV), considered a pandemic and associated with social vulnerability, including safe access to health services and actions. The abbreviations SIDA and VIH are used in Portuguese-speaking countries, but in Brazil the English terms AIDS and HIV were made popular<sup>(1)</sup>.

The HIV virus is acquired through contact with mucous membranes, sperm, vaginal fluid, blood during unprotected intercourse with the virus carrier, contaminated blood transfusion, and mother-to-child transmission during pregnancy or breastfeeding. The disease is still involved in stigma, associated with misinformation about ways of contagion, moral judgments and prejudice<sup>(2)</sup>.

In the case of mothers living with HIV, a way to prevent transmission of the virus to newborns is the immediate breastfeeding interruption; the family shall receive the necessary support from

health professionals and the necessary means provided by the State to obtain artificial feeding with appropriate formulas up to the second year of the child's life. Human milk processed and distributed by the milk banks systems are still insufficient to supply this demand, as it is primarily destined to children at risk and hospitalized in intensive care units<sup>(2)</sup>.

In Brazil, the first AIDS cases were confirmed in 1982, in the State of São Paulo, and since the beginning of its epidemic until June 2015, 798,366 cases were registered<sup>(3)</sup>.

AIDS is a contagious disease that debilitates the immune system and can reach the skin, whether as an aggravating factor of pre-existing diseases, facilitating the emergence of opportunistic infections, or even causing characteristic skin lesions<sup>(4)</sup>. In this case, it is visible the importance of the ability to provide care for people with skin lesions in the various services that are part of the health network available to the general population, as well as the development of the capacity to care for this condition in health professionals training.

According to the Ministry of Health Epidemiological Bulletin, from 2007 to June 2017, 194,217 cases of HIV infection in Brazil were reported to the *Sistema de Informação de Agravos de Notificação*—SINAN (Information and Notification System), 96,439 of which

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(49.7%) in the Southeast, 40,275 (20.7%) in the South, 30,297 (15.6%) in the Northeast, 12,931 (6.7%) in the Midwest, and 14,275 (7.4%) in the North. In 2016, the Federation units showing the highest rates of AIDS detection were the states of Rio Grande do Sul and Roraima, with 31.8 and 33.4 cases per 100 thousand inhabitants, respectively. The capital of Rio Grande do Sul, Porto Alegre, reached 65.9 cases per 100,000 inhabitants, which is twice the state's rate<sup>(3)</sup>. The notifications indicate both the transmission of the virus and the diagnosis and registration, allowing the recognition of the problem's magnitude and the action planning to its approach.

In view of the presented facts, the search for the diagnosis quickness and registry of positive results are the goals in AIDS control policies and fighting. Since 2011, the Municipal Health Department of Porto Alegre implemented the quick test and notification of HIV cases, and this practice came about in Brazil in 2014, according to the Ministry of Health's ordinance 77 of 2012, which determined the rapid tests in primary care for the detection of HIV and syphilis<sup>(5)</sup>. The Administrative Rule 29 of 2013 approved the creation of a technical manual to increase the access to the HIV infection diagnosis in the *Sistema Único de Saúde—SUS*<sup>(6)</sup> (Unified Health System), published in 2016, regulating the diagnosis practice<sup>(7)</sup>.

Significant and gradual changes have occurred by multiplying the availability of rapid blood tests and blood samples for the detection of HIV diagnosis in the primary health care network units and at the *Centros de Testagem e Aconselhamento - CTA* (Centers for Testing and Counseling). The whole health system is involved in a more articulated way, providing elements to develop more effective policies in order to contain the disease's progress, guarantee efficient treatment and improve life quality of those affected by it<sup>(8)</sup>. In 2017 and 2018, the Ministry of Health offered workshops on the strategies to increase the use and distribution of HIV, syphilis and hepatitis B and C rapid tests in Brazil to strengthen professionals' qualification<sup>(9)</sup>.

These actions have sought to speed up the diagnosis and start drug therapies early on, thus impacting on the reduction of the virus transmission, as well as maintaining patients' immunity, decreasing the co-infection with other opportunistic diseases<sup>(8)</sup>.

AIDS brought up fear and panic in the social context, damaging interpersonal relationships caused by discrimination. A disease filled with prejudices and intolerance that affect the welfare of people living with HIV or are sick with AIDS. Good practice in caring for people with this disease includes not only surveillance, diagnosis and treatment, but also the discrimination and prejudice approach to face the stigma of the disease.

