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A STUDY OF DERMATOPHYTOSIS INFECTIONS IN DERMATOLOGY CLINIC OF SINA HOSPITAL – TABRIZ

TABRİZ SİNA HASTANESİ DERMATOLOJİ KLİNİĞİNDE DERMATOFİTOZİS ENFEKSİYONLARI

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Key Words : Dermatophyte, Tinea, Trichophyton verrucosum

SUMMARY

Dermatophytes are the most prevalent infections for human and animal. These infections can cause creation of the disease in each age group and sex .

Since the dermatophytosis infections can cause physical and financial problems in human, the objective of this survey is to assess the age and sex prevalence , the site of involment of different kinds of dermatophytes in order to prevent and cure these complications .

This survey is an evaluating study of cross sectional type and is done in Tabriz Sina hospital to do the survey , some forms were prepared and different data like age , sex , profession , site of the lesions , the type of lesion, the contact record with animal were filled in them then these pieces of information were statistically analysed by SPSS Software.

Of the patients (65.2%) were male and 34.8% female . From the age incidence point of view most the patients (26.4%) were in the age group of 11-20 and the least incidence belonged to the age group of above 60 (4%).

From the type of lesion point of view 70.8% of the lesions were dry and 29.2% inflammatory . Of the patients 21.4 % had previous contact with animals and the rest had no contact record with animals . The site of lesion for tinea corporis prevalence was the most and it was the least for tinea ungium.From the culture point of view Trichophyton verrucossum had a higher incidence as compared with the others . The relation between sex prevalence and the site of lesion was not meaningful but the relation of the disease with the patient's age , contact record with the animal and profession was meaningful (pv= 0.001).

Conclusion: With regard to the obtained results it seems that the age , sex , the patient contact record with animal and profession have something to do with the creation of different types of tinea , to prevent the disease and to cure the patients , the groups that have the most risk of infection must be taken into further consideration.

ÖZET

Dermafitozlar insanlar ve hayvanlarda sık görülen enfeksiyonlardır. Yaş ve cinse göre bu enfeksiyonların oluşumu değişmektedir. Dermofitozlar insanlarda fiziksel ve ekonomik sorunlara yol açar. Bu çalışmada dermafitozların yaş ve cins prevalanslarını ve dermofitozlerın önlenmesine ve tedavisine etkili faktörlerin incelenmesi amaçlanmıştır. Bu araştırma Tabriz Sina hastanesinde kesitsel bir çalışma olarak gerçekleştirilmiştir. Dermofitozlerın yaş cins ve lezyon yeri, lezyon tipi ile ve hayvanlar ile olan teması ve kişilerin meslek özelliklerini araştıran formlar doldurulmuş ve istatistik olarak SPSS ile analiz edilmişlerdir.

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Hasta Grubunda %65,2 erkek ve 100%34,8 bayan hasta yer alıyordu: Yaş grubu göze alındığında en sık 11 ile 20 yaşları arasında %26,4 sıklıkta dermafitozis bulundu. En düşük İnsidens 60 yaş grubuna aitti (%64). Lezyon tipi değerlendirildiğin %70,8 ' inde kuru ve %22,2 inflamatuar lezyonlar saptandı.

Hastaların %21,4 ünde önceden bir hayvan ile temas vardı. Tina corporis sıklığı en sık görülen lezyon tipi ve tina ungium en nadir görülen tipidir. Trichophyton verrucossum en sık görülen kültür pozitifliği idi. Sıklık cinsiyet ve lezyon yeri arasında bir ilişki bulunamazken hayvanlar ile temas ve meslek özelliği anlamlıydı (p:0.001). Bu sonuçlara dayanarak yaş cins ve hayvanlar ile temas tinea tiplerinin oluşumunda etkili görünmektedir. Hastalığın önlenmesi ve tedavisi amacıyla bu enfeksiyonların dikkate alınması gerektiği kanısına varılmıştır.

