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Effect of Pharmacist's Intervention in the Quality of Life of Patients with Atopic Dermatitis - A Pilot Study

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I. John Wesley[1]*, Amritha M.S[2], Resmi Vijayasenan[2], Ranjeth. R[2]

1. *Professor, Head of the Department, Pharmacy Practice, Sree Krishna College of Pharmacy and Research Centre, Parassala, Thiruvananthapuram, Kerala, India.*

2. *5th Pharm.D students, Department of Pharmacy Practice, Sree Krishna College of Pharmacy and Research Centre, Parassala, Thiruvananthapuram, Kerala, India.*

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ABSTRACT

Background: Atopic dermatitis is a chronic skin condition that is variable in age and onset. Therefore, in order to improve the quality of life of patients, it is essential to provide counseling so as to improve compliance with the medications and hence disease control. **Methods:** This study was carried out in 28 patients who were diagnosed with atopic dermatitis from the Dermatology Department of a tertiary care hospital at Thiruvananthapuram. Informed consent was obtained. They were divided into two groups namely the tacrolimus group (14) and corticosteroids group (14). Counseling was provided to both groups and the Dermatology Life Quality Index (DLQI) scale was used to score. The collected data has been analyzed and presented. **Results:** A total of 28 patients with Atopic Dermatitis fulfilling the study criteria were included for analysis. The predominance of atopic dermatitis is seen in females than in males and in the age group of 21 – 30 years. Using paired t-test, the statistical analysis clearly depicts that there is a clear shift from the severe effect on the quality of life to a milder effect in both groups separately as well as combined with significant p-value < 0.001. However, there is no significant change between the groups. **Conclusions:** From this study, it is concluded that there is betterment in the quality of life of patients with atopic dermatitis both pre and post counseling. Pharmacist's intervention in the form of counseling is hence an integral factor in improving the quality of life of patients with atopic dermatitis.

INTRODUCTION

Atopic dermatitis is an itchy, chronic, or chronic relapsing, inflammatory skin condition. The rash is characterized by itchy papules [occasional vesicles in infants] which become excoriated and lichenified and typically have a flexural distribution. The eruption is frequently associated with other atopic conditions in the individual or other family members [1-3].

Etiological factors mainly include genetic influence. Various studies have demonstrated this in detail. Examples include susceptible loci like 1q21 [4], 3p24-22[5], etc. Abnormal epidermal barrier function is a well-recognized clinical association of atopic eczema and until recently it wasn't clear whether the dry skin was only a consequence of the underlying immune inflammatory response genetic defects in filaggrin gene has been associated with early onset of atopic dermatitis, a worse prognosis, and persistence of disease into adulthood [6-8]. Variations in the SPINK5 gene have also been associated with atopic dermatitis [9-11]. Cord blood IgE is high in babies whose mothers are atopic or have high IgE, whereas paternal atopy or raised IgE are not associated with raised cord blood IgE indicating the risk is higher in maternal atopy [12-13]. Exposure to alcohol, cigarettes and other pollutants has attracted attention, but none has emerged as a major factor. The hygiene hypothesis is another factor [14, 15]. There are differences in the prevalence of allergic diseases among people living in an urban and rural set up [16 – 19]. Biopsy of developing lesions of atopic dermatitis reveals that T-cells infiltrate the skin in the early disease process [20, 21]. Deficiencies of certain immunoglobulins have also been associated with the development of atopic dermatitis. Altered sensations associated with the neuropeptides can result in intense itching and aggravates this condition. Clinical features in adult phase are similar to in later childhood with lichenification of flexures and hands, nipples, lips [22]. Diagnostic criteria include the Hanifin and Rajka criteria [23]. Diagnosis is usually aided by estimation of total serum IgE, specific radioallergosorbent tests [RASTs], prick tests and patch tests most important [24, 25]. Treatment usually involves the reduction of trigger factors like irritants, habitual scratching, excessive heat and sweating, food allergens, airborne allergens, stress, etc., Topical therapy [bathing and emollients] [26, 27], topical corticosteroids, topical calcineurin inhibitors like tacrolimus, pimecrolimus [28]. Oral therapy includes Antihistamines like H1 receptor antagonists like promethazine, trimeprazine [29], antibiotics to relieve from exudation and pustule formation. Other approaches include interferon gamma, intravenous

immunoglobulins, montelukast. Phototherapy includes UVB, narrowband UVB, medium and high dose UVA1 and PUVA [30-34]. Desensitization [allergen specific immunotherapy] is also advised but has limited part in management [35].

