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Research Article

**A ONE YEAR DESCRIPTIVE RESEARCH EXPERIENCE ON
THE ASSOCIATION OF THE SKIN DISORDERS IN THE HIV
DIAGNOSED PATIENTS TO CELL COUNT OF CD – 4 IN
SERVICES HOSPITAL, LAHORE**¹Dr. Nouman Asgher, ²Dr. Usama Shoukat, ³Dr. Mariam Hussain¹Medical Officer, Rural Health Centre 229RB, Faisalabad²Medical Officer, Social Security Hospital, Madina Town Faisalabad³WMO, Basic Health Unit, Haveli Laal, Jhang**Abstract:**

Objective: In the patients of HIV repeated clinical features are the manifestations of the skin; our research was aimed at the documentation of these manifestations in relation to the cell-counts of the CD-4 in the patients of HIV.

Methodology: Research design was descriptive and it was carried out for the examination of the disorders of the skin and count of the CD-4 through the record of the patients in Services Hospital, Lahore in the time span of January, 2016 to December, 2016. Every management was carried out in the presence of a skilled dermatologist. We also carried out data analysis through specimens of the T-test.

Results: One issue (at least) of the skin was observed in sixty-six patients (94.3%). Most repeated issue in the patients of the skin was the infection (Fungal). Other related eight repeated mucocutaneous type problems were also observed such as pallor, gingivitis, photosensitivity, itching, candidiasis, seborrheic dermatitis, tinea versicolor and folliculitis. Gingivitis was also one of the most repeated manifestation of the skin disorders. It was observed that a mean count of the CD-4 cell was less in the bacterial and viral skin disease patients with a significant P-value of (less than 0.05).

Conclusion: It was observed in the outcomes of the research that issues of the skin were repeatedly observed in the patients of HIV. In the advance stage of the HIV cases these disorders were relatively less in the count of CD-4. We recommend skin check-up in all the cases with positive HIV for an in-time diagnosis of the skin issues, because an early diagnosis can lead to an early management of the disease and it will also help in the improvement of the life quality of the HIV patients.

Key Words: Skin disorders, Positive HIV, Disease and CD-4 Count.

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INTRODUCTION:

The incidence of AIDS/HIV is observed in about 39 – 46 million people all around the world [1, 2]. The major health issues are faced in terms of infection of HIV in the healthcare department all over the world [3 – 6]. Various research studies have targeted the numerous internal medicine domains to find a correlation between the counts of CD-4 cell and systemic changes [2]. Numerous dermatologist's manifestations are faced by HIV infected cases in variety as a serious healthcare issue [7, 8].

In all the patients of HIV, significant morbidity has an association with the disorders of the skin with early symptoms of the immunosuppression [9]. These manifestations are indicators of the clinical investigations and also form a solid establishment with the condition of the skin and cell counts of the CD-4 in the infected cases of HIV [8, 10]. A range of 500 – 1500 cells of the CD-4 is counted in the adults and adolescents in blood (per mm^3). Generally, CD-4 (CD4 % + an absolute count) decreases gradually with the development of HIV infection [11].

A less cell count of CD-4 nadir is related to the moderate risk factors of the gradually developing HIV infection in the patients which is moderate in nature [12]. The condition of the skin may also indicate the HIV infection progression which can be potentially disabling, life-threatening or disfiguring [9].

General health condition is adversely affected by the mucocutaneous manifestations, it also indicates the worse disease prognosis as well as diagnostic factors of the patient's status of the immune and its onward monitoring [3, 6]. In various research studies it has been established that the relation of the disorders of the skin with the infection of the HIV can be a potent indicator of the severe advanced HIV stage, decreased level of the cell count of CD-4 and immune suppression [10 – 19].

In the patients of HIV repeated clinical features are the manifestations of the skin; our research was aimed at the documentation of these manifestations in relation to the cell-counts of the CD-4 in the patients of HIV.

