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A COMPARATIVE STUDY ON THE REDUCED CD4 COUNT AND SKIN MANIFESTATION

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Abstract:

Objective: *The manifestations of the skin are very frequent medical aspects among the patients of HIV. The objective of this research work was to record the manifestations of the skin and their associations with the amount glycoprotein on the surface of helper T cells known as CD4 among patients of HIV in Mayo Hospital Lahore.*

Methodology: *Skin specialist checked the abnormalities of the skin in the patients and counts of CD4 were gotten from the record of the patient. T test was in use for the analysis of the collected information.*

Results: *In this research work, sixty-six patients were present with at least one abnormality of the skin. Infections by fungi were the most frequent reason of these diseases. There were eight most frequent types of abnormality of mucocutaneous were available. Inflammation of the gums is the most common manifestation. The average count of the CD4 cell was less in the patients found with skin diseases due to viruses and bacteria.*

Conclusion: *The outcome of this research work showed that the complications of the skin were very common in the patients suffering with HIV. Patients with severe conditions of the skin abnormalities were available with lower amount of the CD4 cells. So, the check-ups of the skin of the patients of HIV should be carried out for the early diagnosis of the skin complications. The early discovery and the administration of the skin problems will promote the QOL (quality of life) of the patients suffering of HIV.*

Keywords: *Morbidity, Adolescents, frequent, Viruses, glycoprotein, Inflammation, Fungi, Bacteria.*

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INTRODUCTION:

About thirty-nine to forty-six million persons are suffering of the HIV in the whole world [1, 2]. The infection due to HIV makes the main problem of health in the world [3-6]. Research works on the capabilities of the medicines are trying to find out the association counts of the CD4 cell and systemic alterations [2]. The disease of skin is very vital problem of health in the patients of the HIV with different types of manifestations of the skin [7, 8]. Skin diseases are the main cause of the in the in the patients of HIV infection [9]. The manifestations of the skin are displaying the valuable medical identifier of HIV infection and connections have been arranged between some states of the skin & counts of the CD4 cells in the patients of HIV infection [8, 10]. The ordinary count of the CD4 cells in adolescents and adults are from five hundred to fifteen hundred per mm3 of the blood.

The count of the CD4 cell reduces gradually as the disease of HIV advances to the serious stages [11]. The low amount of the CD4 cells is linked with the high danger of the promotion of the disease in the patients of HIV infection [12]. The conditions of the skin show the progression of disease due to HIV & this can be a danger for whole life [9]. The manifestations of the mucocutaneous have an effect on the condition of general health & show the progress of the disease as well as a detection factor in the supervision of the condition of immunity of the patients [3, 6]. Many research works have concluded that relation of the skin abnormalities with infection due to HIV infection can support as a display for severe stage of the HIV infection, suppression of immunity & reduction in the counts of CD4 cells [10-19]. The main objective of this research work was to conclude the occurrence of the skin abnormalities in the patients suffering of HIV infection & its association to the counts of the CD4 cells.

METHODOLOGY:

