Impact of Recalcitrant Dermatophytosis on Quality of Life and Financial Health: A Descriptive Study

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ABSTRACT

Introduction: Recently there has been an epidemic of recalcitrant dermatophytosis in our region which adversely impacts the physical, mental and financial health of the patients. Aims and Objectives: The aim of our study was to assess quality of life of such patients and the financial stress due to treatment of recalcitrant dermatophytosis.

Material and methods: Patients of recalcitrant dermatophytosis were included in the study. Standard DLQI proforma was used to measure the QoL and financial loss was calculated using financial burden and worry scale adapted from Patel et al.

Results: A total of 102 subjects completed the survey. Mean DLQI score was 13.5±6.10 (Range; 0-30) Significant and positive association was found between disease duration and BSA with DLQI ($P < 0.01$). Average monthly household income was Rs. 13,000 (Range; 3000-45000). Average monthly expenditure on tinea (direct plus indirect) was 2800 (Range= 800 to 17,000 Rs.), Mean financial burden was 4.230±1.96 (Range; 1-9) whereas mean financial worry score was 3.910±1.60 (Range; 1-5). Financial burden score correlated positively and significantly with DLQI score ($P < 0.05$, $rs = 0.380$, CI 95%). Also, financial worry score showed similar correlation with DLQI ($P < 0.05$, $rs = 0.408$, CI 95%)

Conclusion: Recalcitrant Dermatophytosis is adversely affecting quality of life and imposing significant financial stress on those suffering from it. Public health policy aiming to treat tinea at district level and to ease off financial burden from the shoulders of poor patients is need of the hour.

Keywords: Dermatophytosis, Tinea, DLQI, Financial Loss, Quality of Life.

INTRODUCTION

In the recent decades, there has been an appreciable increment in the cases of dermatophytosis which are increasingly more chronic, response inadequately to treatment and often recur even after completing the recommended treatment. This is commonly referred to as recalcitrant tinea or difficult to manage tinea.[1,2] Like other chronic and difficult to manage dermatosis such cases of tinea become a significant source of psychological and financial distress.[3] Due to the recalcitrant nature of the disease, predominantly contributed by patients of tinea corporis and or tinea cruris, patient often suffer from psychological issues like depression which is often accompanied by or compounded by financial burden imposed by the treatment related cost.[4] Owing to long term treatment required in most of such patients and the frequent use of newer oral and topical antifungals like itraconazole and sertaconazole which are costly, the burden on the psychological and financial health is often pronounced and ungauged.[5] There is lack of studies assessing this aspect of the disease in our region despite the prevalence of the disease being of epidemic proportions in our OPDs. With this view the study was designed to study the impact of recalcitrant dermatophytosis on their quality of life (QoL) and financial health.

MATERIAL AND METHODS

Consecutive sampling was done. All adult patients (age ≥18 years) diagnosed with dermatophytosis with more than 3-month duration, recurrence of disease after complete course of treatment or those responding inadequately to treatment commonly defined as recalcitrant dermatophytosis were included in the study.[2,4] After obtaining an informed consent, questionnaire based proformas containing basic demographic details of the patient such as age, gender, total number of family members, monthly family income, educational status, and occupation were recorded by investigator while maintaining patient anonymity. Details such as duration of disease, percentage area involvement, location of the lesions and details of previous treatment were recorded. A standard Dermatology Life Quality Index (DLQI) questionnaire was read out to the patient in a vernacular language and replies were recorded. Financial loss was calculated by recording monthly household income and expenditure incurred with regards to dermatophytosis both direct (money spent on purchasing medicines, tests etc.) and indirect (travel expenses etc.) Financial worry scale adapted from *Patel et al*. was used by recording response from patient on a scale of 1–5 with 1 being "no worry" and 5 being "very much worried" [Table 2].[4] Patients having other concomitant skin disorders or on medication for other medical or surgical illness, pregnant and lactating females, subjects with history of major surgical or medical illness in preceding 3 months, and patients with disease duration of <3 months and treatment naive patients were excluded from the study.

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STATISTICAL ANALYSIS

Data was entered and analysed using Microsoft Excel and Statistical Product and Service Solutions (SPSS 22.0). Numerical data was calculated in the form of mean, standard deviation and categorical data as frequencies and proportions. Chi square test was used to test association between categorical variables and t-tests for continuous variables. Correlational analysis was done using Spearman's correlation coefficient. All statistical tests were two-tailed and performed at a significance level of p = 0.05.

RESULTS

One hundred two subjects meeting the study criteria consented for the study and information from these patients was recorded in predesigned proformas by the investigator. Males outnumbered females in this study (male = 62, female = 40). Mean age of the subjects was 32.9 ± 9.8 years [Table 1]. Most common variants of tinea observed among patients were tinea corporis and cruris coinfection (56.4%) followed by tinea corporis alone (16.3%) while tinea cruris alone was seen in (6.24%) patients. Other variants included tinea facei, manum, pedis etc. contributing to 21.06% of total cases.

