Research Paper

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Dermatomycological Profile of Patients in a Tertiary Care Hospital of Western Maharashtra.

Medical Science

KEYWORDS : dermatomycoses, non-dermatophytes

Nidhi Sharma — Department of Microbiology, MIMER Medical College ,Talegaon, Pune

Abhishek Sharma — Department of Biochemistry, N.S.C.B Medical College, Jabalpur, M.P

ABSTRACT

Objective- To find the prevalence of dermatophytes and nondematophytes in cases of clinically diagnosed superficial mycoses

Material and mathods-The study was conducted on the patients attending OPD of Skin and Venereology department for various dermatological complaints. It is an observational study.

A total of 200 samples of skin, hair and nail were taken from patients clinically diagnosed as superficial mycoses.

Results- There were 200 clinically diagnosed cases of superficial mycoses of which male were 138 (69%) and female were 62(31%).Commonest age group affected was 21-30 years (50%) followed by 31-40 years (28.5%). Among 200 cases, 20(10%) patients were diabetic.

Conclusion- Our study emphasizes the need of knowing the prevalence of various fungal species causing superficial mycoses in an area so as to treat accordingly and to study the role of non dermatophytes along with dermatophytes in the pathogenesis of superficial mycoses and not merely discarding them as contaminants.

Introduction.

Infections caused by fungi are called mycoses. Fungal infections are very common in human beings. They are assuming greater significance both in developed and developing countries particularly due to advent of immunosuppressive drugs and diseases[1].

Superficial mycoses refers to fungal infections of the outermost layer of skin and its appendages like hair and nails. They are among the most prevalent of human infectious diseases.These infections are divided into two groups: the "Superficial mycoses", which includes *Pityriasis versicolor, Piedra* and *Tinea nigra* and the "Cutaneous mycoses" which includes Dermatophytoses and Candidiasis.[2]

According to the World Health Organization (WHO), these fungi affect about 25% of the world population. It is estimated that from 30 to 70% of adults are asymptomatic hosts of these pathogens and that the incidence of the disease increases with age.High prevalence of nondermatophytic mold onychomycoses has been reported from India (22%) [3,6]. Generally, these fungi exhibit a cosmopolitan profile, that is, they are found in different regions of the world with variations in the frequency, as climatic factors, social practices, migration and individual characteristics like nutrition ,hygienic habits and individual susceptibility may influence the epidemiology of dermatomyoses[4,7]. Although dermatophytoses does not produce mortality, it does cause morbidity and poses a major public health problem, especially in tropical countries like India due to the hot and humid climate.[5,3] Over the last decades, an increasing number of non dermatophyte filamentous fungi have been recognized as agents of skin and nail infections in humans, producing lesions clinically similar to those caused by dermatophytes.[6,8]. Though commonly considered as contaminants, they have been reported to colonize damaged tissues and cause secondary tissue destruction[7,9,].

Present study was undertaken with the view to find out prevalence of superficial mycoses in patients attending skin OPD with complaints of superficial mycoses,in a tertiary care rural hospital.

Material and Methods-The study was conducted from January 2013 to June 2014 for a period of one and a half year on the patients attending OPD of Skin and Venereology department for various dermatological complaints.It is an observational study.

A total of 200 sample of skin, hair and nail were taken from patients clinically diagnosed as superficial mycoses. Before collecting the sample, some information concerning the patient like Name, sex, age ,address ,occupation ,socio economic status were recorded .Site of the lesion and duration of illness were asked .Relevant history was taken. To improve the efficiency of mycological examination, history was taken of any local or systemic antifungal treatment. The lesion area was cleaned with 70% alcohol before sampling to remove contaminants .skin, nail and hair were used for isolation .

Portion of the specimen was examined microscopically using 10% potassium hydroxide (KOH) with 40% dimethyl sulfoxide. Culture methods were used with various combinations of SDA with or without antibiotic at various temp., for isolation of dermatophytic and non dermatophytic moulds and yeasts.

RESULTS-

200 samples were taken from clinically diagnosed cases of superficial mycoses attending Skin OPD, of which,skin samples were 145,hair were 36 and nail were 19.

Out of 200 cases,Male being 138(69%) and female being 62(31%).

