

CLINICAL ANALYSIS OF DERMATOPHYTES IN RELATION TO AGE, SEX AND PROFESSIONAL BACKGROUND OF NON HIV PATIENTS AND HIV+VE PATIENTS OF JAIPUR DISTRICT (RAJASTHAN)

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Dermatophytes are a group of taxonomically related fungi capable of colonizing keratinized tissues such as the stratum corneum of the epidermis, nails, hairs and the horny tissues of various animals. The majority of cutaneous infections are caused by these keratinophilic fungi (dermatophytes). The prevalence of mycoses depends upon the age, sex and professional backgrounds. Total number of 328 non HIV and 130 HIV +ve samples were collected from different age group, from the Department of Dermatology, SMS Medical College and Hospital Jaipur, such as 0-15 years age (95 non HIV, 30 HIV+ve), 15-40 years (70, 54) and above 40 years (163, 46) and different professional background were screened i.e. labours (110 non HIV, 40 HIV+ve), housewives (40, 15), farmers (79, 30), employees (45, 14) and other (54, 31). It was observed that the different keratinophilic fungus showed its dominance at different age group both in case of non HIV and HIV+ve patients, and it was found that males were more susceptible to the dermatophilic infections than the females. Along with this the frequency of superficial mycoses was observed to be highest in case of labours, both in HIV+ve and non HIV.

Keywords : Clinical analysis; Dermatophytes; HIV patients.

Jaipur district is the centre of international trade for precious and semi precious stones and therefore a large number of people visit various countries every year. All categories of males like labours, employees and even proprietors of different companies go abroad frequently for their trade promotions. Countries like Burma, Miamar, Hongkong, Singapore are the famous flash trade centre where frequency of AIDS is gradually increasing. From different countries of the world, AIDS is entering into our country and Jaipur is not spared from dreaded, non curable disease. As a result of this HIV infection, the immunity system is drastically decreased and the body becomes prone for opportunistic infection like dermatophytosis and other fungal infections.

Dermatophytes are a group of taxonomically related fungi capable of colonizing keratinized tissues such as the stratum corneum of the epidermis, nails, hairs and the horny tissues of various animals. This selective colonisation is facilitated by the fact that dermatophytes can use keratin as a source of nutrients¹.

The reasons for infections among different sex, age and different professional background persons due to public interaction, travelling, frequently handling of different types of apparatus, utensils and other useful articles or files and papers which move from place to place and hand to hand which can have constant inoculum for

superficial infections. Although a lot of work on dermatophytes has been done in India and abroad in non HIV or in general patients suffering with the infections, but this task, to compare infections in HIV+ves non HIV patients in Jaipur, Rajasthan has been taken first time in present study.

Surveys were made to different OPDs of the department of dermatology of govt. and private hospitals for the screening of different age, sex and different professional background patients and with the help of experts, 5-10 samples per week for one year were collected. The samples were collected from skin, scalp, nails, hair, genital regions, groins and oral mucosa of non HIV and HIV+ve patients in Jaipur district.

For collecting samples from skin disposable scalped blade i.e. Swann morton no. 22 and vinyle adhesive tape were used,² for nail samples scissors or nail clippers were used³ for hair samples the hair were plucked out with root intact using fine forceps. Samples from mucous membrane were collected with the help of blunt scalpal or swabs. Swabs were rubbed on the tongue with the help of sterilized forceps, aseptically.

Collected samples were transferred in SDA (Sabouraud's dextrose agar) medium containing chloramphenicol (0.05 mg/ml) and cyclohexamide 5mg/ml for suppressing bacterial and other saprophytic fungi. All

Table 1. Types of clinical infection and professional background of the non HIV patients.

Clinical type/No. of Cases studied	Labours (110)		House wives (40)		Farmers (79)		Employees (45)		Others (54) (denied to speak)	
	No.	%	No.	%	No.	%	No.	%	No.	%
1. <i>Tinea pedis</i> (80)	23	38.33	8	13.33	14	23.33	9	15	6	10
2. <i>Tinea corporis</i> (40)	14	35	7	17.50	5	12.5	9	22.5	5	12.5
3. <i>Tinea capitis</i> (64)	22	34.37	11	17.18	17	26.56	8	12.5	6	9.37
4. <i>Tinea cruris</i> (36)	11	30.55	5	13.88	10	27.77	6	16.66	4	11.11
5. Onychomycosis (60)	22	36.66	2	3.33	17	28.33	11	18.33	8	13.33
6. Candidiasis (68)	20	29.41	10	14.70	19	27.94	11	16.17	8	11.76

Table 2. Types of clinical infection and professional background of the HIV +ve patients.

