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Epidemiological Characteristics of Dermatological Diseases during HIV/AIDS Infection

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Abstract

Objectives: Currently, the incidence of muco-cutaneous disease during infection has changed after the introduction of new antiretroviral therapy and means of screening for infection. A better knowledge of the characteristics of these dermatoses will help us in the future to a better care of the patients. This document aims to list muco-cutaneous diseases and STIs in patients living with HIV/AIDS and to better know their epidemiological characteristics.

Methodology: This is a retrospective descriptive study carried out on HIV/AIDS cases with dermatoses and/or STIs, treated in the Department of Dermatology and Venereology of the Hospital and University Center of Oran Algeria, over a period from January 1, 2009 to April 30, 2018.

Results: Of the 116 HIV/AIDS cases treated for a dermatological condition, 105 cutaneous and mucosal manifestations were reported. More than 17% of cases had an association of two dermatoses and 7.5% of cases had a combination of dermatitis and an STI. In terms of frequency of dermatoses, venereal condylomas were the most contracted by patients with a rate greater than 15%, followed by seborrheic dermatitis (11.2%) and Kaposi's disease (6.8%).

Conclusion: This study revealed the incidence of the most common skin and mucosal conditions in dermatology in HIV/AIDS cases. It also allowed us to compare our results with international series studies.

Keywords: HIV; AIDS; Skin disorders; Oran; Algeria

Introduction

Acquired Immunodeficiency Syndrome (AIDS) is defined as a set of infectious and/or tumoral manifestations caused by HIV/AIDS [1]. Its mode of transmission is through sexual contact or after exposure to blood by maternal-fetal transmission, intravenous drug addiction, occupational exposure . . . etc. [2]. Its initial definition was published on September 24, 1982 by the CDC in the United States (Centers for Disease Control and Prevention), and revised thereafter [3].

In May 1986, the International Committee on Virus Taxonomy recommended a single name that was adopted and identified as a Human Immunodeficiency Virus (HIV). There are two variants of HIV, HIV1 and HIV2 [4].

HIV/AIDS is a real health problem because of its borderless pandemic [3,5]. An estimated 35 million people are living with HIV and 39 million people have died of AIDS-related diseases [6]. Since the 1990s, there has been a stabilization of the epidemic, with a decrease in the incidence of new cases of HIV infection, thanks to advances in prevention and treatment. In 2016, there were 1.8 million new infections, a decrease of 11% since 2010 [7,8].

Muco-cutaneous manifestations during infection are common. This frequency has been revealed since the first observations by American and European authors [9,10]. They are infectious, tumoral or inflammatory diseases all having specificities in their pathophysiology and their interactions with the virus.

These manifestations are caused by a cellular immune deficiency, related to the involvement of T helper cells by HIV. This leads to a significant vulnerability of the body to diseases usually benign and well controlled by the immune system. These manifestations are present at all stages of the disease; from primary infection, to AIDS disease stage. They can reveal the disease and have a prognostic interest [11]. It is estimated that 90% of patients who harbor HIV develop one or more dermatoses [12,13]. These manifestations can take several aspects and have similar appearances to those encountered in the healthy subject.

The aim of this work is to identify the epidemiological characteristics of muco-cutaneous diseases and STIs in patients living with the HIV/AIDS virus infection at UHC Oran.

Methodology

Type of study

This is a retrospective descriptive study conducted in cases with HIV/AIDS, carriers of dermatoses and/or STIs (sexually transmitted infections), managed by the Department of Dermatology and Venereology of the University Hospital Center, Oran Algeria, over a period from 1 January 2009 to 30 April 2018.

Data collection

The data was collected from patients' files whose main analyzed information was:

Dermatoses: Including those that have caused suspicion or

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confirmation of the diagnosis of HIV infection, such as disseminated prurigo, HPV (Human Papilloma Virus) infections, shingles of young adults, Kaposi's disease and seborrheic dermatitis.

Age: All ages were studied in order to know the pediatric cases that were defined at the age of 12 years.

Sex: In order to know the predominance of sex with regard to cutaneo-mucous manifestations in our cases HIV/AIDS.

Associations: for a better knowledge of the frequency of associations of dermatoses and/or STIs that a person infected with HIV/AIDS could do.

Analysis plan

- use of the software epi-Info version 6.
- calculation of frequencies by percentages.
- the maximum risk of error allowed for this study is 5% (p=0.05).
- measurement of the degree of significance between the variables by the Pearson and Ficher chi^2 test.