Table -1 Out of 200 cases ,the distribution of patients in various age groups was-

0-10 yrs	11-20 yrs	21-30 yrs	31-40 yrs	41-50 yrs	51-60 yrs	61-70 yrs
12 (6%)	12 (6%)	100 (50%)	57 (28.5%)	8 (4%)	7 (3.5%)	4 (2%)

Most common age group involved was 21-30 yrs(50%) followed by 31-40yrs(28.5%).Among 200 cases ,20(10%) patients were diabetic .Among 200 cases,160 cases(80%) were from low socioeconomic status,28 cases(14%) were middle socioeconomic status and 12 cases(6%) were from high socioeconomic status.

Table -2 Clinical types of dermatomycoses in present study

Sr.No.	Clinical type	No.of cases	Percentage (%)
1	Tineacruris	40	20
2	Tineacorporis	57	28.5
3	Tineapedis	25	12.5
4	Tineacapitis	24	12
5	Tineabarbae	06	03
6	Tineamanuum	12	06
7	Tineaunguium	16	08
8	Pityriasisversicolor	20	10
9	Total no. of cases	200	100

This Table shows most common clinical presentation was Tineacorporis (28.5%).

Table 3- Dermatomycoses in relation to Age

Clinical presentation	0-10	11-20	21-30	31-40	41-50	51-60	61-70	Total
Tineacruris	-	3	19	14	1	2	1	40 (20%)
Tineacorporis	-	2	30	17	4	2	2	57 (28.5%)
Tine pedis	-	2	15	4	2	1	1	25 (22.5%)
Tineacapitis	12	1	4	5	1	1	-	24 (12%)
Tineabarbae	-	-	5	-	-	1	-	6(3%)
Tineamanuum	-	-	9	3	-	-	-	12(6%)
Tineaunguium	-	-	9	7	-	-	-	16(8%)
Pityriasisversicolor		4	9	7	-	-	-	20(10%)
Total	12 (6%)	12 (6%)	100 (50%)	57 (28.5%)	8 (4%)	7 (3.5%)	4 (2%)	200 (100%)

This table shows that most common clinical presentation indermatomycoses as an individual site was Tineacorporis(28.5%) in all age groups .

Table-4 Dermatomycoses in relation to sex

Clinical presentation	Male	Female	Total
Tineacruris	35(25.36%)	5(8.06%)	40(20%)
Tineacorporis	39(28.26%)	18(29.03%)	57(28.5%)
Tineapedis	18(13.05%)	7(11.29%)	25(12.5%)
Tineacapitis	19(13.77%)	5(8.07%)	24(12%)
Tineabarbae	6 (4.35%)	0(0%)	6(3%)
Tineamanuum	5 (3.62%)	7(11.29%)	12(6%)
Tineaunguium	5 (3.62%)	11(17.74%)	16(8%)
Pityriasisversicolor	11(7.97%)	9(14.52%)	20(10%)
Total	138(69%)	62(31%)	200(100%)

This table shows that most common clinical presentation indermatomycoses as an individual site was Tineacorporis-(28.26%) among males and(29.03%) among females. Here male affected are more than female except in TineaUnguium and TineaManuum.

Table 5 – Distribution of dermatophytes and non dermatophytes according to culture positivity.

Total culture positive(No. and %)	No.of positive patients for dermatophytes (No. and %)	No.of positive patients for non-dermatophytes (No. and %)
100	75	25

This table shows that culture positivity of dermatophytes(75%) and non dermatophytes(25%). 4 cases of Aspergillus on first inoculation ,were discarded as contaminant , as none were positive for Aspergillus on repeated inoculation from the same site of the patient .

Discussion:

In the present study , dermatomycoses was found in around 15% of the patients attending the skin OPD for various dermatological complaints which is similar to other study by (M Mishra et al(1998) [8,10] in which it was (16.2%) of all patients attending dermatology OPD .This low incidence could be due to several factors(,9,10,11) [,11,12,13]Out of 200 samples, skin samples were 145(72.5%),hair were 36(18%) and nail were 19(9.5%) of total i.e. in accordance with study conducted by (Parul Patel et al 2010) (6,7) in which skin sample were (79.80%),hair were(11.11%) and nail were (9.09%).

Among 200 cases ,20(10%) patients were diabetic similar to study from (Sweta R Prabhu et al 2013) (12,14) in which diabetics were 18.67%..

In **Table -1** Out of 200 cases ,the Most common age group involved was 21-30 yrs(50%) followed by 31-40yrs(28.5%).

