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Original Research Article

Study of mucocutaneous manifestations in HIV-infected patients and its relation to cd4 count and stage of HIV disease

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ABSTRACT

Background and Aims: HIV patients frequently have mucocutaneous manifestations, which could be the first sign of the infection and can also be prognostic markers for disease progression. This study was done to note the different mucocutaneous manifestations occurring in the people living with HIV/AIDS.
Materials and Methods: One hundred ensuent HIV seropositive patients who attended the opd were included in the study.
Results: The bulk of the study participants were illiterate, had a mean age of 32, and a male to female ratio of 2:1. The patients' number of manifestations ranged from 01 to 05. The most typical illnesses observed in this investigation were dermatophyte infections followed by oral candidiasis. The most frequent non-infectious symptoms observed in this investigation were SD and PPE. The most prevalent STI was herpes genitalis. Inversely correlated with CD4 level were the type, number, and severity of mucocutaneous symptoms. The number of manifestations and CD4 count were found to be inversely correlated.
Conclusion: The majority of PLHAs (55%) exhibited several manifestations. The majority of the manifestations are unusual, persistent, recurrent, and resistant to the therapy. Young patients presenting with extensive SD, PPE, OC, scrofuloderma, and HZ should encourage the clinician to investigate the patient's sero-reactivity status

1. Introduction

By the end of 2021, there will be roughly 38.4 million PEOPLE LIVING WITH HIV AND AIDS (PLHA) worldwide. In India, the prevalence of the Human Immunodeficiency Virus (HIV) was expected to be 0.55% in 2000, 0.32% in 2010, and 0.21% in 2021.[1] HIV prevalence was estimated to be 0.22% in the adult male population and 0.19% in the adult female population. Maharashtra (3.94 lakh), Andhra Pradesh (3.21 lakh), Karnataka (2.76 lakh), Uttar Pradesh (1.78 lakh), Tamil Nadu (1.63 lakh), Telangana (1.56 lakh), Bihar (1.43 lakh), and Gujarat are the states/UTs expected to have the greatest number of PLHIV at more than 1 lakh apiece (1.14 lakh). Around 73% of the PLHIV burden is spread across these eight states. Many dermatological problems have proven to be helpful indicators of HIV infection progression and diagnosis. Around 90% of PLHA get skin problems at some point throughout their illness.[2] Although these illnesses are common in the general healthy population, they are frequently unusual, severe, and explosive in PLHA, necessitating prolonged treatment times.

2. Aims and Objectives

1. To study the dermatological manifestations in PEOPLE living with HIV and AIDS (PLHA) attending DVL OP of government general hospital,

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2. To compare the cutaneous manifestations in PLHA with stage of HIV disease (WHO staging) and CD4 count.

3. Materials and Methods

A prospective observational study was conducted on 100 known HIV + people who visited the DVL OPD with symptoms of a skin condition. The Kurnool Medical College's ethical committee provided the study with its ethical approval. In every patient, a thorough physical examination and a detailed history were performed. Where applicable, investigations were carried out to confirm the patient's diagnosis. The tests that were sent included a full blood count, an ESR, a biopsy, a KOH mount, a full urine examination, a Mantoux test, an LFT, an RFT, and, when necessary, an x-ray chest PA view.

4. Observation and Results

There were 63 men and 37 women among the 100 cases that were examined. The age range of 31 to 40 years was represented by 32% of the patients [Figure 1]. The majority of the patients were in stage 2 of the WHO [Figure 2]. CD4 counts ranged from 201 to 500 for 50% of the patients (Table 1).

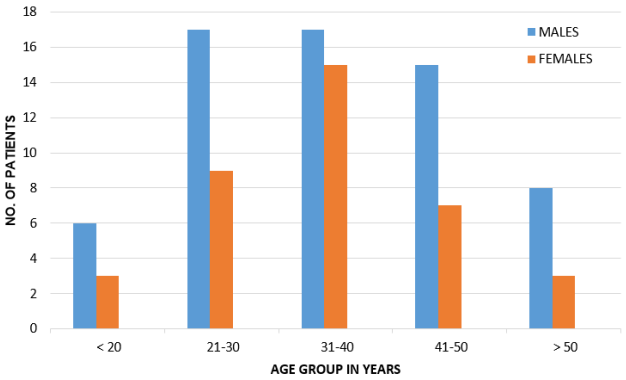

Fig. 1: Age & sex wise distribution of patients

Table 1: Patients' distribution according to their CD4 counts

CD4 Count in cells/μl	No. of patients	Percentage (%)
< 200	28	28%
201 - 500	50	50%
> 500	22	22%
Total	100	100%

40% of patients with dermatological symptoms also experienced non-infectious symptoms, according to (Table 2). The majority of patients (45%) only had one manifestation, and [Table 3] when the CD4 level decreased,

