

Quality of life, anxiety, depression and obsessive-compulsive tendencies in patients with chronic hand eczema

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Summary

Background. Chronic hand eczema is a common dermatological disorder of multifactorial aetiology. It affects physical, material, social and psychological aspects of life, thereby impairing health-related quality of life.

Objectives. The aim of the present study was to assess quality of life, anxiety, depression and obsessive-compulsive tendencies in patients with chronic hand eczema.

Materials and methods. Seventy-one patients with chronic hand eczema were included in the study. Quality of life was evaluated according to the Dermatology Life Quality Index (DLQI). Patients were also assessed for anxiety and depression with the Hospital Anxiety and Depression Scale (HADS), and for compulsive behaviour with the Leyton Trait Scale.

Results. The DLQI score was 11.11 ± 1.81 in patients with chronic hand eczema. Scores on the Leyton Trait Scale were significantly higher than those of healthy controls ($p < 0.027$). As concerns the HADS-Anxiety subscale, patients with hand dermatitis had statistically significantly higher scores than those of volunteers ($p = 0.002$). In contrast, no statistically significant difference was found between the two groups with regard to the HADS-Depression subscale score and total HADS score.

Conclusion. Hand eczema treatment should address the severity of skin lesions as well as the psychological impact of hand eczema.

Key words: allergic contact dermatitis; irritant contact dermatitis; systemic contact.

Chronic hand eczema is a common dermatological disorder, with a 1-year prevalence of 10% and a lifetime prevalence of 15% in the general population (1). It represents a major occupational problem, and accounts for > 80% of occupational dermatitis cases (2). Studies have shown that young women have a higher risk of developing hand eczema than men, and that the risk decreases with age

(1). In one-third of patients, the disease starts before the age of 20 years (3).

The aetiological factors of chronic hand eczema include contact allergy, irritant exposure, atopy, and tendencies to have vesicular hand eczema and hyperkeratotic hand eczema (4). Genetic factors contribute to the pathogenesis of chronic hand eczema (1), but the exact pathophysiological mechanisms have not been clarified.

Chronic hand eczema affects physical, material, social and psychological aspects of a person's life, thereby impairing health-related quality of life. The psychological effects are similar in magnitude to those of atopic dermatitis, psoriasis (5), and asthma (6). Individuals with hand eczema may experience depression, mood disorders,

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low self-esteem, worry, and disrupted sleep. Quality of life in patients suffering from chronic hand eczema has been examined in a few studies (3–10), but the influence of chronic hand eczema on depression (5, 8, 11, 12), anxiety and obsessive-compulsive tendencies have not been studied. Because of its potentially adverse economic and psychosocial consequences, hand eczema should be regarded as an important public health challenge. The aim of the present study was to assess quality of life, anxiety, depression and obsessive-compulsive tendencies in patients with chronic hand eczema.

Materials and Methods

Patients referred to us for chronic hand eczema from January 2013 to December 2013 at the 'Andreas Sygros' Hospital, which is a tertiary referral centre, were enrolled in the study. The study protocol was approved by the Ethics Committee of the 'Andreas Sygros' Hospital, and written informed consent was obtained from all patients. The diagnosis was based on clinical grounds. Patients considered eligible for inclusion in the study were aged > 18 years, were able to understand the Greek language, and had not received any treatment during the previous 3 months. Patients with a psychiatric history or a history of psychotropic drug use were excluded from the study.

The Dermatology Life Quality Index (DLQI) was used to evaluate quality of life. Patients were also assessed for anxiety and depression with the Hospital Anxiety and Depression Scale (HADS), and for compulsive behaviour with the Leyton Trait Scale. The DLQI is a validated 10-item questionnaire regarding personal relationships, leisure, daily activities, and treatment. The maximum score is 30, with 0 indicating the least impairment and 30 the greatest impairment in quality of life (13).

The HADS was developed by Zigmond and Snaith, and constitutes an instrument for detecting states of anxiety and depression, originally of hospital medical outpatients (14). It is also appropriate for medical patients in general, as it does not refer to the somatic symptoms of anxiety and depression. The HADS is a self-report rating scale of 14 items designed to measure anxiety and depression, which are the most common emotions causing psychological distress in patients (seven items for each subscale). Responses to items are indicated on a four-point Likert Scale from 0 to 3 (score range 0–21, for each subscale), with a high score indicating more symptoms. The authors of the previous study have suggested two cut-off scores for detecting depression and anxiety that have generally been used in most studies; scores of 8–10 denote doubtful cases, and scores of ≥ 11 signify valid cases (14). The HADS has been validated

in the Greek population (15). In this study and in the outpatient group, HADS values were estimated as follows: total HADS 16.1 ± 7.4 , HADS-Anxiety 8.7 ± 4.3 , and HADS-Depression 7.3 ± 3.8 ; in the general population group, they were 9.1 ± 6.1 , 5.1 ± 3.7 , and 3.9 ± 3.1 , respectively (15).