In **table 2**-Among 200 clinically diagnosed superficial mycoses cases, most common clinical presentation was Tineacorporis(28.5%) followed by Tineacruris (20%) which is favoured by study from (Vikeshkumar Bhatia et al 2014) (13,16,), in which it was 39.1% and 27% respectively,. Unlike this present study,(Sweta R Prabhu et al 2013) (12,148) found most common clinical presentation as Pityriasisversicolor(31.30%) followed by Candidiasis(18.75%) and 3rd most common being Tineacruris(13.5%)..This can be explained by geographical variation and individual susceptibility to various fungal species as their study is from coastal region of Karnataka

According to **Table 3**-Most common age group involved was 21-30 yrs(50%) followed by 31-40yrs(28.5%) in accordance with (Grover et al 2003)(7,11) in which it was 39.6% and 29.7% respectively,whereas in study by (Parul Patel et al 2010)(6) most common was 21-30 yrs(29.30%) followed by 11-20 yrs(20.71%) and according to (Sweta R Prabhu et al 2013) (12,148) most common age group involved is 30-45 yrs(34.37%).

As per **Table 4**-Male:Female ratio was 2.23:1 which is in accordance with (Vyomachudasama et al 2014)(14,154) 2.17:1.

As mentioned in **Table 5** - Among total positive 100 isolates ,75% were dermatophytes and 25% were non dermatophytes which was in accordance with (PradeepNawal et al 2012)(2) in which dermatophytes were 68.4% and non dermatophytes 31.6% ,(Parul Patel et al 2010) (6,8)found dermatophytes to be 66.66% and non dermatophytes to be 33.34% respectively.

The rate of isolation of different species varies in different set up because of-1)Geographical variation,2)sample size,3)Various treatment taken by the patient before coming to OPD.

REFERENCE

1. Kumar Arun Singh, Kumar SudhirSrivastava. Aclinico-cycological study on tineapedis at Ranchi.Ind. J Veneral Dermatol.1994 .V60 :(2) : 68-71 | 2. Dr.PradeepNawal, Dr.Sachin Patel, Dr.Mitesh Patel, Dr.SumitaSoni ,Dr. Neeta Khandelwal.A Study of Superficial Mycoses in Tertiary Care Hospital.NJIRM 2012; Vol. 3(1).January-March:90-93. | 3. Ranthilaka R Ranawaka ,Nelun de Silva , Ramya W Ragunathan. Non-dermatophyte mold onychomycosis in Sri Lanka. Dermatology Online Journal.2012; 18(1):7 | 4. .NaluTeixera de Aguiar Peres et al.Dermatophytes: host-pathogen interaction and antifungal resistance.An. Bras. Dermatol. 2010. v.85 (5) Rio de Janeiro | 5. Rippon J. W:Dermatophytosis and dermatomycoses in medical mycology . The pathogenic fungi and the pathogenic actinomycetesPhiladelphia,W B Saunders 1982; 154. | | 6. .Parul Patel, SummaiyaMulla, Disha Patel, GaurishankarShrimali. A study of superficial mycosis in south gujarat region.National Journal of Community Medicine 2010;Vol. 1, Issue 2:85-8 | 7. WgCdrSanjiv Grover, Lt Col P Roy. Clinico-mycological Profile of Superficial Mycosis in a Hospital in North-East India.MJAFI 2003; 59 : 114-116 | | 8. M Mishra, S Mishra, PC Singh, BC Mishra. Clinico-mycological profile of superficial mycoses.1998.v64:6:283-85 | 9. TerborghJ.Diversity in the tropical rain forest,Scientific American books,New York.1992:31-51. | 10. Dei Cas E. and A. Vernes. Parasitic adaptation of pathogenic fungi to the mammalian hosts.Crit Rev Microbiol 1986; 13(2):173–218. | | 11. Ajello L.1977. Taxonomy of the dermatophytes: a review of their imperfect and perfect states ; 289–297. InK.Iwata(ed.).Recent advances in medical and veterinary mycology.University of Tokyo Press,Tokyo | 12. Sweta R. Prabhuetal.Clinico-mycological study of superficial fungal infections in coastal karnataka, india.. Journal of Evolution of Medical and Dental Sciences 2013; V.2, (44) ; 8638-8646. | 13. Vikesh Kumar Bhatia, Prakash Chand Sharma.Epidemiological studies on Dermatophytosis in human patients in Himachal Pradesh, India.Bhatia and Sharma SpringerPlus 2014, 3:134 | 14. Dr. Vyomachudasama.A Study of Superficial Mycosis in Tertiary Care Hospital.V 3 (3) 2014 :222-4. |