Results

Description of the study population

Of the 116 HIV/AIDS cases treated for a dermatological condition, 105 cutaneous and mucosal manifestations were reported. More than 17% of cases had two dermatoses and 7.5% had a combination of dermatitis and STI.

Frequencies

In terms of the frequency of dermatoses, venereal condylomas were the most contracted by patients with a rate greater than 15%, followed by seborrheic dermatitis (11.2%). It was also noted that Kaposi's disease was diagnosed in more than 6.5% of cases (Table 1).

Specific description of dermatoses

With regard to the description of dermatoses according to age groups, two categories of age had been analyzed that of pediatric HIV and adult HIV.

- For pediatric HIV (age<12 years), six dermatoses were collected including one case of venereal condyloma in a two-year-old female child.
- For adult HIV, the 25-36 age group was most commonly affected by Venereal Warts, seborrheic dermatitis, psoriasis, acne and genital candidiasis. In contrast, Kaposi's disease was very common in the age group 37-45 years.

Regarding the description of dermatoses by sex, it was noted that the male sex was frequently affected by seborrheic dermatitis, psoriasis and cutaneous xerosis. The female sex was clearly affected by venereal warts and Kaposi's disease.

Comparison

The analysis of the degree of significance between dermatoses and sex showed a difference between the two sexes for venereal condylomas and for seborrheic dermatitis. It was also highly significant for Kaposi's disease.

Regarding age groups, no significant difference was found in relation to all dermatoses.

Discussion

Cutaneous and mucosal conditions during HIV/AIDS infection are many and varied. These are good clues for the diagnosis of HIV infection and also serve as markers of progression of the associated systemic disease [14,15].

An HIV infection is to be feared in the presence of some dermatoses of recent appearance and/or resistant to treatments. Such as: seborrheic dermatitis, psoriasis, STI, candidiasis or dermatophytosis and Kaposi's disease [2].

Through the results of this study, we noted that the muco-cutaneous manifestations in our patients had on the whole presented a profile similar to the African and North African series and they also approached the international studies by the frequency of the infections, HPV (venereal condyloma), seborrheic dermatitis and Kaposi's disease [16-19].

Main dermatosis and STDs, N (%)																
DERMATOSIS TOTAL (116)	**Venereal condylomas** 18 (15.5)	**Seborrheic dermatitis** 13 (11.2)	**Psoriasis** 13 (11.2)	**Acne** 10 (8.6)	**genital candidiasis** 8 (6.8)	**Kaposi's disease** 8 (6.8)	**Prurigo** 7 (6)	**Dermatophytosis** 6 (5.2)	**Molluscum contagiosum** 5 (4.3)	**Herpes** 5 (4.3)	**Photosensitivity** 4 (3.5)	**Eczema** 4 (3.5)	**xerosis cutaneous** 4 (3.5)	**Pyoderma** 4 (3.5)	**cutaneous Pigmentation** 4 (3.5)	**Syphilis** 3 (2.6)
AGE GROUPS (years)																
<12	1 (5.5)	0	1 (7.69)	0	0	0	1	0	2	1	0	0	0	0	0	0
13-24	3 (16.7)	0	1 (7.69)	3 (30)	1 (12.5)	0	1 (14.28)	0	1	0	0	2	0	3	0	1
25-36	8 (44.4)	11 (84.6)	7 (53.86)	5 (50)	6 (75)	1 (12.5)	2 (28.57)	2	1	1	3	0	1	2	1	1
37-48	4 (22.4)	1 (7.8)	0	2 (20)	1 (12.5)	5 (62.5)	4 (57.15)	4	1	2	1	1	1	1	0	0
49-60	2 (11)	1 (7.8)	1 (7.69)	0	0	2 (25)	0	0	0	1	0	0	0	0	1	0
61-72	0 (0)	0	2 (15.38)	0	0	0	0	0	1	0	0	0	0	0	1	0
73 and more	0 (0)	0	1 (7.69)	0	0	0	0	0	0	0	0	0	0	0	1	0
GENDER																
Male	3 (17)	11 (85)	11 (85)	4 (40)	4 (50)	1 (12.5)	4 (57)	2 (33.5)	2 (40)	2 (40)	2 (50)	1 (25)	4 (100)	1 (25)	2(50)	3(100)
Female	15 (83)	2 (15)	2 (15)	6 (60)	4 (50)	7 (87.5)	3 (43)	4 (66.5)	3 (60)	3 (60)	2 (50)	3 (75)	0	3 (75)	2(50)	00