Erving Goffman<sup>(10)</sup> was the pioneer of thinking the stigma concept in a social perspective, standing out that society establishes a way of categorizing individuals and the total number of attributes considered as "common and natural" for people. It is worth noting that it is not just an individual attribute, but rather the consequence of a social relationship originated in the interaction between individuals, i.e., the social stigma is not related to a specific characteristic or a person; it is found in a language relationship, in perspectives created by the contingencies of social life, in which people are treated differently, based on pre-established concepts<sup>(10)</sup>. Regarding HIV/AIDS, the social stigma is related to the way the virus has become known in the society, related to injection drugs use and promiscuous sexual behavior without protection. It is important to note that

some of that stigma was fostered by the knowledge available in the health services, since the chances of "risk behavior" and "risk groups" were early associated with illness and remained in the social imaginary, even when the prevalence of the disease was reaching other social segments.

Since the earliest reports of HIV infection, dermatological manifestations are considered both a source of the disease stigma and a challenge to diagnosis and treatment. Some systemic opportunistic infections, or even neoplasms, originate primarily in the skin, and their early identification as HIV-associated dermatitis is extremely important<sup>(11)</sup>.

The onset of antiretroviral therapy (HAART) in patients with low CD4 cells count is a primary factor for the occurrence of the inflammatory Syndrome of Immune Reconstitution (SIR). It is a clinical diagnosis and should be considered when inflammatory signs or symptoms occur between 4 to 8 weeks after the beginning of the therapy, in the re-introduction of an interrupted scheme or in the alteration to a more effective medicinal scheme after therapeutic failure<sup>(12)</sup>.

With the aid of HAART, the body reestablishes the CD4 count and promotes the increase of the immune response, decreasing the viral load. The imbalance between the levels of CD4 and viral load possibly triggers SIR's symptomatic reactions, which manifest as aggravation of the HIV/AIDS patient due to preexisting infectious diseases, commonly said opportunistic, often auto limited or even assuming serious forms, also described as inflammatory reactions related to fungal, viral and bacterial infections, autoimmune phenomena and neoplasms. The prevention of complications associated with SIR involves the identification and early handling of the symptoms of these possible opportunistic infections<sup>(12)</sup>.

## OBJECTIVE

To know the dermatological lesions that affect HIV/AIDS patients described in scientific articles.

## METHODS

The integrative revision in databases is the methodological approach of this study, embracing articles on dermatological lesions affecting HIV/AIDS patients. The integrative review is a method of careful and systematic research, with the purpose of providing wide information on certain knowledge, seeking the published scientific literature and synthesizing the results obtained in the studies with the purpose of critically evaluate knowledge and subsequently incorporate it into care practice according to reality<sup>(13)</sup>.

The construction of this integrative revision involved the elaboration of the research question, the literature research and the criteria definition for inclusion and exclusion of studies, the definition of the information to be extracted and categorization of the studies, the evaluation of the included studies, the interpretation of the results and the presentation of the review and knowledge synthesis<sup>(14)</sup>.

The formulation of the guiding question was defined by the following question: What dermatological lesions in the HIV/AIDS patients were described in the scientific articles?

The data collection took place in June of 2016 with the research at MEDLINE through PubMed, *Biblioteca Virtual em Saúde—BVS* (Virtual Library on Health), and the digital library Scientific Electronic Library Online (SciELO), using the *Descritores em Ciências da Saúde—DeCS* (Descriptors in Health Sciences) “HIV”, “Nursing care” and “skin manifestations”, which are dermatological lesions synonymous.

Initially, the research for the articles was conducted through the intersection of three descriptors, “HIV”, “Cuidados de enfermagem” and “Manifestações cutâneas” using the Boolean operator AND. In MEDLINE, the search descriptors were “HIV”, “Nursing care” and “Skin manifestations”.

The inclusion criteria were defined as follows: published articles that met the objective needs and the guiding question in the studies published between the period 2010–2016, in English, Portuguese and Spanish languages. Exclusion criteria were publications prior to 2010. Duplicate studies in more than one database were included only once.

In the Thematic Content Analysis<sup>(15)</sup> of the articles, three relevant categories emerged: “dermatological lesions in HIV/AIDS patients”; “benefits of antiretroviral therapy and possible dermatological reactions”; and “ dermatological lesions care.”