INTRODUCTION

Dermatophytes are related fungi capable of causing skin changes of the type known as ringworm or dermatophytosis.These fungi are capable of contaminating the dead keratin of the skin , hair and nail (1), and are devided into three groups (1):

1-Microsporum2-Trichophyton3-pidermophyton.

The diagnosis method of the disease other than its clinical models is accomplished by direct observation and observing branched hyphaes in the keratinized material and sometimes for more accurate diagnosis , culture is necessary (1).

There are known differences in the incidence of dermatophytosis infections from the age and sex point of view but connection to a specific blood group for ABO has not been reported so far (2).

In general the human and animal ringworm are the global problem and the disease prevalence in each region depends on the types of existing dermatophytes in that region, envirommental cricumstances, age and profession condition .

Considering the fiancial and physical costs that dermatophytosis infections impose to the society , urgent actions must be taken to prevent the disease infection and to cure it .

The clinical shapes of fungal infections in terms of each section of body are classified as below :

I-Tinea Corporis : which is the infection of the trunk and limbs skin except the hands and feet and the lesions are as erythematous plaques with active margine and central healing (3). All three groups of dermatophytes can be its causes(3).

II-Tinea Capitis :This is the infection of scalp hair and can be seen in two types of endothrix and ectothrix (1). The lesions may appear dry along with turbid hair in which the inflammation is light or does not even exist, they are often created by Microsporums (M. audovinii) and sometimes appear as the areas with alopecia with black dots for which Trichophyton Tonsurances and Trichophyton Violaceum are the most Known causes (1).

Sometimes the lesions are in the form of kerion or a painful inflammatory mass associated with pasty induration which is created as a result of Trichophyton Mentagrophyte and Verrucosum . This case include fever, adenopathy and leukocytosis and usually leaves cicatricial alopecia.

Favuse is another type of scalp hair infection with Trichophyton Schoenleinii which is along with cup liked crusts called godet Favic which leaves scarring alopecia.

III- Tinea barbae:Which is the infection of beard and moustache in adult men and it is often seen in farmers and animal husbandmen (3) and is created by Trichophyton Verrucosum and Trichophyton mentagrophytes and it appears as alopecia with Folliculitis.

IV- Tinea Faciei:This is the face skin infection except the area of men's beard and it appears as Erythematous plaques with active margin . It's main causal fungi are Trichophyton rubrum or Trichophyton mentagrophyte(3).

V- Tinea Pedis : Which is the infection of the foot and is the most prevalent type of dermatophytosis infection in the west . It is more prevalent in men and appears as tiny, Vesicular , Viscosity and fissuring between the fingers . The main causal fungi of Tinea Pedis are Trichophyton mentagrophyte and Trichophyton rubrum(3). VI- Tinea manuum : The Fungal infection of the hand which is generally dry , exfoliating and erythematous whose causal fungi is often Trichophyton rubrum . In this case , feet are generally involved .

VII-Tinea Cruris:The grion infection which often happens in tropical and wet regions and is more prevalent in men.The lesions sometimes appear as Erythematous patches,Vesicular or pustular.It is seen mostly with Trichophyton rubrum and Trichophyton mentagrophyte(3).

VIII- Tinea unguium (onychomycosis):

The fungal infection of the nail which is created as a result of different kinds of Epidermophyton,microsporum and Trichophyton. It can appear from a change in the color of the nail to nail dystrophy (3).

PATIENTS AND METHODS

This survery which is an evaluating study from cross sectional type was carried out on the patients infected with dermatophyes who had referred to dermatology clinic of Sina hospital in Tabriz in 1381.

The characteristics of the patients such as age , sex, profession , address , the contact record with animal , the site of the lesion, the type of the lesion(dry or inflammatory) were collected in advance forms . All of the patients were sent to mycology department of the hospital . Their fungal infections were proved by direct observation from their skin smears.

The selected sample was moistented by potasium hydroxide 10% or 20% and was slowly heated so that the cells could be seperated and then they were studied under microscope by direct microscopy.

When the culture was essential , the sample were taken from the other region by cotton swab and were cultured and analyzed in S and SCC culture media .

The input statistic analysis were done by SPSS software and the results were extracted .

