

Original article

Quality of life among patients with hand eczema in Iran

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Abstract: *Background* — Hand eczema is among the most common dermatological diseases with a chronic course. It has undesirable psychological, social and occupational outcomes affecting patient's quality of life. *Objective* — The aim of the present study was to study the quality of life of patients with hand eczema in an Iranian population. *Methods and Results* — This cross-sectional study was performed on 196 patients with hand eczema through clinical exam and filling specific questionnaires. Hand Eczema Severity Index (HECSI) and Dermatology Life Quality Index (DLQI) were used for studying the disease severity and quality of life, respectively. Mean±SD of HECSI and DLQI scores were 57.05±48.85 and 14.80±5.79 respectively. In 94% of cases, hand eczema had significant effect on patients' quality of life. Based on DLQI, symptoms, feelings and personal relationships were the most affected aspects. There was a significant positive relationship between DLQI and HECSI scores ($p<0.05$). No significant difference was found in the quality of life based on age, sex and the disease duration. *Conclusions* — Since hand eczema significantly affects the quality of life, beside medical treatments, attention to psycho-social and occupational outcomes of the disease is highly recommended.

Keywords: hand eczema, quality of life, Dermatology Life Quality Index

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Introduction

Hand eczema (HE) is one of the most common dermatological diseases with a chronic course. It is also the most common work-related dermatological disease occurring due to inflammation of hand skin [1, 2]. Hand eczema is more prevalent in women than men with the highest prevalence rate in young women [1, 3]. It has point prevalence of 4% and its 1-year prevalence is approximately 10% reaching to 15% during the lifetime [4]. The prevalence of hand eczema in different occupational groups has been reported from 2.9% to 32% [5].

Hand eczema is a chronic disease and is often associated with intermittent symptoms [6]. The disease is presented as erythema, vesicles, popules, fissures, scaling and hyperkeratosis accompanied with itching and pain. According to the estimations, 5-7% of cases are severe and 2-4% is resistant to topical medications [6].

Lesions on hand, in addition to their effects on daily life, due to the chronic nature of the disease and also periodic relapse cause domestic, psychological, social and occupational undesirable outcomes [1, 6]. Among problems following hand eczema, mood and sleep disorders, anxiety, low self-esteem and social phobia can be mentioned [1, 7]. This disease not only imposes treatment and health care expenses on the patient [8], as the most common work-related dermatological disease, causes long sick leave, changes of work conditions and even job loss [6, 9]. Therefore, it imposes a lot of economic loss on both patients and the society [1].

Hand eczema, due to its high prevalence and poor prognosis, has been considered as a public health problem [10] affecting the quality of life [11]. The quality of life in hand eczema (job-related) patients has been mentioned similar to that of patients with atopic dermatitis or psoriasis [12-14]. Although there have been already several studies about the quality of life in patients with hand eczema, most of them are related to European countries and few studies have been done in other parts of the world. Moreover, there is no definite information about the prevalence of hand eczema in Iran and it has been only identified that hand eczema has the highest prevalence rate (68.4%) among patients with allergic contact dermatitis [15]. There has been also no measure in regard to improving the quality of life of these patients. The aim of the present study was to investigate the quality of life of patients with hand eczema in Iran.

Patients and Methods

This cross-sectional study was performed in Kerman (the center of the largest province in Iran). A total of 196 hand eczema patients over 16 years old referred to dermatology clinics in private sector and educational hospitals affiliated to Kerman University of Medical Sciences were enrolled into the study.

The quality of life was assessed with Dermatology Life Quality Index (DLQI) which is a dermatologic-specific questionnaire for evaluating the quality of life [16] and has been proved to be useful for studying the quality of life in hand eczema patients too [17]. The questionnaire contains 10 questions evaluating 6 aspects of

daily life during the last seven days: symptoms and feelings, daily activities, leisure items, work and school, personal relationships and treatment. Each question is scored from 0 to 3 and the total score of DLQI is calculated by summing the scores of questions. Zero as the minimum score shows no effect on the quality of life and 30 as the maximum score shows high effect on the quality of life. Higher score is evident of more impairment of quality of life and based on this scoring, the effect of this disease on the quality of life can be classified in five groups of no effect, mild effect, moderate effect, severe effect and very severe effect [18]. The Persian version of this questionnaire with confirmed validity and reliability is available [19].