Impact on Quality of Life (QoL): DLQI impact was calculated as shown in Table 3.[5] Mean DLQI score among of the patients was found to be 13.50±6.10. BSA and duration of the disease showed significant association with DLQI (p< 0.01, CI = 95%). However, no significant association was observed between parameters like age and gender with DLQI (P = 0.230).

Impact on financial health of individual: Average monthly

Feature	(n = 102)	No (%)
Age (yrs.), mean±SD Range	32.9±9.8 18-65 years	
Gender	Male	62 (60.7%)
	Female	40(39.3%)
BMI, Mean±SD Range	23.68±4.6 17.65-29.67	
Duration, Mean ± SD (in months) Range	8 ± 4 3 months-4 years	
SD; standard deviation		

Table-1: Basic characteristics of the study population.

Survey item to assess financial burden and worry	
A) Burden	
How your dermatophytosis treatment has affected your financial position. Please tick all of the responses that are applicable.	
1	I had to use savings
2	I had to borrow money or take out loan.
3	I could not make payments on other bills.
4	I cut down on spending for food and/or clothes.
5	I cut down on spending for health care for other family members.
6	I cut down on recreational activities.
7	I cut down on expenses in general.
8	I had to delay/interrupt treatment because of financial problem
9	Cost was the barrier I chose to self-medicate/consulted general practitioner.
B) Worry	
How much do you worry about financial problems that have resulted from your dermatophytosis (ring worm infection) and its treatment?	
1	(Not at all)
2	
3	
4	
5	(Very much)

Table-2: Questionnaire to assess financial burden and worry

DLQI	Impact	Number of patients (n=102)	Percentage
0-1	No impact	3	2.9
2-5	Small impact	12	11.8
6-10	Moderate impact	25	24.5
11-20	Very large impact	48	47.1
21-30	Extremely large impact	14	13.7
Total		102	100.0

Table-3: DLQI score and impact among study participant

income of the household from all sources was calculated to be around Rs. 13,000 (Range; 3000-45000). Average monthly expenditure on tinea (direct + indirect) was 2800 (Range= 800 to 17,000 Rs.), Mean financial burden was stood at 4.230±1.96 whereas mean financial worry score stood at 3.910±1.60. Financial burden score correlated positively and significantly with DLQI score ($P < 0.05$, $rs = 0.380$, CI 95%). Also, financial worry score showed similar correlation with DLQI ($P < 0.05$, $rs = 0.408$, CI 95%).

DISCUSSION

Dermatophytosis in the recent decades has evolved into an epidemic owing to changes in the nature of the disease including frequent recurrences, extensive involvement of body, treatment resistance leading to its increased presence in dermatology OPDs. Overall, this new avatar of tinea characterised by recalcitrance and high treatment cost has had adverse effects on psychological health of patients and imposed financial stress on patients in particular and the health system in general.

Our study demonstrated a 'very large' impact on QoL due to dermatophytosis with a mean DLQI of 13.50. Previous studies from India reported similar mean DLQI of 12.25 and 13.41.[4,6] It signifies that dermatophytosis has in recent times become a huge public health problem with remarkable impact on psychological wellbeing of those suffering from it. Lesions which are present on visible parts of the body like face (tinea facei) and the urge to itch and scratch at work and public places can contribute to embarrassment among patients and further discourage such individuals from active participation in social and recreational events. Our study also found significant and positive association between obesity (BSA) and disease duration with the DLQI score. Previous studies with other dermatological diseases such as vitiligo and psoriasis have also found association between these dermatoses and QoL.[7,8]

Average per capita income of an Indian citizen is around 10,400 Rs./month.[9] In our study, average income of the household from all sources was calculated to be around Rs. 13,000 (Range; 3000-35000). According to government of India data, below poverty line mark lies at 99,960 Rs. Per year for urban population.[10] India being a developing country, most people have limited money and resources at hand. Dermatophytosis which is at epidemic proportions now owing to widespread disease involvement, recalcitrant nature of the disease, occurrence of disease in multiple family members and costly treatment often leaves many families cash strapped. Over and above this, unscientific treatment by quacks or wrong diagnosis by general practitioners adds to treatment resistance and imposes additional financial burden on the patients. Our study demonstrated significant and positive correlation of DLQI with financial burden and financial worry scores, thus highlighting the adverse effects of dermatophytosis on the financial wellbeing which in turn causes attrition in the quality of life itself.

Availability of dermatologists at peripheral health centres at least at all district hospitals can help in prompt recognition of tinea and in its timely and correct treatment. Beside this availability of medication of tinea from government hospitals free of cost can help in reducing the financial burden imparted by the disease.

CONCLUSION

Dermatophytosis has huge impact on the quality of life of the patients which is often understated. Besides this the financial burden imposed on the patient due to costly medicines, longer treatment duration and repeated visits required to the hospital is often responsible for treatment discontinuation and negatively affecting the quality of life.

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