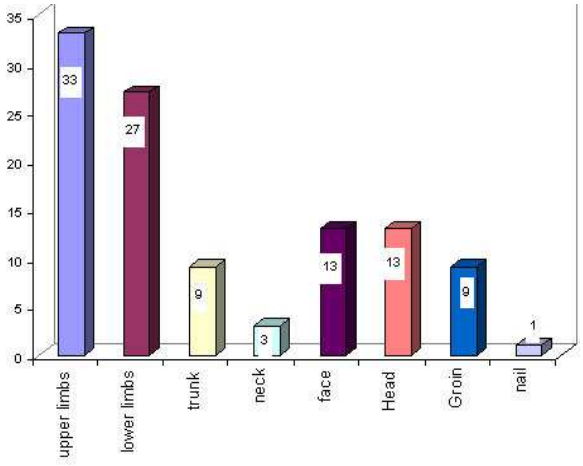

Fig –1. Skin lesion site concentration distribution in the patients with dermatophytosis infections in Sina hospital Tabriz

RESULTS

The patients were totally 182 people , all of them were studied through direct observation and culture was carried out for 85 patients . From the age point of view the patients were in the age group of 1-70 , the most involved age group was 11-20 which was 66 patients (26.4%).

From the sex point of view 65.2% of the patients were male and 34.8% female . In the male the most prevalent infection was Tinea capitis (77.8%)then Tinea Cruris (75.7%) and Tinea Pedis (69.2%) but in females the most prevalent infection was Tinea manuum (52.3%) then Tinea ungium (50%) . From the lesion site of view (graph – 1) shows the concentration distribution for skin lesion site of the patients . According to the information of this graph it is understood that the patients had skin lesion 33% in upper limbs 27% in lower limbs , 9% in trunk , 3% in the neck , 13% on the face , 13% on the head , 9% in the grion and 1% in the nail.

According to the standard text $\alpha 2 = 64.4$ with the meaning level of P= 0.000 the relationship difference of the site of lesion is meaningful and the most involved sites are related to the upper limbs and head and the least involved sites are nail and neck.

To study the effect of age group on the lesion site the Chi – square test was carried out , according to which the involment of a specific area of the body in some age groups was more than other age groups .As the head and face lesions in the age group of under 20 and hand and foot lesions in the ages above 20 were more prevalent.This relation is meaningful statistically (pv=0.001). From the lesion type of view , they were 70.8% dry, 29.2% inflammatory .

The dry lesions were mostly on the head area (87%) and the inflammatory ones were mostly in the feet area (54.8%).

Statistical study from the profession point of view in the patients infected with dermatophytes showed that there was a meaningful relation between the type of the profession and the lesion site . In some specific conditions Tinea corporis in students and housekeepers (P= 0.01) , Tinea capitis and Tinea Faciei in students and children (P=0.03), Tinea Cruris in staff , Tinea manum in houskeepers and farmers and Tinea pedis in staff and free professions were more than other cases (P= 0.000).

The result of the culture in 85 patients showed that Trichophyton Verrucosum with 32.9% was the most known kind and in the next level were Trichophyton mentagrophytes 29.4% and Microsporum Canis 20% (Table–1).

From the residence point of view 56 patients were in the villages (31%) and 126 patients were resident in cities (69%).

To study the effect of human contact with animal on the creation of Tinea ,the chi- square test was carried out , according to which human contact with animal was effective on Tinea and this relation from the statistic point of view is meaningful(Pv= 0.000) as 21.4% of the patients had contact record with animal.

According to obtained statistics on the quantity of the lesions , 62.9% of the patients had one lesion, 28.9 % of them had two lesions, 6.3% had three lesions and 1.9% had four lesions and totally 37.1% of the patients had more than one lesion.