The severity of disease was assessed using Hand Eczema Severity Index [20]. In this index, each hand is divided into five areas (finger tips, fingers, palm, hand back and wrist). Then each area is evaluated in regard to clinical signs (redness, induration, vesicle formation, fissure formation, and edema) and scored from 0-3; Healthy skin without any change gets zero, mild skin change gets 1, moderate skin change gets 2 and severe change gets 3. The extent of lesions in each area of each hand is scored from 0 to 4 too; no lesion=0, 1-25%=1, 26-50%=2, 50-75%=3 and 76-100%=4. For each five areas of hand, the scores of severity of skin alterations is multiplied by the score of lesion extension and finally the total of scores obtained for hands' five areas shows the total HECSI score that is ranged from 0 to 360 and the higher score is evident of more severe disease [20].

The present research was approved by Ethic Committee of Kerman University of Medical Sciences. At first the aim of study was explained for all participants and after obtaining their oral consent they have been studied. All subjects were ensured of the confidentiality of their information.

Data analysis was performed through SPSS17 and using t-test, ANOVA and Pearson correlation coefficient with statistical significant level of $p < 0.05$.

Results

In the present study, 196 hand eczema patients were studied. Most subjects were females (74.5%). Mean±SD age of patients was 32.38±10.73 years ranged 17-80 years. In regard to disease duration, most cases (45.5%) have mentioned more than one year. Mean±SD HECSI score of participants was 57.05± 48.85 and in 50% of patients HECSI score was equal or less than 46. Inter quartile range was 64 and in 15.8% of patients this score was 100 or over (Table 1).

Mean±SD DLQI score was 14.8±5.79 (in the range of 1-26). In half of the patients, the DLQI score was 15.0 or less. Based on this score, the effect of hand eczema on quality of life was very high in 43 patients (17.3%), high in 105 ones (53.6%), moderate in 47 ones (24%) and only in 10 patients (5.1%) hand eczema had mild effect or was without any effect on the quality of life (Table 2). The highest effect was observed in symptoms and feelings aspects followed by Leisure (Table 3).

DLQI and HECSI scores of females were higher than those of males (15.6 vs. 13.74 and 58.95 vs. 51.48, respectively), but these differences were not statistically significant. The score of quality of life showed no significant difference based on marital statuses and disease duration. There was a significant direct relationship between DLQI and HECSI scores ($p < 0.001$, $r = 0.48$). There was no significant relationship between the score of quality of life and patients' age.

Table 1. Sociodemographic and clinical characteristics of the patients

Variable	
Age (year), mean±SD (Min-Max)	32.38±10.74 (17-80)
Male sex, no.(%)	146 (74.5)
Marital status (Single / Married), no.(%),	68 (34.7) / 128 (65.3)
Disease Duration, no. (%)	
≤1 month	48 (24.5)
2-6 months	34 (17.4)
7-12 months	24 (12.2)
1-5 years	44 (22.4)
>5 years	46 (23.5)
HECSI Score	
mean±SD (Min-Max)	57.05±48.85 (4-360)
median (25 and 75 percentiles)	46 (20-84)
DLQI Score	
mean±SD (Min-Max)	14.8±5.79 (1-26)
median (25 and 75 percentiles)	15 (10-19)

Table 2. Impact of hand eczema on quality of life patients according DLQI scores

	no. (%)
no effect at all on patient's life	2 (1.0)
small effect on patient's life	8 (4.1)
moderate effect on patient's life	47 (23.5)
very large effect on patient's life	105 (53.6)
extremely large effect on patient's life	34 (17.3)

Table 3. DLQI Score in each domain

DLQI domains	Mean ± SD
Symptoms and feelings	3.42 ±1.24
Daily activities	2.50 ±1.50
Leisure	2.88 ±1.52
Work and school	1.73 ±1.06
Personal relationships	2.20 ±1.21
Treatment	2.01 ±0.80

Discussion

According to the results of the present study, hand eczema has significant effect on the quality of life of subjects. Based on the interpretation of DLQI questionnaire score, mean DLQI score obtained in the present study (14.8) shows that hand eczema has affected the quality of life of 94% of our patients significantly. This finding, in comparison to similar studies, shows lower quality of life in our subjects; because, in two separate studies in Denmark mean scores of DLQI have been reported 5.5 and 6.0 [11, 13] and in study in Sweden, it has been 7.4 [14].