FREQUENCY OF HIV-DERMATOSIS/STD ASSOCIATIONS, N (%)	
Two dermatosis	18 (17)
More than two dermatosis	1 (10.5)
Dermatosis and STDs	8 (7.5)
Two STDs	14 (13.5)
Isolated dermatosis and STDs	54 (51.5)
Total	**105**

Table 1 : Dermatosis and STDs during HIV/AIDS infection by age group and gender.

HPV is a group of epitheliotropic viruses that can infect the skin, the anogenital tract, the mouth, the larynx and the esophagus [20]. The vast majority of children are infected in the respiratory and genital tracts. Its transmission is vertical during the perinatal and sexual period during childhood by abuse [21,22].

The incidence of anogenital warts in children is five times higher than the incidence of adults and the average age of onset varies from 2.8 to 5.6 years. It should be noted that children aged 8 to 12 are 12 times more likely to have been sexually assaulted than those under 4 years of age [22,23].

In our cohort, we found only one case of venereal condyloma in a two-year-old girl (accompanied by HIV-infected parents) where no notion of sexual abuse was found after interrogation and expertise medical. This infection was probably vertical with late declaration and in relation with the immunodepression since the induced lesions in the children can appear after several months or even years. This makes it impossible to determine in most cases the mode of transmission of this infection [23].

The prevalence of HPV infection is higher among people with HIV than in the general population. It is estimated that there are nearly one million new cases of genital warts diagnosed each year in adults. Venereal condylomas are clinically apparent in at least 1% of the sexually active population. The incubation period is approximately 3 months [24]. Carriage of HPV is very common in women between 20 and 24 years of age and in men between 25 and 29 years of age [25,26]. These data are consistent with our series, where it has been noted that HPV infection (condyloma) has frequently affected sexually active young adults for both sexes.

The clinical presentation of seborrheic dermatitis is common and does not have a parallel evolution with immunosuppression. Its physiopathology is not certain [19,27,28]. It has been noted that its frequency in the medical literature for HIV/AIDS infection is between 10% and 80% [27]. What evoked a similarity between the results of our work with those of the international and Maghreb series [18,27,29].

Skin conditions associated with severe immunosuppression, such as Kaposi's disease and severe opportunistic infections are currently less commonly observed [14,30]. Epidemic Kaposi's disease can occur at any stage of the infection; it is similar to the classical form. However, characterized by high skin diffusion and frequent visceral involvement it is considered a diagnostic and prognostic marker of HIV/AIDS infection [27,31]. It is characterized by its rarity in women [32]. Which did not join the profile of our cohort characterized by a female majority.

Immune dysfunction associated with HIV creates a favorable environment for the development of psoriasis [33]. Cases of psoriasis observed during HIV/AIDS infection are severe and refractory to conventional therapies. They correlate with profound immunodeficiency and poor prognosis [1,34-36]. The prevalence of immunosuppressed psoriasis in HIV does not differ from that of general population [35,37-39]. It remains quite weak in some African series studies [17]. However, she was frequently observed in our work.

Acne associated with HIV is usually serious or worsens with the progression of the viral infection. In women, acne tends to last up to 22-25 years [40]. On the other hand, the tendency to prolong until the age of 37-44 has characterized our female population.

Cutaneous xerosis is common and occurs in the terminal stage of the disease [1]. Its occurrence in our patients was determined by its low frequency as for some African series [17].

Strengths of study

This study has helped us to compare typical socio-demographic data with the dermatological manifestations most commonly seen in patients with HIV/AIDS infection.

Limitations of the study

This study is retrospective limiting the exhaustive collection of data concerning dermatoses in patients' files for lack of information sometimes.

Conclusion

The pathophysiology of dermatoses and their association with the HIV/AIDS virus remain unclear and represent a real challenge for the clinician. Also the risk of developing dermatitis and the severity of these are greatly increased in infected cases, given the severity of the impact of the infection on the immunity of the individual. However, the value of a systematic dermatological clinical examination in all cases of HIV/AIDS is of great diagnostic importance because cutaneous complications constitute a genuine source of morbidity.

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