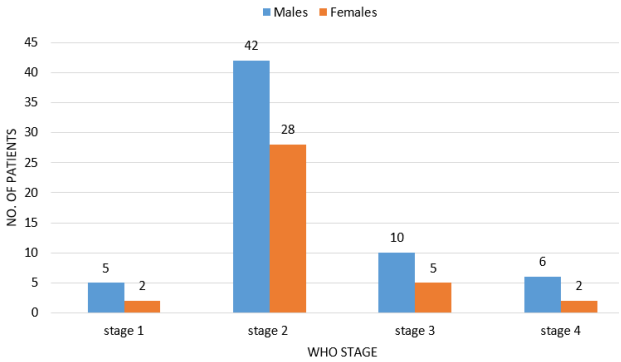

Fig. 2: Case distribution according to WHO staging

the number of manifestations rose. In 15 (34%) cases, seborrheic dermatitis was the most prevalent non-infectious symptom [Table 4]. The majority of infections were caused by fungi (48), the majority of bacterial infections were caused by pyogenic bacteria (07), the majority of fungal infections were caused by tinea, primarily tinea corporis and tinea cruris (18), and the majority of viral infections were caused by herpes zoster (11) and herpes genitalis (09), respectively [Table 5].

Table 2: Grouping of study participants with various dermatological manifestations.

Dermatological manifestations	No. of patients	Percentage (%)
1. Infectious	34	34%
2. Non-infectious	26	26%
3. Both infectious and non-infectious	40	40%
Total	100	100%

5. Discussion

100 HIV-positive individuals with dermatological and STI manifestations who were DVL out-patients at Kurnool Medical College, Kurnool, were included in this prospective study. In the study, 100 patients were involved, of which 70 (70%) only had dermatological manifestations, 9 (9%) only had STIs, and 21 (21%) had STIs and dermatological manifestations.

The male:female ratio in the current study was 2:1, which is comparable to studies by Sen et al,[3] where it was 2:1, and Vijayakumari et al,[4] where it was reported to be 1.6:1. Of the 100 patients, 32 (32%), or the majority of the cases, were between the ages of 31 and 40. This demonstrates that the majority of HIV-positive people are among the most sexually active demographic. This is comparable to studies conducted by Dr. A. Kiranraju et al.[5] and Vijay Kumari et al. [04], which revealed 46% and 47%, respectively, of cases in the age category of 31 to 40. In this study, 48% of the

Table 3: Grouping of patients as per number of manifestations

Number of manifestations	Number of patients	Average age (years)	Average CD4 count (cells/μl)
Single manifestation	45	33	339
Two manifestations	30	38	315
Three manifestations	18	37	300
Four manifestations	06	40	276
Five manifestations	01	34	149

Table 4: Mean CD4 counts and No. of Non-infectious cutaneous manifestations

Non-infectious cutaneous manifestations	Total patients	Percentage	CD4 count(cells/μl)			Mean CD4 count
			< 200	201-500	>500	
PPE	13	29.5%	07	05	01	260
ADR	01	2.27%	00	01	00	445
SD	15	34%	06	09	00	263
Psoriasis	04	9%	01	02	01	437
Lichen planus	03	6.8%	01	02	00	269
Xerosis/icthyiosis	08	18.1%	02	05	01	329
Total	44	100%	17	24	03	333

Table 5: Various infections and their CD4 count

Infectious mucocutaneous manifestations	No. of patients	CD4 count(cells/μl)			Percentage	Mean CD4 count
		<200	201-500	>500		
Bacterial Infections						
Pyogenic bacterial infection	07	03	03	01	53.8%	295
Syphilis	03	01	02	00	23%	282
Gonococcal urethritis(GU)	01	00	01	00	7.6%	319
Leprosy	01	00	01	00	7.6%	362
Scrofuloderma	01	01	00	00	7.6%	169
Fungal Infections						
Tinea infections	18	05	10	03	37.5%	352
P Versicolor	07	01	05	01	14.5%	401
Oral candidiasis	13	06	05	02	27%	225
Onychomycosis	02	00	01	01	4.1%	444
Candidial BP	05	01	03	01	10.4%	318
Vulvovaginal candidiasis	03	01	01	01	6.25%	311
Viral Infections						
H zoster	11	06	04	01	35.4%	161
H genitalis	09	02	04	03	29%	412
H labialis	02	00	01	01	6.4%	622
Genital Warts	06	00	04	02	19.3%	361
MC	03	00	01	02	9.6%	519

patients were illiterate. The number of illiterates is equal to the 52.6% found in a survey by Jindal et al.[6] Patients made up a majority (55%) of unskilled workers. In comparison to studies by Jindal et al., where the percentage of unskilled workers among PLHAs was 39%,[6] and Kiran Raju et al., where it was 40%,[5] the percentage in the current study (55%) is greater.