METHODOLOGY:

Research design was descriptive and it was carried out for the examination of the disorders of the skin and count of the CD-4 through the record of the patients in Services Hospital, Lahore in the time span of January, 2016 to December, 2016. Every management was carried out in the presence of a skilled dermatologist. We also carried out data analysis through specimens of the T-test. For the identification of the skin disorders detailed physical assessment of the patients was performed and every possible disorder was identified in this examination. If the diagnosis was doubtful the biopsies of the skin were referred to the concerned lab for detailed histopathological examination.

CD-4 count of the cells was made on the unit of (cell/ mm^3) and assessment of the cell count was made through a gold standard known as flowcytometry (measurements of T lymphocytes) [11].

We analyzed the outcomes of the research in SPSS and T-test with p-values (< 0.05). Research included only those cases who were fully conversant with the research protocols.

RESULTS:

One issue (at least) of the skin was observed in sixty-six patients (94.3%) (Table – I). Most repeated issue in the patients of the skin was the infection (Fungal). Other related eight repeated mucocutaneous type problems were also observed such as pallor, gingivitis, photosensitivity, itching, candidiasis, seborrheic dermatitis, tinea versicolor and folliculitis (Table – II). Gingivitis was also one of the most repeated manifestation of the skin disorders. It was observed that a mean count of the CD-4 cell was less in the bacterial and viral skin disease patients with a significant P-value of (less than 0.05). Male to female ratio was respective 68 males and only two females.

Patients were observed (34.07 ± 7.6 years) as mean age, skin lesions mean of (4.3 ± 2.4), CD-4 cell count mean as (640.6 ± 294.8) cell per mm^3 . We observed no significant correlation in the cell counts of the CD-4 and both dermatological disease etiologies including the total lesions of the skin. Table – III shows the mean cell count of the CD-4 which was observed less in the bacterial and viral skin disease patients with a significant P-value of (0.02).

Table – I: Skin lesions frequency in the positive HIV cases

Number of Skin lesion	Skin lesions of the patients	
	Number	Percentage
None	4	5.7
One	3	4.3
Two	6	8.6
Three	13	18.6
Four	17	24.3
Five	10	14.3
Six	4	5.7
≥ Seven	13	18.5
Total	70	100