Quality of life (QOL) is perceived as the quality of an individual's daily life, that is, an assessment of their well-being or lack thereof. QOL is a broad concept that includes such things as the standard of living, community, and family life [36]. Health-related QOL (HRQOL) assesses qualities directly related to the disease as well as those that are independent of the disease but may be affected by it. The literature on QOL has increased substantially over the past decade, whereas before, medical concerns were mainly centered on issues.

Dermatology Life Quality Index [DLQI] is used here. This present study aims to assess the effect of counseling on patients with AD and the objective is to evaluate the QOL of the patients both pre and post counseling.

MATERIALS AND METHODS

2.1 Data Source. All relevant information regarding the study was collected from case records and direct interview with the patients. Data from patients or caretaker was collected by using a specially designed proforma. Quality of life of the patients was assessed by using DLQI scoring. The study was approved by the Research Ethics Committee of Cosmopolitan Hospital, Thiruvananthapuram.

2.2. Study Population: Patients were taken from the Dermatology department of Cosmopolitan Hospital. An age group of 16-70 years was recruited. Informed consent was obtained. The study was conducted for a period of 2 months.

2.3. Assessment of the effect of counseling: Patients with atopic dermatitis, who had received prescriptions for atopic dermatitis drugs including tacrolimus and corticosteroids. Counseling was provided to the patients regarding the disease. Assessment of the quality of life of patients before and after counseling was done using DLQI scores.

2.4 Statistical Analysis. Effect of counseling in both groups of Tacrolimus and Corticosteroids was done using the paired t-test.

RESULTS

In this study, a total of 28 subjects participated of which 14 subjects were allotted to the Tacrolimus group and 14 subjects to the Corticosteroids group. 75% (21) of the subjects were females and 25% (7) were males.

In the tacrolimus group, 11(78.6%) subjects were females and 3(21.4) subjects were males. In the corticosteroids group, 10(71.4%) subjects were females and 4 (28.6%) subjects were males.

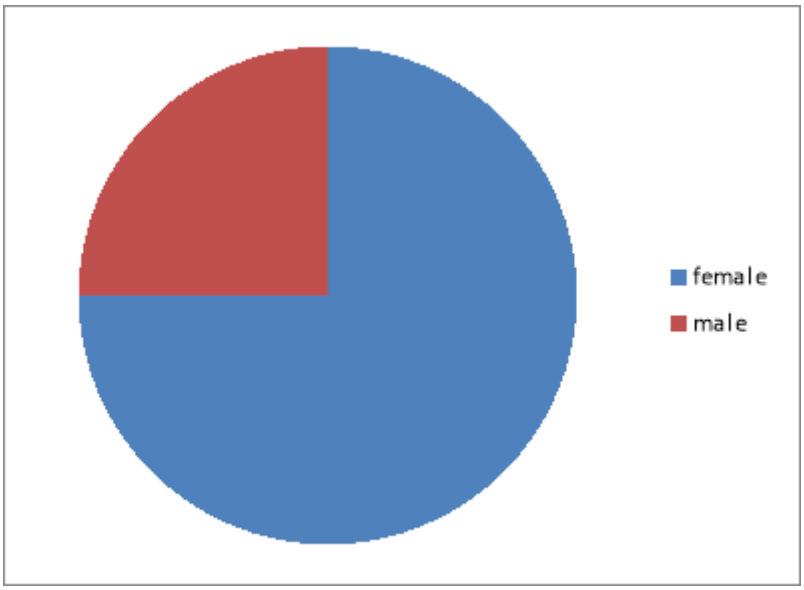

Figure 1: Distribution of subject

In this study, subjects of the age range of 16-70 years were included and then categorized into 6 groups. It was observed graphically that a number of subjects were in the age group of [21 – 30] years (28.6%) and least in the age group of [41 – 50] years.