As for the ethical aspects, the bibliographical research respected the intellectual authorship of the publications consulted, taking into consideration copyright legislation<sup>(16)</sup> and knowledge production good practices.

## RESULTS

No publications crossing the three descriptors were found. These search crossed descriptors “skin manifestations” AND “nursing care” afterwards. Subsequently, the search crossed descriptors “cutaneous manifestations” AND “HIV”, totaling 130 publications.

After the inclusion and exclusion criteria, 23 articles were indicated for complete text reading, 14 articles not describing

dermatological lesions in HIV/AIDS patients were excluded, and 9 articles were selected for analysis and discussion, numbered according to research order.

The systematization of the results on dermatological lesions in HIV/AIDS patients showed which lesions affect HIV/AIDS patients, the methodological approach of the studies and the year of publication, as described in **Table 1**, and **Table 2** presents the contributions of studies on dermatological lesions in HIV / AIDS patients.

Of the 9 selected articles, seven were published in English, one in Portuguese and one in Spanish. The studies were conducted in the following countries: India<sup>(17,21)</sup>, United States<sup>(18,20)</sup>, Tanzania, Malawi, Ethiopia, Uganda, Kenya, Botswana, Cameroon, Swaziland, Ghana and Sierra Leone<sup>(19)</sup>, Brazil<sup>(22,23,25)</sup> and Argentina<sup>(24)</sup> according to the data collection and the selection of the articles, in the period studied from 2010 to 2016. Eight articles<sup>(17-24)</sup> addressed skin lesions in HIV/AIDS patients and one article<sup>(25)</sup> validated an instrument to evaluate patients with skin lesions.

The main types of skin lesions discussed in the studies are the following: pruritic papular eruptions; Kaposi’s sarcoma lesions; mucocutaneous eruptions and ulcerations; Molluscum Contagiosum lesions; psoriasis lesions; rashes due to drug interactions; maculopapular eruptions, urticarias and hyperpigmentation of cutaneous attachments as adverse reactions to antiretrovirals; erythematous papules.

## DERMATOLOGICAL LESIONS IN HIV/AIDS PATIENTS

Dermatological manifestations are first signs of infection in HIV/AIDS patients<sup>(19,21,24)</sup>. These manifestations are also indicators of the disease diagnosis and efficacy of the treatment, able to represent a mirror of the immunosuppression degree of the patients affected by these lesions<sup>(17,21)</sup>.

Many dermatological lesions affecting HIV/AIDS patients have different characteristics as to their presentation, and may be minimal

**Table 1** – Dermatological lesions affecting HIV/AIDS patients, studies methodological approach and year of publication. Porto Alegre (RS), Brasil, 2016.

| Studies           | Dermatological lesions described   | Methodological Approach        | Year of Publication |
|-------------------|--|--------------------------------|---------------------|
| 1 <sup>(17)</sup> | Pruritic papular eruptions; Molluscum Contagiosum lesions; eosinophilic folliculitis; leprosy lesions; psoriasis lesions; rash / drug interaction; Nodular lesions of non-Hodgkin’s lymphoma.  | Prospective quantitative study | 2014                |
| 2 <sup>(18)</sup> | Kaposi’s sarcoma lesions.  | Case study                     | 2011                |
| 3 <sup>(19)</sup> | Ectoparasite lesions; urticarias papulosas; Kaposi’s sarcoma lesions; prurigo.   | Literature revision            | 2011                |
| 4 <sup>(20)</sup> | Ulcers and mucocutaneous eruptions; Maculopapular eruptions, urticarias and hyperpigmentation of cutaneous appendages as adverse reactions to antiretrovirals.   | Literature revision            | 2010                |
| 5 <sup>(21)</sup> | Dermatoses by viruses, bacteria and fungi; papular lesions; oral ulcers; exanthema; erythematous papules; friable nodules; abscess; perianal ulcerations; erythematous vesicular eruptions; pruritic papular eruptions; seborrheic dermatitis; atopic dermatitis; Molluscum Contagiosum lesions; psoriasis lesions; rash/drug interaction; Maculopapular eruptions, urticaria, hyperpigmentation of cutaneous attachments as adverse reactions to antiretrovirals; Kaposi’s sarcoma lesions. | Literature revision            | 2010                |
| 6 <sup>(22)</sup> | Skin rashes; skin ulceration; papulonodular tumor; Hemorrhagic lesions; angiomatous papules.   | Case study                     | 2011                |
| 7 <sup>(23)</sup> | Lymphangiectasis Kaposi sarcoma lesions; tuberous lesions.   | Case study                     | 2013                |
| 8 <sup>(24)</sup> | Hypochromic lesions; cutaneous lupus lesions; Idiopathic Guttate Hypomelanosis.  | Case study                     | 2012                |
| 9 <sup>(25)</sup> | Skin lesions.  | Quantitative-qualitative study | 2013                |