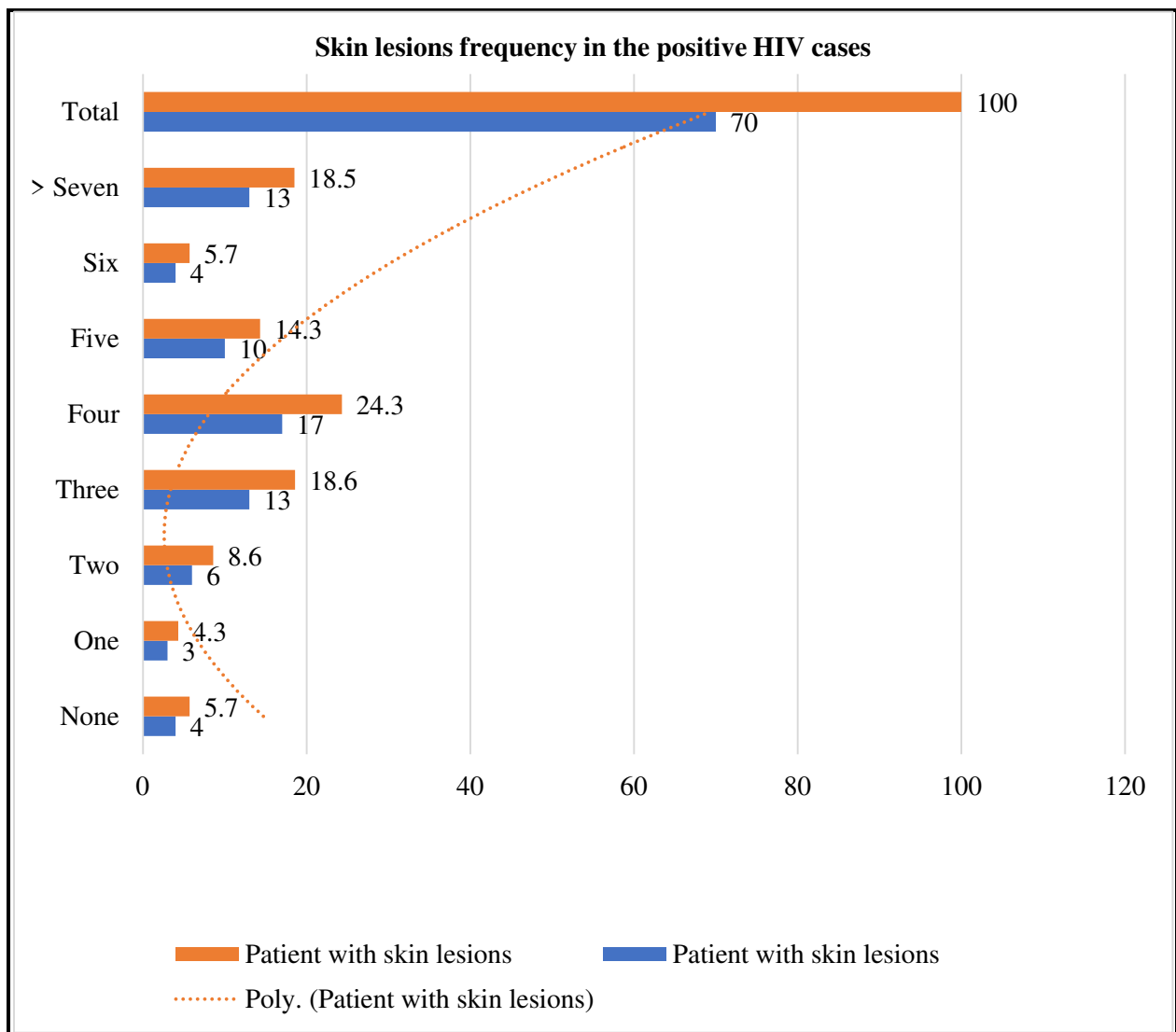


Table – II: Skin disease frequency in the HIV cases

Skin diseases		Number	Percentage
Viral	Herpes simplex	9	12.9
	Herpes zoster	7	10
	Wart	5	7.1
	Cytomegalo virus infection	1	1.4
Fungal	Candida albicans	22	31.4
	Pityriasis versicolor	16	22.9
	Trichophyton rubrum	1	1.4
Bacterial	Folliculitis	21	30
	Furuncle	7	10
	Skin TB	3	4.3
	Abscess	1	1.4
Neoplastic	Kaposi's Sarcoma	1	1.4
Parasitic	Amebiasis	1	1.4
Eczema	Seborrheic dermatitis	23	32.9
Others	Gingivitis	58	82.9
	Pruritus	30	42.9
	Photosensitivity	25	35.7
	Xeroderma	13	18.6
	Pallor	36	51.4
	Telogen effluvium	8	11.4
	Alopecia areata	4	5.7
	Pittosporum folliculitis	4	5.7
	Long eyelashes	3	4.3
	Apotheosis	2	2.9
	Prurigo-like lesions	1	1.4
	Bacillary angiomatosis	1	1.4
	Eosinophilic pustulosis	1	1.4
	Maculo-papular lesions	1	1.4