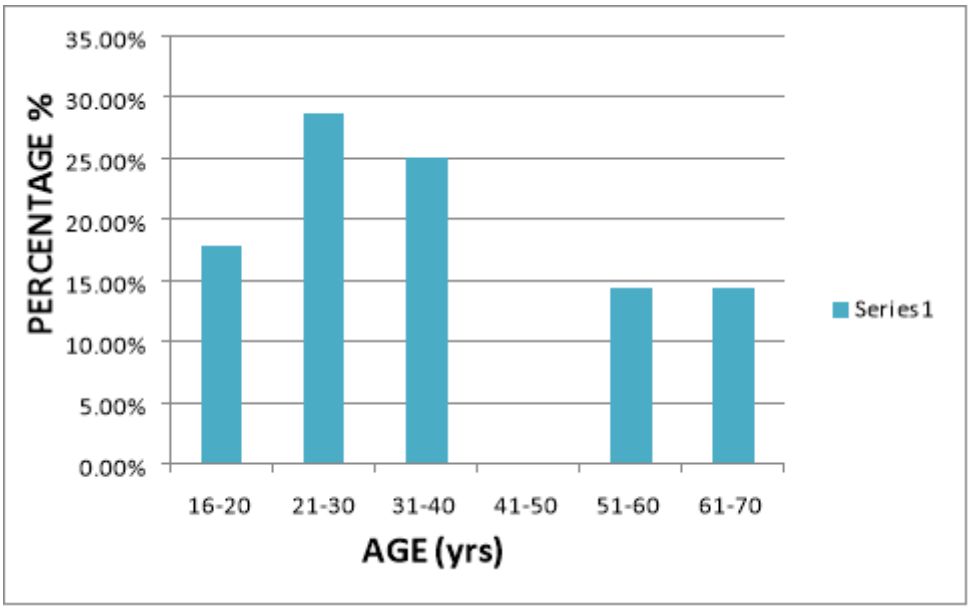

Figure 2: Distribution of subjects by age

The plan of the study was to compare the quality of life of patients. Here the patients taking tacrolimus and corticosteroid were combined to form a single group and the quality of life before the counseling and after the counseling was evaluated and compared using the t-test.

EFFECT OF COUNSELLING ON QUALITY OF LIFE

Table 1: Effect of counseling on quality of life

GROUP	BEFORE COUNSELLING	AFTER COUNSELLING	PERCENTAGE CHANGE	t-TEST	P-VALUE
TACROLIMUS	2.92	1.07	64.72	13	P<0.001%
CORTICOSTEROIDS	2.85	1.35	54.3	10.81	P<0.001%
TOTAL	2.89	1.21	58.131	16.21	P<0.001%

From the table, there is evidence that through paired t-test, there is a significant change in the quality of life due to counseling in the tacrolimus group($p<0.001$). Before counseling, QOL of subjects in the Tacrolimus group was severely affected (2.92). Post counseling, significant improvement in QOL was observed (1.07) which indicates a clear shift from severe to mild effects. Similarly, a shift from severe effect (2.85) to mild effect (1.35) on the QOL was observed in the Corticosteroid group.

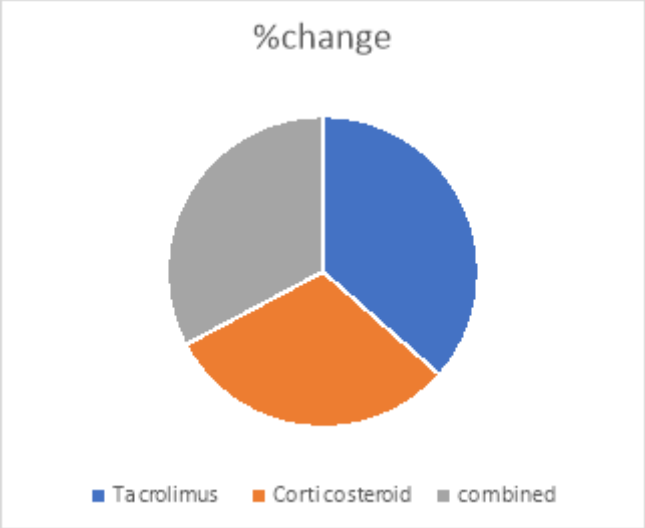

Figure 3: Percent change observed

It is evident from the study that the quality of life of patients can be increased from severe to mild. In this study, a positive outcome that the quality of life of the patient will increase on both group and in the combined group is observed. However, there is no significant change between the groups.