Clinical type/No. of Cases studied	Labours (40)		House wives (15)		Farmers (30)		Employees (14)		Others (31) (denied to speak)	
	No.	%	No.	%	No.	%	No.	%	No.	%
1. <i>Tinea pedis</i> (22)	10	45.45	4	18.18	5	22.72	2	9.09	1	4.54
2. <i>Tinea corporis</i> (23)	9	39.12	5	21.73	4	17.39	3	13.04	2	8.69
3. <i>Tinea capitis</i> (20)	6	30	3	15	4	20	4	20	3	15
4. <i>Tinea cruris</i> (11)	4	36.36	2	18.18	3	27.27	1	9.09	1	9.09
5. Onychomycosis (16)	6	37.50	2	12.5	4	25	3	18.75	1	6.25
6. Candidiasis (38)	14	36.84	3	7.89	8	21.05	7	18.42	6	15.78

Table 3. Clinical analysis of 328 cases of dermatophytes in relation to age and sex in non HIV patients.

Clinical type/No. of Cases studied	Up to 15 years age (95)				15-40 years age (70)				above 40 years (163)			
	M (50)		F (45)		M (40)		F (30)		M (98)		F (65)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1. <i>Tinea pedis</i> (60)	18	30.00	10	16.66	11	18.33	6	10	8	13.33	7	11.66
2. <i>Tinea corporis</i> (40)	2	5.00	1	2.5	9	22.5	12	30	11	27.50	5	12.5
3. <i>Tinea capitis</i> (64)	20	31.25	13	20.31	12	18.75	5	7.81	10	15.62	4	6.25
4. <i>Tinea cruris</i> (36)	2	5.55	1	2.77	10	27.77	4	11.11	11	30.55	8	22.22
5. Onychomycosis (60)	7	11.66	4	6.66	18	30.00	11	18.33	12	20.00	8	13.33
6. Candidiasis (68)	12	17.64	9	13.23	18	26.47	11	16.17	10	14.70	8	11.76

Table 4. Clinical analysis of 130 cases of dermatophytes in relation to age and sex in HIV+ve patients.

Clinical type/No. of Cases studied	Up to 15 years age (95)				15-40 years age (54)				above 40 years (46)			
	M (19)		F (11)		M (34)		F (20)		M (33)		F (13)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1. <i>Tinea pedis</i> (22)	2	9.09	1	4.54	8	36.36	3	13.63	6	27.27	2	9.09
2. <i>Tinea corporis</i> (23)	2	8.69	-	-	10	43.47	5	21.73	4	17.39	2	8.69
3. <i>Tinea capitis</i> (20)	1	5	1	5	5	25	3	15	7	35	3	15
4. <i>Tinea cruris</i> (11)	1	9.09	-	-	4	36.36	2	18.18	3	27.27	1	9.09
5. Onychomycosis (16)	2	12.5	-	-	5	31.25	2	12.5	5*	31.25	2	12.5
6. Candidiasis (38)	5	13.15	3	7.89	8	21.05	3	7.89	13	34.21	6	15.78

species of fungi were separated, purified and stored in slants for further studies.

328 non HIV patients and 130 HIV+ve patients screened for different clinical type of infections in different professional back ground patients i.e. labours, housewives, farmers, employees and other. In this study, labours were found to be most susceptible for *Tinea pedis* with 38.33% frequency followed by onychomycosis (36.66%), *Tinea corporis* (35%), *Tinea capitis* (34.37%), *Tinea cruris* (30.55%) and candidiasis (29.41%) in non HIV patients (Table 1).

In the case of HIV+ve, *T. pedis* found highest in labours with 45.45% frequency followed by *T. corporis* (39.13%), onychomycosis (37.50%), candidiasis (36.84%), *T. cruris* (36.36%) and *T. capitis* 30% (Table 2).

Farmers were found second susceptible professional category infected by superficial skin infections due to their work type, the group of employees found to be least prone to these superficial skin infections in both non HIV and HIV+ve patients, probably to their awareness about hygienic and nonhygienic conditions for skin infections (Table 1-2).

Second categories of patients were analysed for their fungal association in HIV+ve and non HIV persons on the basis of age and sex groups. Upto 15 years of age in both males and females, the frequency of *T. capitis* (31.25%) and *T. pedis* (30%) were almost same but in the age group between 15 to 40 years, the onychomycosis was found to be greater. 30% in males and 18.33% in females, while in the age group of more than 40 years *T. cruris* and *T. corporis* with frequency of 30.55% and 27.50% in males and 22.22% and 12.5% in females were found to be more severe infected clinical type (Table 3). In the case of HIV+ves upto 15 years of age both candidiasis 13.15% in males, 7.89% in females and onychomycosis 12.5% were found to be dominating in males only which was found nil

in females. In 15-40 years of age group *T. corporis* (43.47, 21.73%), *T. pedis* (36.36%, 13.63%) and *T. cruris* (36.36%, 18.18%) showed their presence in fairly large amount both males and females. In patients above 40 years of age with HIV+ve mark candidiasis 34.21% in males, 15.78% in females, *T. cruris* (27.27%, 9.09%) and *T. pedis* (27.27%, 9.09%) were dominating clinical types (Table 4). The approximately same results were observed in non HIV patients by Sharma⁴, Iyer⁵, Karmakar *et al.*⁶, Gokhale *et al.*⁷, Patwardhan and Dave⁸, Bhadauria⁹ and Jain¹⁰.

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