when the immune system is immunocompetent with its full immunological functions, but when the decline of the immune function occurs due to a deficit of the CD4 cells, the lesions become more frequent, severe and resistant to conventional therapy<sup>(21)</sup>.

Dermatological manifestations are striking and frequent characteristics that affect people who live with HIV/AIDS, and the skin is an indicator of the severity of the disease. Skin lesions are also a visible “mark” in the social relationships that patients establish with themselves and with their surroundings. In the lesions’ care, the importance of diagnosis and adequate treatment is recommended to avoid the resistance of microorganisms, which may compromise healing<sup>(26)</sup>. There are various dermatological manifestations compiled in the typology: infectious origin lesions of diverse etiology; inflammatory lesions sometimes associated with antiretroviral therapy; and neoplastic lesions<sup>(17-24)</sup>.

Lesions of infectious origin are of various etiologies, and may be bacterial, viral or fungal, often accompanied by diagnostic difficulties, and their manifestations may be represented by vesicles, crusts, raised papules and maculopapular rashes<sup>(17,19-22)</sup>. The inflammatory lesions associated with HAART are dermatological manifestations related to the possible adverse reactions of the antiretrovirals and may be associated with SIR due to imbalance of the immune response. The most frequent dermatoses are pruritic papular eruptions, maculopapular eruptions, urticarias and hyperpigmentation of cutaneous appendages<sup>(17,19,20)</sup>. Neoplastic lesions can be consequences of a primary cancer or metastases in the skin, and may be represented by papules, erythematous nodules, hyperpigmented and papulonodular ulcerated eruptions<sup>(17-19,21-23)</sup>.

The studied articles showed that at some point in the course of the AIDS disease, 90% of HIV patients are diagnosed with some