The majority of the study group's patients (78%) had CD4 counts below 500 cells/μl, of which 28% had CD4 counts below 200 cells/μl. In contrast, Munoz-Perez et al's study revealed that 53% of patients had CD4 counts below 200 cells/μl.[7] The average CD4 count was 364 cells/μl, which is greater than the results of studies by Lt. Col. Biju Vasudevan et al[8] and A Vijaya Kumari et al[5] which showed 249 cells/μl and 274 cells/μl, respectively. In the current investigation, the CD4 count ranged from 54 to 1400 cells/μl. The patients' symptom counts ranged from 01 to 5, indicating that multiple manifestations could occur in a single patient and reinforcing the need for a thorough assessment of the patient. One manifestation was seen in 45 patients (45%), two manifestations in 30 patients (30%), three manifestations in 18 patients (18%), four manifestations in 6 patients (6%), with a mean CD4 count of 276 cells/μl, and five manifestations in 1 patient (1%), with a mean CD4 count of 149 cells/μl. Here, the relationship between the CD4 count and the number of

manifestations is inverse. The most frequent disorders to manifest simultaneously were SD and PPE, which were observed in 05 patients and had a mean CD4 of 232 cells/μl.

In this study, fungal infections were most frequently seen as infections. In Infections, dermatophytic infections were found in 18 patients (18%). 06 patients had extensive tinea infection, with a mean CD4 count of 273 cells/μl. There were 13 patients (13%) who presented with oral candidiasis, which is comparable to the 15% seen in a research by Kiran Raju et al.[5] Oral candidiasis patients had an average CD4 level of 225 cells/μl. In our study, there were 7 cases of pyoderma, making it the most prevalent bacterial infection. The most frequent type of pyoderma observed was foliculitis. In this study, the mean CD4 cell count associated with pyoderma was 295 cells/μl, which is comparable to the study of Munoz-Perez et al,[7] which found 357 cells/μl. The incidence of pyoderma was found to be 7% in this study, which is higher than the 5.6% reported by Sivayathom A and nearly identical to the 7.9% study by Jindal et al.[9]

The most frequent viral infection seen in this study was Herpes zoster. Patients with HZ had an average CD4 count of 161 cells/μl. Herpes genitalis was detected in a total of 9 patients(9% of cases), and was the most frequent cause of STIs in the study, which is consistent with the majority of other studies like Shobana et al.(8%). One patient had ulcers in the perineal and penile area with a CD4 level of 54 cells/μl, and the other patient, an MSM, had a huge ulcer in the perineal area with a CD4 count of 97 cells/μl. Both patients had chronic, non-healing ulcers that took both patients around 6 weeks to heal.[10]

Seborrheic dermatitis 15(15%) and pruritic papular eruptions 13(13%) were the most frequent non-infectious manifestations. PPE had a mean CD4 count of 260 cells/μl, while seborrheic dermatitis patients had a mean CD4 count of 263 cells. In 8 patients (8%), xerosis/ichthyosis was observed, with a mean CD4 count of 329 cells/μl. Psoriasis was present in 04 participants in the current study, with a 4% frequency. A mean CD4 count of 437 cells/μl was observed. All individuals had significant scalp involvement in addition to severe body involvement.

In the study of 100 patients, a total of 28 (28%) had manifestations to the scalp and hair. 350 cells/μl was the average CD4 count in those who had hair changes. These include psoriasis, seborrheic dermatitis, and diffuse non-cicatricial alopecia.

6. Conclusion

Ages 21 to 40 constitute the most sexually active age range and are most frequently affected (58%); this suggests that sexual contact is the primary method of transmission. M:F ratio was 2:1 according to the distribution of the two sexes. The majority of PLHAs are from rural areas and are illiterate. The frequency of combined infected and non-infectious dermatological manifestations (40%) was the highest, followed by infectious (34%) and non-infectious (26%). The majority of the patients (50%) had CD4 counts between 201 and 500 cells/μl. The most prevalent infectious manifestation includes various forms of tinea, and was observed in 18 patients (18%), with a mean CD4 of 352 cells/μl. Seborrheic dermatitis, which was present in 15 patients (15%) and with a mean CD4 count of 263 cells/μl, was the most prevalent non-infectious manifestation. Oral candidiasis, which was present in 13 patients (13%) and had a mean CD4 of 225 cells/μl, was the most prevalent oral manifestation. The most prevalent STI was herpes genitalis.

The clinical markers for the progression of AIDS include Herpes Zoster (161), Scrofuloderma (169), Oral Candidiasis (225), PPE (260), and SD (263) as they have been linked to considerably lower CD4 counts.

The majority of PLHAs (55%) exhibited several manifestations. The majority of the manifestations are unusual, persistent, recurrent, and resistant to the therapy. Young patients presenting with extensive SD, PPE, OC, scrofuloderma, and HZ should encourage the clinician to investigate the patient's sero-reactivity status.

7. Limitation

Since only 100 people were included in the study, the results may not accurately reflect the prevalence of PLHAs in larger populations, so there is a need for numerous additional large-scale studies to be conducted to know the actual occurance.

8. Source of Funding

None.

9. Conflict of Interest

None.

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