In a multicenter study performed in 10 Europe clinics by Agner et al, in 50% of studied patients with hand eczema, the DLQI score has been ≤8 [17].

In Van Coevorden study in Poland the quality of life of patients before medical interventions has been evaluated too and the average score of DLQI has found to be 9.7±6.6 [21].

It seems that the results of Bohem et al study in Germany are more similar to our findings. According to the mentioned study, mean DLQI score has been 11.1±6.5 and hand eczema has had moderate to very high effect on the quality of life of 75.5% of their patients [12].

Great difference between quality of life of hand eczema patients in Iran and European countries can be attributed to social and cultural differences. One of these differences is the difference in the patterns of referring for medical cares; that is, Iranian patients do not usually refer to physicians for mild symptoms and mostly prefer to benefit from traditional medications at early

stages of disease. High average HECSI score in this study is evident of the fact that Iranian patients ask for medical treatments when the severity of lesions increases. In the present study, half of the patients had HECSI score of 46 or less, while in Anger et al study 50% of studied patients had HECSI score of less than 17 [17].

Based on participants' responses to the DLQI questions, it is identified that hand eczema affected different aspects of their life with the most effects on "symptoms and feelings" and "leisure". In some other studies, the highest rates of effects have been on "work/school" and/or "symptoms and feelings" [13, 14, 22] and in Wallenhammar et al. study in Sweden the lowest rate of effect has been in "personal relationships" [14].

In the present study, no difference was found among different age groups and also between males and females in regard to the quality of life that is similar to the findings of some other studies [13, 14, 17, 22] but differ with the results of Bingefors et al study in which the quality of life had been different among age groups and more affected in females compared to males [10]. Moberg et al have also reported lower quality of life in female patients with hand eczema [23]. It should be mentioned that the applied instruments in these two studies have been respectively SF-36 and EQ-5D. It seems that these questionnaires compared to DLQI questionnaire are more useful in detecting differences of quality of life between male and female patients, a fact that has been recognized about SF-36 questionnaire [14]. In spite of no difference in the effect of hand eczema on the quality of life of two sexes, it should not be forgotten that since the prevalence of this disease in women is higher compared to men (one-year prevalence rate of 5.4-14.6% in women vs. 2.5-8.8% in men) [5], the complications resulting from hand eczema would be higher in female populations.

One of the significant findings of the present study was the presence of positive relationship between the severity of disease symptoms and impaired quality of life. This finding is in agreement with the results of Cvetkovski et al. and Anger et al. studies [13, 17]. It is very clear that with increase in the severity of disease in hand, due to the problems related to the lesions and also psychosocial problems, the quality of life is negatively affected. While the severity of hand eczema symptoms affected patients' quality of life, no relationship was found between disease duration and patients' quality of life that is similar to some other studies [13, 22].

To the best of our knowledge, the present study was the first attempt for studying the quality of life of Iranian patients with hand eczema and it was found much worse than what had been reported in diseases such as vitiligo, acne and melasma [19, 24, 25]; even though, it has been shown in other studies that the quality of life in hand eczema is similar to that in acne, psoriasis and dermatitis [14].

Conclusion

This study showed that hand eczema affects the quality of life markedly. Although this issue has been recognized previously in studies performed mostly in Europe, the results of the present study are evident of more impaired quality of life in hand eczema patients due to the higher severity of this disease in Iranian population. In the treatment process of patients with hand eczema, dermatologists in addition to treating lesions should pay special attention to other aspects of patients' wellbeing. The results of the current study emphasize on the necessity of more

studies on hand eczema in Iran and other countries with similar conditions.

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