**Table 2** – Contributions of studies on dermatological lesions in HIV/AIDS patients. Porto Alegre (RS), Brasil, 2016.

| Studies           | Contributions of studies on dermatological lesions in HIV / AIDS patients   |
|-------------------|---|
| 1 <sup>(17)</sup> | The study demonstrated a relationship between CD4 count and skin lesions, and the lower the CD4 the greater the occurrence of lesions. Most of the lesions were associated with stages 3 and 4 of HIV infection, taking into consideration that skin manifestations are considered clinical indicators to predict the immune status of HIV patients in countries with no resources and infrastructure in the health care system.  |
| 2 <sup>(18)</sup> | Multiple Kaposi’s sarcoma skin lesions were pointed out in male HIV/AIDS patients; however, other manifestations of the sarcoma were also found, pleuropulmonary involvement occurring in approximately 20 to 25% of HIV patients in advanced stages of AIDS. The manifestations found were flat, red and purple submucosae, whose aspect is similar to hemorrhages. In this case, lesions were present in the parietal pleura, sparing the visceral pleura, an unusual presentation according to postmortem studies, which point to lesions of most visceral pleuropulmonary sarcoma. A bilateral pleural effusion was also observed, and pleural effusion can occur without skin lesions manifestations of the sarcoma in 15% of HIV/AIDS patients.   |
| 3 <sup>(19)</sup> | The study reports the occurrence of numerous infections and infestations that affect the skin of patients in Africa. The increase of skin lesions occurred due to the HIV/AIDS epidemic, complicating diagnosis and treatment of these lesions. 90% of HIV/AIDS individuals are diagnosed with some kind of cutaneous manifestation at some point during their lifetime. It was also evidenced an average increase of 40% to 60% of HIV/AIDS patients hospitalizations in health services for injury treatment in various regions of South Africa. Based on the information reported, Africa is committed to the training of health professionals, prioritizing primary care and specialized levels in the identification and treatment of skin manifestations with a focus on prevention, seeking suitable conduct to minimize treatment resistance due to unnecessary prescriptions.                          |
| 4 <sup>(20)</sup> | The study introduces us to antiretroviral therapy, proven beneficial to HIV/AIDS patients, although it mentions the emergence of possible skin reactions caused by this therapy. It reports the importance of the supervision of a dermatologist doctor in assisting and monitoring these patients to identify the effects early, favoring the reduction of failures in the treatment and/or discontinuation of drug adhesion. With the proper diagnosis, in many cases it is not necessary to interrupt or change the drug scheme, as these are auto limited skin manifestations and stabilize naturally.  |
| 5 <sup>(21)</sup> | The study points out that children are increasingly affected by HIV infection. Given that HIV/AIDS children have greater severity in skin manifestation often resistant to treatment with high recurrence rate. The prevalence of skin manifestations in HIV patients at some point during the course of the disease is close to 90%. These demonstrations may also act as one of the first indicators of the prognosis of AIDS related to people with low CD4 rates in countries with few economic resources, where the availability of CD4 count is limited. Evaluating incidence rates and prevalence helps to predict the severity of the disease in these patients. The Immune Reconstitution Syndrome is another manifestation observed in children; its incidence is not yet well defined, however it is estimated that it is 10% to 20% of HIV/AIDS children who started with antiretroviral therapies. |
| 6 <sup>(22)</sup> | Bacillary angiomatosis, an infectious disease that most commonly affects HIV/AIDS patients when compared to other immunodeficiencies, often affects patients in the more advanced stages of AIDS, and those with a CD4 count below 200 cells/mm <sup>3</sup> . However, the study addressed the case of a patient with a CD4 count of 440 cells/mm <sup>3</sup> , with symptoms of bacillary angiomatosis, with poor life/hygiene conditions. In HIV/AIDS patients, bacillary angiomatosis always needs to be considered in the diagnosis of skin manifestations and fever.   |
| 7 <sup>(23)</sup> | Kaposi’s sarcoma lymphadenomatous variants have been associated with AIDS. These variants include forms associated with lymphatic ectasia, with the proliferation of intra and peritumoral lymphatic vessels, in this case called Kaposilin-phangiectatic sarcoma. The study reported the case of a male patient, but there was no visceral involvement. In HIV / AIDS patients, the diagnosis of Kaposi’s sarcoma is an indication for the beginning of antiretroviral therapies, with a significant decrease in incidence and morbidity and mortality.  |
| 8 <sup>(24)</sup> | The study shows the case of a female patient in use of antiretroviral therapy with dermatitis associated with the Primary Anodermia (PA) in the upper and lower limbs. The literature points out that these lesions are usually located in the torso, neck and arms, asymptomatic or slightly pruritic. The patient presented mitochondrial toxicity, one of the main adverse reactions of the antiretroviral, needing to suspend the therapy and to reevaluate the therapeutic scheme. HIV and antiphospholipid antibodies shall be tested for all patients with skin manifestations of PA, and long-term follow-up is necessary as it is considered a sign of autoimmune disease.   |
| 9 <sup>(25)</sup> | Validation of a protocol for the planning of integral nursing care of skin lesions through an individual-centered approach. The instrument contributes to the quality and systematization of nursing care to the patient.   |

dermatological manifestation, which is the main reason for the demand for care in health services<sup>(19,21)</sup>.

In Africa, the major concern is the increase of dermatological lesions in HIV/AIDS patients and the shortage of dermatologists or professionals specialized in skin lesions, causing gaps in care, and these lesions are often not treated<sup>(19)</sup>. In different countries with large social inequalities, the quality of health services is affected, indirectly interfering in the injuries' care. In countries lacking infrastructure, professionals and material resources, the access to health services becomes difficult for the population. Even in countries where this access is easier, the quality of care offered in the first contact with health services is fundamental to the follow-up and to the response to people's demands.

Considering HIV/AIDS patients, health professionals need to provide monitoring, evaluate the type of injury and take into account the drug therapy used to prevent allergic reactions to the drugs. The patients' care is to be put into practice within a specific treatment plan to provide the relief of signs and symptoms, as well as to identify potential drug interactions and the evaluation of the prescribed treatment. In this context, the nurse can perform the Nursing Process, the addition to the bandage, with a view to integral and interdisciplinary care through an expanded look at the reality in the decision making within therapeutic conduct.

The sensitivity to the needs of the patient, the contact with practice, the ability to perform procedures through available technologies, the capacity to identify the resources in other services and the constant analysis of the work processes carried out are fundamental dimensions of care management, requiring permanent education on services and on local health system as well<sup>(27)</sup>.