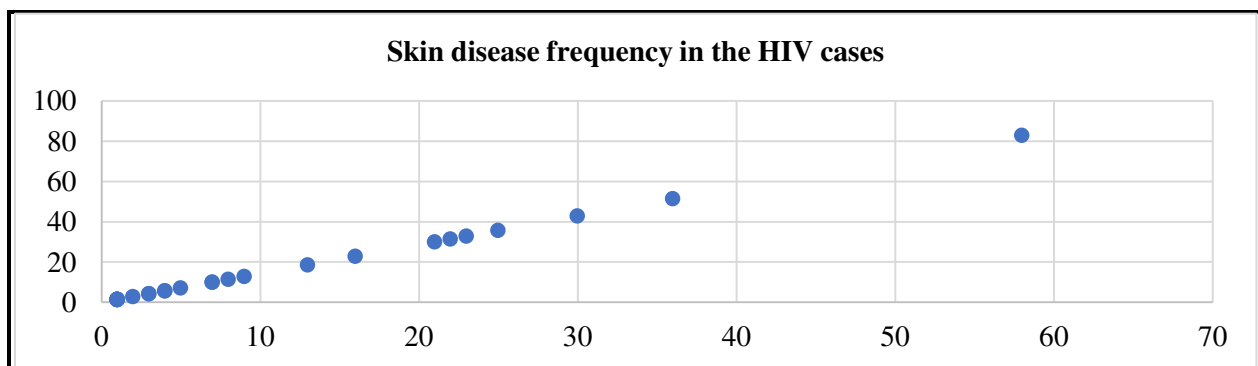


Table – III: An association between skin disorders etiology & CD-4 counts (cell/mm³)

Etiology	Mean CD4 counts (\pm SD)		P-value
Viral	524 \pm 295.5	690.6 \pm 283	0.02
Fungal	578.2 \pm 289.6	690.2 \pm 293.1	0.1
Bacterial	548.8 \pm 256.2	698.3 \pm 305.6	0.03
Neoplastic	1102	634.3 \pm 291.6	0.1
Parasitic	321	645.3 \pm 294.4	0.2
Eczema	644 \pm 323.9	639 \pm 283.2	0.9

DISCUSSION:

We detected one case of skin disorders in the total of 94.3 percent of the total cases infected with HIV. Regional variation can be seen in the incidence of the skin diseases such as in the case of Tanzanian population and few other to mention as Thailand, Zambia and Cameroon respectively having 41.7%, 68.8%, 98.3% and 95% [13, 16, 18, 20, 21]. This difference can be attributed to the healthcare facilities status, environment and climatic conditions. In this particular research study, the bacterial and fungal eczema and infections were repeatedly observed as the reasons behind the cutaneous disorders. Other authors also attribute the skin disorders with the infection of the fungal, bacterial and viral related to the common cause of the skin diseases as neoplasia [17, 19]. Same has been stated in the research of Eichmann's as he states common cause of these disorders in the patient of HIV as eczema [22].

A research held in USA observed 34% dermatophytosis, 23% oral hairy leukoplakia and 19% folliculitis as the repeated causes of these disorders [18]. Sivayathorn states numerous prevalent conditions more than 5% including 34.3% oral candidiasis, 32.7% pruritic papular eruption, 21.0% seborrheic dermatitis, 16.1% herpes zoster, 14.9% oral hairy leucoplakia, 10.9% herpes simplex, 9.3% onychomycosis, 7.7% cutaneous ringworm, 6.5% psoriasis & 5.6% folliculitis [24]. Numerous other authors have stated various reasons with varying proportions [2, 7, 8, 24, 25]. We observed in this particular research that a relatively higher mean count of the CD-4 was delayed in occurrence in the HIV infected cases in Pakistan.

We observed relatively decreased count of cells of CD-4 in the bacterial and viral infected cases; whereas, in some of the research studies the same was observed high [2, 21]. Generally, there was a strong association of the skin disorders and cell count of CD-4 in the population of our research. However, it is also concluded in our research outcomes that disorders of the skin can be observed with an

increased cell counts of the CD-4 in the patients of HIV. Dermatological disorders are highly prevalent in the positive HIV cases in number and frequency with well related disease manifestations linked with the progression of the disease and status of the patient's immune system [24].

It is concluded that HIV patients commonly face disorders of the skin as in the advanced disease stage the CD-4 count is observed low. It is indicated in the outcomes of this research that HIV patients are to assessed for disorders of the skin for an early diagnosis and management of the disease for the overall improvisation of the life-style. Early stage of the disease has less issues than the advanced disease stage [7].

CONCLUSION:

It was observed in the outcomes of the research that issues of the skin were repeatedly observed in the patients of HIV. In the advance stage of the HIV cases these disorders were relatively less in the count of CD-4. We recommend skin check-up in all the cases with positive HIV for an in-time diagnosis of the skin issues, because an early diagnosis can lead to an early management of the disease and it will also help in the improvement of the life quality of the HIV patients.

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