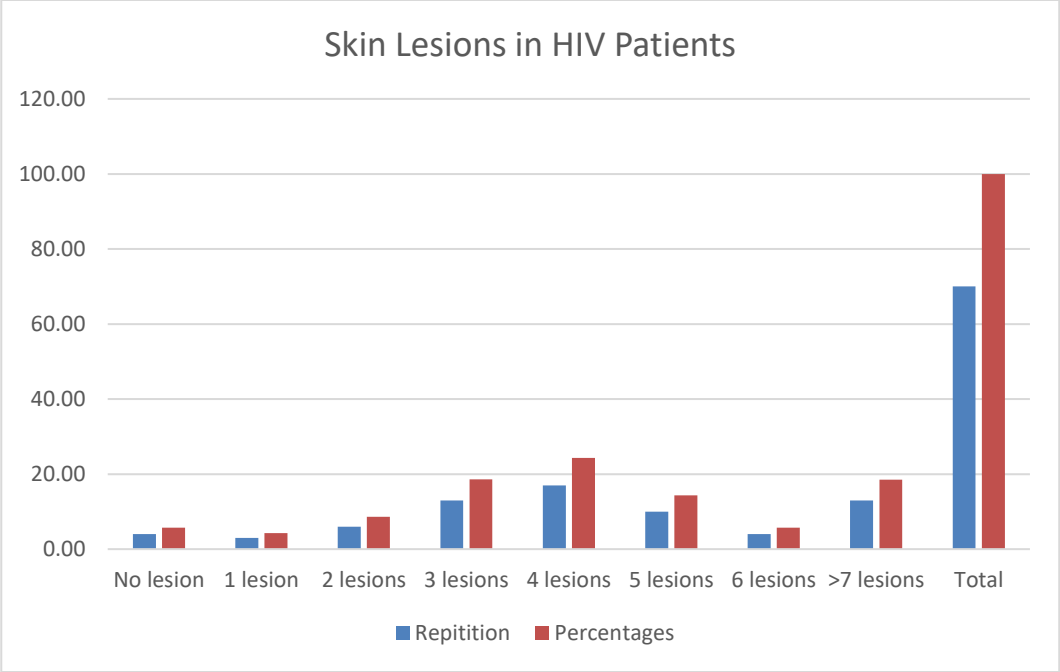
In this research we included seventy patients of HIV infection in the HIV voluntary centre in Mayo Hospital Lahore. Physical assessment was carried out to detect the all possible abnormalities of the skin. If doubtful abnormality of the skin discovered, then the biopsies of the skin were gathered for the laboratory testing. The current counts of the CD4 cells of the included patients were gathered from the documents of the patients after physical assessment. The counts of CD4 cells were evaluated by the cytometry flow [11]. SPSS software window thirteen was in use for the processing of the results. T test was in use to analyse the relation between the variables. The significant P values were smaller than 0.05. The patients who were well aware of the main objective of the research work and gave their willing were included in this research work.

RESULTS:

Among two females and sixty-eight male participants of the research work, sixty-six patients were present with at least one & forty-four patients were with 4 or more lesions of the skin as described in Table-1.

Table-I: Frequency of Skin Lesions in HIV positive patients

Skin Infections	Patient with skin infections	
	Repitition	Percentage
No lesion	4.00	5.70
1 lesion	3.00	4.30
2 lesions	6.00	8.60
3 lesions	13.00	18.60
4 lesions	17.00	24.30
5 lesions	10.00	14.30
6 lesions	4.00	5.70
>7 lesions	13.00	18.50
Total	70.00	100.00



Infection because of fungi was the most common cause of the disease in the skin abnormalities. The most common eight varieties of the problems of mucocutaneous are inflammation of the gums, unnatural lack of colour in the skin, itching, photosensitivity, seborrheic dermatitis, infection caused by fungi (candidiasis), inflammation of a hair follicle and tinea versicolor as described in Table-2. The average age of the patients was about 34.07 ± 7.6 years & average number of lesions of skin was 4.3 ± 2.4. The average count of the CD4 cells was 640.6 ± 294.8 cells per mm3. We found no association between counts of CD4 cells & both causes of the diseases of skin and total lesions of the skin. The average count of the CD4 cells was less in the patients with skin diseases due to bacteria or viruses as described in Table-3.

Table-II: Frequency of Skin Diseases in the Patients

Skin diseases		Percentages
Viral	Herpes simplex	12.90
	Herpes zoster	10.00
	Wart	7.10
	Cytomegalo	1.40
virus infection Fungeal	Candida albicans	31.40
	Pityriasis versicolor	22.90
	Tricophyton rubrum	1.40
Bacterial	Folliculitis	30.00
	Furuncle	10.00
	Skin TB	4.30
	Abscess	1.40
Neoplastic	Kaposi's Sarcoma	1.40
Parasitic	Amebiasis	1.40
Eczema	Seborrheic dermatitis	32.90
Others	Gingivitis	82.90
	Pruritus	42.90
	Photosensitivity	35.70
	Xeroderma	18.60
	Pallor	51.40
	Telogen effluvium	11.40
	Alopecia areata	5.70

	Pityrosporum folliculitis	5.70
	Long eylashes	4.30
	Aphthosis	2.90
	Prurigo-like lesions	1.40
	Bacillary angiomatosis	1.40
	Eosinophilic pustulosis	1.40
	Maculo papular lesions	1.40