## Benefits of antiretroviral therapy and possible dermatological reactions

Antiretroviral medications arose in the 1980s to prevent the multiplication of the HIV virus in the body. Although it does not kill the virus, it helps to prevent the weakening of the immune system, making its use fundamental to increase expectancy and quality of life of HIV/AIDS patients. In Brazil, the distribution of these drugs is free for all patients registered in the Sistema de *Controle Logístico de Medicamentos*—SICLOM (Medications Logistics Control System)<sup>(12)</sup>.

In addition to the favorable clinical impact reducing the morbidity of HIV/AIDS patients, the early antiretroviral therapy is also an important tool to reduce HIV transmission<sup>(20,23)</sup>. However, adherence to drug therapy should be considered to avoid the virus multiplication in the body and the possible therapeutic failures that contribute to the emergence of new complications<sup>(22,23)</sup>.

People infected with HIV may have some cutaneous involvement throughout their lives. However, after HAART's introduction, it is possible to observe changes in the presentation of the dermatoses related to the virus, with a decrease in the frequency of opportunistic diseases. HAART contributes to the treatment, but may cause SIR to appear as allergic skin reactions resulting from the beginning of treatment<sup>(11)</sup>.

The skin is the organ with the greatest involvement in the possible adverse reactions to antiretroviral drugs, as it presents opportunistic infections at the beginning of the therapy, possible complications

evidenced, such as SIR, and other dermatological manifestations. Therefore, it is recommended that the patients follow a rigorous follow-up and be monitored every three to six months<sup>(17,21,22)</sup>.

In most situations, the monitoring of HIV/AIDS patients needs a differentiated approach in the health network, including the reception of the patient with the strengthening of the bond with the health professional, advocating adherence to the therapeutic method<sup>(28)</sup>.

Antiretrovirals are divided into classes, as follows: Nucleoside Reverse Transcriptase Inhibitors; Non-Nucleoside Reverse Transcriptase Inhibitors; Protease Inhibitors; Inhibitors of fusion; and Integrase Inhibitors. Each class has its own adverse reactions, although some manifestations may be caused by the combination of more than one antiretroviral<sup>(12)</sup>.

There are three most commonly used antiretrovirals classes in HIV / AIDS patients: Nucleoside Reverse Transcriptase Inhibitors, Reverse Transcriptase Non-Nucleoside Inhibitors and Protease Inhibitors and their possible dermatological reactions<sup>(20)</sup>.

Among the Reverse Transcriptase Nucleoside Inhibitors and Reverse Transcriptase Non-Nucleoside Inhibitors classes, the known reaction was the mitochondrial toxicity, which resulted in systemic adverse reactions that fit the more severe effects characterized by lipodystrophy, and the use of the medication should be suspended and a new therapeutic planning reevaluated<sup>(19,23)</sup>. Other dermatological reactions were nails, palms and soles hyperpigmentation, urticarias, maculopapular eruptions, mucocutaneous ulcerations and the appearance of morbilliform exanthema associated with hypersensitivity syndrome, which recommends the immediate suspension of the medication<sup>(20)</sup>.

In relation to the Protease Inhibitors class, few dermatological manifestations were present, and the lesions did not require treatment interruption. However, in cases of more severe urticaria eruptions, only desensitization was carried out, and pause of treatment was not necessary. Regarding dermatological reactions, it is possible to mention the erythematous multiform eruptions, rash and pruritus, and these reactions are self-limiting. Despite the reduction of dermatological reactions, there is still a need for a careful evaluation in order to avoid drug interactions that may decrease the medication effect<sup>(20)</sup>.

Knowing the possible dermatological reactions related to the use of antiretroviral therapy, the health professional is able to make early decisions, improving the patient's life quality and welfare. In this sense, the next focus of the discussion is linked to the care as a necessary tool in the monitoring of HIV/AIDS patients affected by dermatological lesions.

## Dermatological lesions care

Knowing that HIV / AIDS patients' dermatological lesions usually manifest atypically when compared to those of immunocompetent patients<sup>(21)</sup>, the health professional needs to plan actions early after a previous diagnosis of some autoimmune disease, making researches with the patient, as well as locating and using laboratory resources for diagnosis and treatment<sup>(17)</sup>.

The emergence of several dermatological manifestations brings to HIV / AIDS patients, besides the social stigma related to the disease, a difficulty in the acceptance of their image and their skin.