Table 1. Concentration distribution and the prevalence percentage of different types of dermatophytes in termes of the type of the disease in patients referred to Tabriz dermatology clinic , Sina hospital

Percentage	Total	Tinea manum and Tinea pedis	Tinea ungium	Tinea cruris	Tinea faciei	Tinea capitis	Tinea corporis	Clinical shapes Funges type
20	17	-	-	-	2	7	8	Microsporum canis
32.9	28	2	3	2	3	10	8	Trichophyton verruocosum
29.4	25	10	2	3	2	8	-	Tricophyton mentagrophytes
2.4	2	-	-	-	-	2	-	Tricophyton schoenleinii
5.9	5	-	-	-	-	3	2	Trichophyton tonsurance
9.4	8	8	-	-	-	-	-	Epidermophyton flocosum
100	85	20	5	5	7	30	18	Total

DISCUSSION

Despite extensive development in medical Science, dermatophytes are the prevalent skin disease that involve people of any age group , sex and profession and causes enormous financial and spiritual damages .

Our study on the infected people showed that 2/3 of the cases were males .This fact is similar to the other performed studies(5,6) and the reason is perhaps the greater contact of males with the contaminating sources – in their working sites .

This predominance is seen in all age groups but in a study in Egypt the ratio of the girls was more than the males (4).

From the age point of view the most cases belonged to the age group 11-20 and then 1-10 which generally shows that half o the infections occur under the age of 20 which is similar to the other studies (2) and the reason for less infection in higher ages can be justified as cellular immunity system perfection and the skin fatty acid augmentation.

From the lesion type point of view in our study Tinea Corporis were the most prevalent types . This fact is similar to the other studies but in one of the classic books Tinea Pedis has been mentioned as a prevalent case(1).

In our study Tinea Cruris was in the 4th position and the men show ¾ of the total infected patients . This fact about the males has been mentioned prevalent in text books (1,3) , this might be because of the type of their covering .

The only Tinea for females in our study which was more prevalent than that of males was Tinea manum .

Its cause is not clear but the reason is probably using much washing material which leads to damaging the protective layer of Skin in Them .

In this study , Tinea pedis in males was four time as much as that of females .The reason is probably because of men's occupation and their wearing shoes for longer periods . In other studies Tinea pedis in men has been more prevalent than women(7).

Four cases of Tinea pedis have been associated with Tinea ungium . The same thing has been reported in a study in Spain (8), and it reminds the fact that when encountering Tinea pedis , the nail infection is important and must be carefully observed . Considering the above reasons the cause of high prevalence rates of Tinea ungium in males can be related to the high prevalence rate of Tinea pedis in them . In our study and also other studies Tinea ungium in males was more prevalent (2).

From the profession incidence point of view students were most involved , this can be justified as their low ages and insufficient excertion of fatty acids and their close and frequent contact with other children .

Housekeepers from the profession point of view were in the next position . In contact with animals those who had contact with animals were resident in villages.

In the cultured cases for Tinea capitis , microsporum canis and Trichophyton verrucosum included the majority

of cases . The condition was identical in Europe, Saudi Arabic and Africa according to the text books (1,11).

In Tinea corporis , Microsporum canis and Trichophyton verrucosum have also had the most prevalence , which is similar to reference books (2). In Tinea Faciei , Microsporum canis has been the main causal agent for which the reference statistic is different but the results for Tinea Cruris , Tinea ungium , Tinea manum and Tinea pedis are nearly similar to other studies (2,9, 10).

From the lesion type point of view (dry or inflammatory) and the site of lesion there is no meaningful relation in this survey .

CONCLUSIONS

Regarding the present studies fungal infections are still one of the skin prevalent diseases and this involvement is considrable in low ages and generally in the males , and from the lesion site point of view the upper limbs are the most prevalent site of infection and nail has the least prevalence for disease. The infection of groin and foot in males were more prevalent. Much attention must be paid to any of the above mentioned cases which have more risk factors. For example in the males , low ages , students or housekeepers , the cases which cause more tinea must be more noticed and close attention must be paid to the type of male covering , hygene obeyance in lower ages and the places of concentration in schools and finally financial and spiritual damages can be reduced by fighting and preventing the causing factors and early diagnosis and treatment .

Moreover the created scars are very annoying both mentally and spiritually .

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