

## A Cross Sectional Study on Clinico Epidemiological Pattern of Superficial Mycotic Infections Amongst Elderly Patients at a Tertiary Care Teaching Hospital

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### ABSTRACT

**Background:** With increase in age there is an increase in population and hence increased prevalence of dermatoses. Mycotic infections are becoming increasingly prevalent in the elderly people. The aim of the present study is to determine the clinicoepidemiological pattern of superficial cutaneous infections.

**Materials and methods:** The present cross sectional study was conducted by the Department of Skin & VD, Lord Buddha Koshi Medical College and Hospital, Saharsa, Bihar (India). Total 160 subjects with superficial mycotic infection were selected for the study. Detailed histories, complete clinical examination with investigations were performed in all the selected patients. All the data was arranged in a tabulated form. SPSS software was used for analysis. Results were expressed as percentage of total data.

**Results:** Total 63.1% (n=101) subjects who resided in rural area and 36.9% (n=59) subjects who resided in urban area. The mean duration of symptoms was 12.31 months. In 8.1% cases T pedis was isolated and in 47.5% cases T corriporis was isolated. There were 31.2% cases (n=50) who had onychomycosis. Oral candidiasis was the least common fungal infection; it was seen in 1.8% cases.

**Conclusion:** We concluded that management of superficial mycotic infections is very necessary to reduce the morbidity amongst elderly subjects. The use of empiric antifungal agents should be discontinued to reduce the risk of superinfection. In our study, 8.1% cases T pedis was isolated and in 47.5% cases T corriporis was isolated. There were 31.2% cases (n=50) who had onychomycosis.

**KEYWORDS:** Dermatoses, Mycotic, Onychomycosis.

### INTRODUCTION

With better education, health facilities there are an increase in life expectancy in today's era. There is an increase in percentage of elderly population from 5.3 to 5.7 percent and 6.0 to 8.0 percent per decade from 1991 to 2011 respectively.<sup>1</sup> With increase in age there is an increase in population and hence increased prevalence of dermatoses. Mycotic infections are becoming increasingly prevalent in the elderly people.<sup>2</sup> In elderly various physiological changes take place that make them more prone to mycotic infections. There is thinness of the epidermis and it shreds easily with mild trauma, providing a site of entry for microorganisms.<sup>3</sup>

The superficial fungal infections are generally caused by dermatophytes, candida and *Pityrosporum*. Onychomycosis is another such infection of nails which is caused by dermatophyte fungi or non- dermatophyte fungi or yeast and it accounts for about 30 % of

cutaneous fungal infections. It is the most frequent nail disorder and accounts for 50% of all onychopathies.<sup>4</sup> Tinea pedis is fungal infection of feet caused by wearing closed footwear which lead to a hot and humid environment inside the footwear and hence promoting fungal infection. It generally starts in the fourth toe space.<sup>5</sup> In a study conducted by Paillaud and his colleagues showed that the most important risk factors for the developing oral candidiasis is treatment with antibiotics.<sup>6</sup> *Pityrosporum* generally affects diabetic patients or patients on anticoagulants or immunosuppressive drugs.<sup>7</sup> Onychomycosis is generally caused by *Trichophyton rubrum* and *Trichophyton interdigitale*. They are responsible for 90% of toenail infections and 50% fingernail infections.<sup>8</sup> The aim of the present study is to determine the clinicoepidemiological pattern of superficial cutaneous infections.

## MATERIALS AND METHODS

The present cross sectional study was conducted by the Department of Skin & VD, Lord Buddha Koshi Medical College and Hospital, Saharsa, Bihar (India). Total 160 subjects were selected from all the patients reporting to the Dermatology department who were above the age of 60 years with superficial cutaneous infection were included in the study. Patients were thoroughly examined for the presence of superficial cutaneous infection. All the patients were informed about the study and a written consent was obtained from all. The study

was approved by the institute's ethical board. Detailed histories, complete clinical examination with investigations were performed in all the selected patients.

A predesigned performa was used to enter the data obtained from the patients. All the data was arranged in a tabulated form. SPSS software was used for analysis. Results were expressed as percentage of total data. Statistical tests were applied to determine the significance. Probability value of less than 0.05 was considered significant.

**Table 1: Clinical and Demographic details of the patients**

VARIABLES	FREQUENCY	PERCENTAGE
<b>Residence</b>		
Rural	101	63.1
Urban	59	36.9
<b>Gender</b>		
Male	110	68.75
Female	50	31.25
<b>Occupation</b>		
Farming	110	68.7
Others	50	31.3
Positive family history	34	21.3

**Table 2: Clinical type of infection**

ORGANISM	FRQUENCY	PERCENTAGE
T pedis	13	8.1
T corporis	76	47.5
T faciei	5	3.1
T cruris	7	4.3
T mannum	6	3.7
Onychomycosis	50	31.2
Oral candidiasis	3	1.8

## RESULTS

The data from the study shows that there were 110 males and 5 females. All the subjects were above 60 years of the age. The mean age of the study was 66.23 +/- 5.21 years. Table 1 shows the clincodemographic details of the study. There were 63.1% (n=101) subjects who resided in rural area and 36.9% (n=59) subjects who resided in urban area. The mean duration of symptoms was 12.31 months. The chief occupation of majority of subjects was farming (68.7%). There were 31.3% (n=10) who had other occupation. There were 21.3% (n=34) subjects who had a family history of mycotic infection. Table 2 shows the most frequently isolated organisms in the study group. In 8.1% cases T pedis was isolated and in 47.5% cases T corporis was isolated. There were 31.2% cases (n=50) who had onychomycosis. Oral candidiasis was the least common fungal infection; it was seen in 1.8% cases.

## DISCUSSION

Ageing leads to an increase in chronic health conditions like diabetes, neuropathy and nephropathy. Immunosuppression such as drugs, HIV infections or extensive use of antibiotics leads to an increase in incidence of fungal infections. Therefore determining the epidemiology of mycotic infection is important. With advances in age it becomes important to treat and determine mycotic infection at an early stage.

In our study, there were 63.1% (n=101) subjects who resided in rural area and 36.9% (n=59) subjects who resided in urban area. The mean duration of symptoms was 12.31 months. The chief occupation of majority of subjects was farming (68.7%). There were 31.3% (n=10) who had other occupation. There were 21.3% (n=34) subjects who had a family history of mycotic infection. It has been seen that incidence of Onychomycosis increases with age and in 20% of the cases it occurs after

60 years of age.<sup>9</sup> But various studies in India have shown a smaller mean age of 41.35 years.<sup>10</sup>

In a study conducted by Loo DS et al<sup>11</sup> reported that the prevalence of onychomycosis increases with age and becomes nearly 20% in patients over 60 years.

Rich P et al<sup>12</sup> also found that onychomycosis is the commonest nail infection, accounting for 40% of all onychopathies and 30% of all cutaneous fungal infections.

In a study conducted by Guibal et al<sup>13</sup> in France found that 5% of the fungal infections occurred in diabetics. Superficial mycotic infections are becoming a troublesome with advancing age so early recognition of the symptoms is necessary. There were few limitations in our study like smaller sample size and lesser age group people are also prone to fungal infections. They should also be taken into consideration. There was no follow up period for the treatment that was provided.<sup>13</sup>

## CONCLUSION

From the above study we can conclude that management of superficial mycotic infections is very necessary to reduce the morbidity amongst elderly subjects. The use of empiric antifungal agents should be discontinued to reduce the risk of superinfection. In our study, 8.1% cases *T. pedis* was isolated and in 47.5% cases *T. corporis* was isolated. There were 31.2% cases (n=50) who had onychomycosis.

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