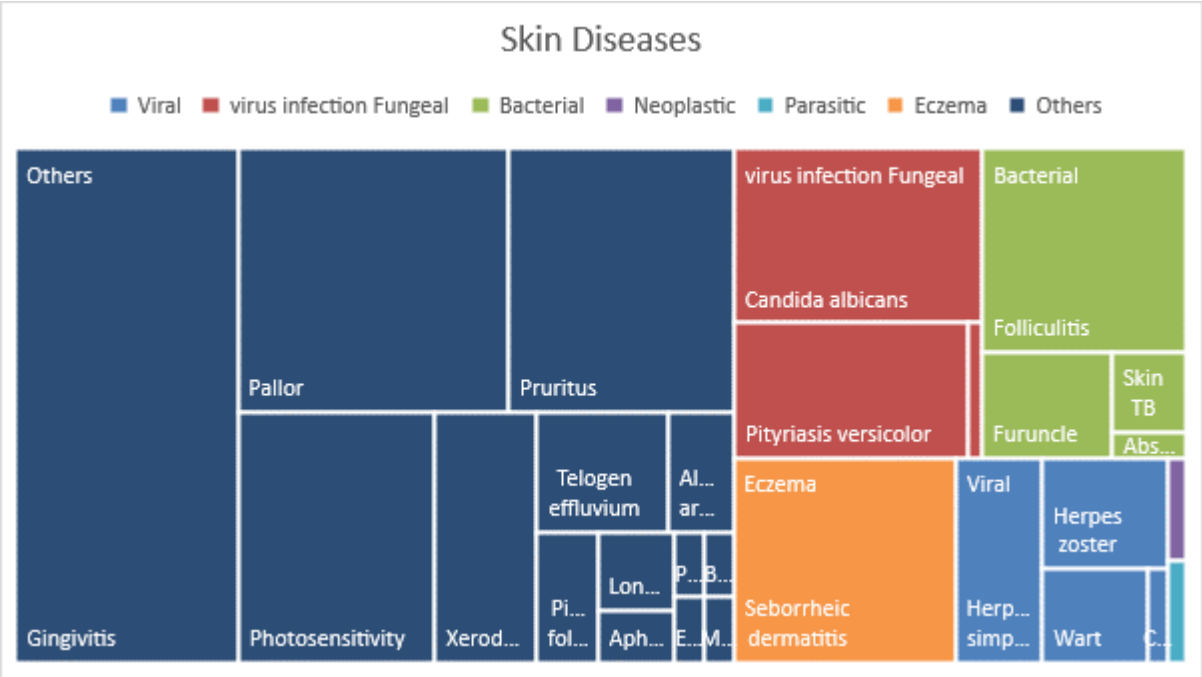
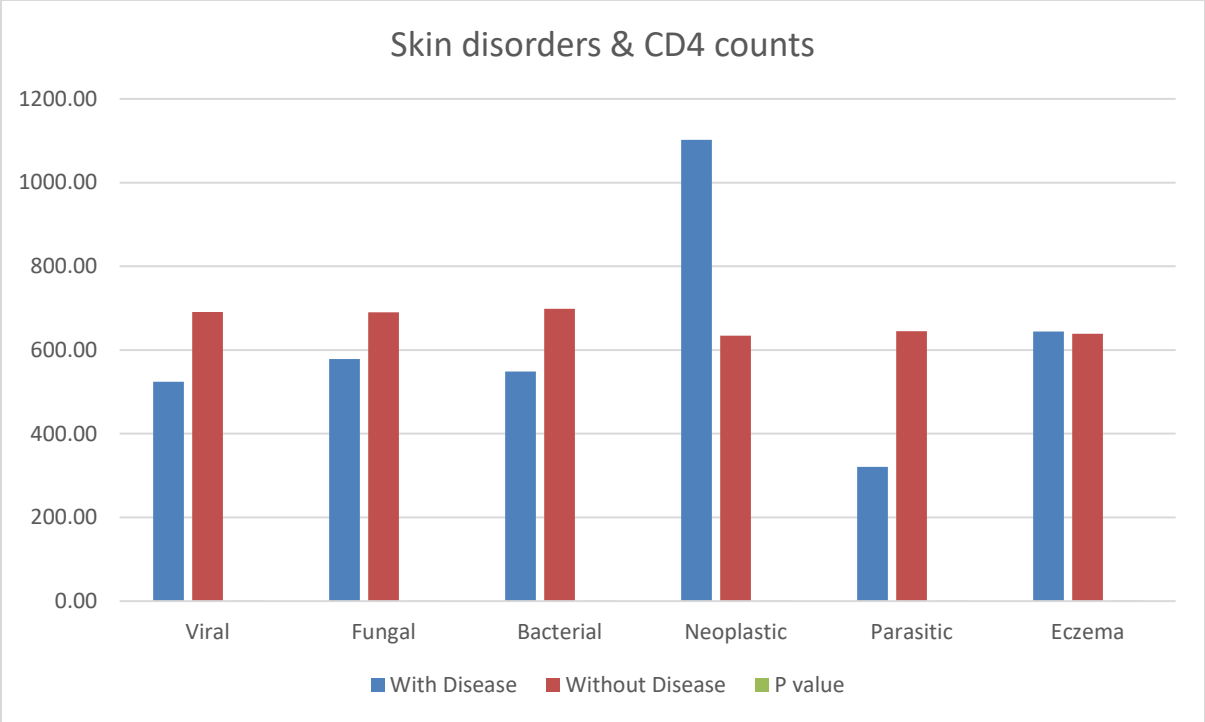