DISCUSSION

In the study done by Mozaffari H et al [37], 86 patients with AD who were referred to an immunology clinic and 98 patients [> 4 years old] attending a general clinic acting as controls [without any chronic or severe disease] participated in this survey. Physician filled the Children's Dermatology Life Quality Index [CDLQI] questionnaire for individuals more than 16 years via face-to-face interview. There were significant differences between the mean of CDLQI score and DLQI score in case and control groups ($p<0.001$). For children and adults with AD, the mean score of each question was significantly higher than in the control group ($p<0.001$).

In the cross-sectional study of 132 outpatients with AD by Maksimovic N et al [38], to assess the QOL, Short Form 36 (SF-36), Dermatology Life Quality Index (DLQI) and Children's Dermatology Life Quality Index (CDLQI) were administered. Increasing disease severity was associated with greater impairment in QOL in both children and adults. Our study found the influence of stressful life events on the emotional role of AD patients. These results demonstrate that AD influences health-related QOL, especially in children.

According to the study done by Agner T et al [39], a total of 416 patients with hand eczema from 10 European patch test clinics participated in the study. Data on QOL were obtained from a self-administered questionnaire using DLQI. No significant difference was found between males and females with respect to QOL (DLQI median values and 25/75 percentiles for males and females being 7.0 [3-13] and 8.0 [3-14] respectively), although males were more severely affected than females [$p<0.025$]. A significant positive correlation was found for hand eczema severity and age ($p<0.001$), while no significant correlation was found for QOL and age. QOL was found increasingly reduced when sick leave was getting higher [$p<0.001$]. A statistically significant correlation between QOL [as measured by DLQI] and hand eczema severity as measured by HECSI was found [$p<0.001$]. No significant difference in QOL was found between males and females, in spite of significantly more severe eczema in males, indicating that QOL I female patients is more easily affected.

Holm et al [40] measured HRQOL in patients with AD to analyze discriminant, divergent, and convergent validity by examining the association between various QOL methods and to examine the association between disease severity assessed by an objective Severity Scoring of Atopic Dermatitis (SCORAD) and QOL. HRQOL was assessed at two visits at a 6-monthly interval in 101 patients with Dermatology Life Quality Index (DLQI) or Children's DLQI (CDLQI)], one generic instrument (SF-36), and three visual analog scales of severity and pruritus. Objective SCORAD was used to measure disease severity. Thirty-five children aged 3–14 years were included. Results showed that patients with AD had significantly lower QOL than healthy controls and the general population. DLQI/CDLQI, pruritus, and patient and investigator overall assessment of eczema severity was significantly ($p < 0.0001$) and positively correlated with SCORAD, while the generic questionnaire showed only poor correlation. The authors concluded that AD has an impact on HRQOL.

Another study that included 239 AD patients aged 4–70 years showed that patients with AD had inferior scores on vitality, social functioning, and mental health subscales compared with individuals in the general population [40]

An international study performed in the Czech Republic, Singapore, Brazil, the Netherlands, and South Korea on QOL and family QOL in children with AD found a similar impact of the disease as rated by parents of 419 children under the age of 4 years in all countries [41]

CONCLUSION

With increasing worldwide prevalence, atopic dermatitis has major social and financial implications for individuals, health-care providers, and society as a whole. The good news is that even if symptoms of AD can be uncomfortable and at times difficult to control, the disease, in general, can be successfully managed and in some cases even prevented [42]. Individuals affected by AD can lead almost normal lives. From this study, it is concluded that there is betterment in the quality of life of patients both pre and post counseling. Hence pharmacists play a very crucial role in improving the quality of life of patients with atopic dermatitis through proper counseling and hence this indicates that counseling is an integral factor in improving QOL. However, larger sample size and a longer duration of study are necessary for better and reliable results.

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