They are usually negatively affected in their life quality. However, in many cases, the awakening to the search for help and treatment happens precisely through dermatological manifestations, which can occur in services of the most diverse technological densities, which highlights the need to develop professional capacities for the care of people with skin lesions in the various services, from basic care to specialized services.

A study<sup>(25)</sup> brought the validation of a Client Evaluation Protocol in Dermatology by a service to patients with specific cutaneous conditions, aiming at valuing the patients' subjectivity, their social origin, their family relations, their values and beliefs, sharing self-care skills and using a person-centered approach. This instrument contributed to the nursing care quality to the patient with dermatological lesions, adding the focus on integral skin care.

Other studies<sup>(19-21,24)</sup> show the need for an interdisciplinary team capable of integral skin care. Care for patients affected by injuries requires specific knowledge and an approach with expanded look, establishing attention, bond and longitudinally. Dermatologists have contributed to the scientific knowledge basis in the care of dermatological lesions in HIV/AIDS patients, playing a role in educational orientation and disseminating knowledge about the most frequent dermatological manifestations.

Due to the lack of knowledge and specialized professionals in the African continent, the International Dermatology Foundation has implemented training programs in dermatology focused on the development of technical-scientific knowledge by health professionals in HIV / AIDS patients affected by skin lesions, contributing to the dissemination of educational tools for the effectiveness of this health services<sup>(19)</sup>. It's an initiative that can be an example to other countries.

The importance of early diagnosis, the evaluation of possible drug interactions, the origin of dermatological lesions due to opportunistic diseases or adverse reactions of antiretrovirals, and the low CD4 count<sup>(17,20-22,24)</sup> are pointed out in the nursing care.

The treatment should not aim at the lesions only, but at the individual as a whole, promoting interdisciplinary therapeutic interventions, enabling to plan and discuss care performance, maintaining a distinguished HIV / AIDS patients follow-up. Considering the stigma that still hampers the formation of care networks and the promotion and protection actions, aiming at collective approaches to the illness and the associated prejudice.

This study was limited by the few published researches on the subject. However, it amplified the motivation for the study precisely because of the knowledge gap experienced in professional practice, setting up an opportunity to bring up the discussion of the care of HIV / AIDS patients who live with dermatological lesions, pointing to a perspective of integration in the field of practice and research in skin care.

## CONCLUSION

The dermatological lesions in HIV / AIDS patients described in the scientific literature were the following: pruritic papular eruptions; Molluscum Contagiosum lesions; eosinophilic folliculitis; Leprosy lesions; psoriasis lesions; rashes related to drug interaction; Kaposi's sarcoma lesions; lesions of kaposilinfangiectatic sarcoma;

nodular lesions of non-Hodgkin's lymphoma; ectoparasite lesions; papular urticarias; prurigo; maculopapular mucocutaneae eruptions; oral ulcers; exanthema; erythematous and angiomatic papules; friable nodules; abscesses; perianal ulcerations; erythematous vesicular eruptions; seborrheic dermatitis; atopic dermatitis, papulonodular tumor, hemorrhagic lesions, cutaneous ulceration, tuberous lesions, hypochromic lesions; Idiopathic Guttate Hypomelanosis; cutaneous lupus lesions; and skin lesions.

Antiretrovirals have brought an increased expectation in survival and life quality of HIV/AIDS patients; however, drugs may cause some adverse reactions, such as the emergence of SIR, due to late onset of drug therapy and related to low CD4 count. Knowing the possible dermatological reactions related to HAART, as SIR, allows health care professionals to plan care based on scientific evidence and, therefore, analyze the work developed in the daily life, searching for technologies and care action approaches to meet the needs of patients.

In many cases, the awakening of the search for help in health services happens from the moment patients are "marked on the skin" by dermatological manifestations. Therefore, it is emphasized the importance of the interdisciplinary team's knowledge in performing care, establishing the bond of care, reducing the existing social stigma to the disease and strengthening patients' self-esteem regarding their skin image.

In addition, it is important to create service networks, planning the effective interaction among health professionals to improve access to available resources and increase the capacity of care to the population in their individual and collective needs. In the case of Brazil, with the expansion of primary health care, in particular the Family Health Teams, it is fundamental to develop the capacity for care and investment in the early identification of skin lesions, including those associated with HIV/AIDS.

## Conflict of interests

The authors declare no conflict of interests.

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