Table-III: Relationship between etiology of skin disorders and CD4 counts (cell/mm^3)

Etiology	Mean CD4 counts				P-value
	With disease	(± SD)	Without disease	(± SD)	
Viral	524.00	±295.5	690.60	± 283	0.020
Fungal	578.20	± 289.6	690.20	± 293.1	0.100
Bacterial	548.80	± 256.2	698.30	± 305.6	0.030
Neoplastic	1102.00	-	634.30	± 291.6	0.100
Parasitic	321.00	-	645.30	±294.4	0.200
Eczema	644.00	± 323.9	639.00	± 283.2	0.900



DISCUSSION:

In this research work, in more than ninety-four percent of the patients, one lesion of the skin was present at least. The occurrence of the skin diseases is different depending upon the area [13, 20, 21]. The rates of occurrence of skin abnormalities in Tanzania [16], Cameron [2], Thailand [21] and Zambia [18] were about forty-two percent, sixty-nine percent, ninety-five percent and ninety-eight percent respectively. This is due to the variation in the conditions of the health, climate & conditions of the environment. In this research work, the infections due to the bacteria and fungi were the most common cause of the disease. But in some other research works, infections due to viruses, bacteria and fungi with neoplasia were the most vital reasons of the diseases of skin [17, 19]. In Eichmann's study, eczema was common as declared by our study [22]. In a study of USA, the most states were dermatophytosis about thirty-four percent, oral hairy leukoplakia about twenty-three percent & inflammation of the follicles about nineteen percent [18].

Sivayathorn concluded many states with occurrence rate of greater than five percent including oral infection due to fungi about thirty four percent, papular eruption of about thirty three percent, seborrhoeic dermatitis in twenty one percent, herpes zoster in sixteen percent, hairy leucoplakia in about fifteen percent, herpes simplex in eleven percent, onychomycosis in nine percent, cutaneous ringworm in about eight percent, psoriasis in more than six percent & folliculitis in less than six percent patients [24]. Wiwanitkit stated in his study, xerosis in more than seventy-three percent & oral infections due to fungi in more than fifty-four percent patients were the most common abnormalities of the skin with many others with different percentages [7].

In some research works, the average count of CD4 cells were from one hundred and twenty-eight to three and fifty-three cell per mm3 [2, 8, 24, 25]. In this research work, the average count of CD4 cells was very less in the patients suffering of infections due to bacteria or viruses but in some other research works, the average counts of CD4 cells in the patients suffering of abnormalities due to virus were very high as compared to the outcome of this research work [2, 21]. This research work stated no significant relationship between counts of the CD4 cells & abnormalities of the skin disorders. We found that abnormalities of the skin can be present with high counts of the CD4 cells in the patients suffering of HIV infection. The diseases of the skin are very common in the patient of HIV infection & the rates of the manifestations are linked with the immunity condition of the patients and the progression of the disease [24].

CONCLUSIONS:

The findings of this study showed that the

abnormalities of the skin are very frequent in the patients of HIV infection. The patients with serious nature of skin diseases were suffering of low amounts of the CD4 cells. So, early diagnosis is very important to tackle this problem in the start which can increase the quality of life of the patients.

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