Additionally, patients were assessed for obsessive-compulsive personality traits and behaviour with 23 self-administered items that constitute the Leyton Trait Scale, which is part of the Leyton Obsessional Inventory (69 items in total; 46 symptom questions and 23 trait questions) (16). In his original work, Cooper estimated the mean trait score for obsessional patients to be 11 ± 3.2 (16). Therefore, scores of ≥ 12 are suggestive of obsessive-compulsive personality/behaviour.

The control group was recruited during the same period of time, and included 71 healthy, age-matched and sex-matched volunteers from the general population (in our study, individuals from the administrative staff of the hospital were randomly selected), with no personal history of chronic hand eczema or history of psychotropic drug use. The participation of people in the control group was voluntary and without any financial compensation.

Statistical analysis

All data were analysed with SPSS™ for Windows™. The *t*-test was used for quantitative analyses and comparison of means, and Pearson's coefficient correlation was also applied. Results are expressed as means $\pm$ standard deviation (SD). Statistical significance was determined as a *p*-value of 0.05.

Results

In a case–control study, 71 patients were included, of whom 34 were female and 37 were male, aged 22–61 years (mean 37.36 ± 10.76 years). Thirty-six of the control group were male and 35 were female, aged from 22 to 68 years (mean 39.76 ± 10.32 years). No statistically significant differences between patients and controls were found for age [$t = 1.35$, $p > 0.05$, not significant (NS)] and sex ($\chi^2 = 0.03$, $p > 0.05$, NS) (Table 1).

Table 1. Demographic characteristics of patients and controls with chronic hand eczema

	Patients	Controls
Sex (male/female), no.	37/34	36/35
Age (years), mean $\pm$ SD	37.36 ± 10.76	$39.76 \pm 10.32^*$
DLQI score, mean $\pm$ SD	11.11 ± 1.81	–

DLQI, Dermatology Life Quality Index; SD, standard deviation.

**p*-Value not significant as compared with patients.

Table 2. Anxiety, depression and obsessive-compulsive tendencies in patients with chronic hand eczema quantitatively compared (*t*-test) with healthy volunteers

	Patients with hand eczema (n = 71)	Controls (n = 71)	<i>t</i> -Test	<i>p</i> -Value
Total score Leyton Trait Scale score, mean $\pm$ SD	12.64 $\pm$ 3.29	11.33 $\pm$ 3.69	2.22	0.027
Total HADS score, mean $\pm$ SD	15.29 $\pm$ 5.65	13.43 $\pm$ 6.12	1.88	0.062
Total HADS-Anxiety score, mean $\pm$ SD	7.77 $\pm$ 3.74	5.84 $\pm$ 3.39	3.21	0.002
Total HADS-Depression score, mean $\pm$ SD	7.32 $\pm$ 2.69	6.73 $\pm$ 3.99	1.03	0.303

HADS, Hospital Anxiety and Depression Scale; SD, standard deviation.

The sample size provided adequate power for a two-sided *t*-test at 5% type I error, according to published data for the expected population SDs for the HADS and the Leyton Trait Scale (15, 16). In particular, for the total HADS scores, the power was > 80% for the following combinations of differences in population means and within SDs: 2.5 and 5, or 3 and 6, or 3.5 and 7. For the HADS-Anxiety and HADS-Depression scores, the power was > 80% for the following combinations of differences in population means and within SDs: 1.5 and 3, or 2 and 4. The Leyton Trait Scale power was > 80%, assuming differences in population means and within SDs of 1.5 and 3, respectively.

The DLQI score was 11.11 ± 1.81 in patients with chronic hand eczema (Table 1). On the Leyton Trait Scale, significantly higher scores were recorded (12.64 ± 3.29) than for healthy controls (11.33 ± 3.69) ($p < 0.027$). As concerns HADS-Anxiety scores, patients with hand dermatitis had statistically significantly higher scores than volunteers. ($p = 0.002$). In contrast, no statistically significant difference was found between the two groups with regard to HADS-Depression scores and total HADS scores (Table 2). The duration of symptoms ranged from 3 weeks to 9 months (the average duration was 2 months). A positive correlation was noted among the Leyton Trait Scale and DLQI scores ($p < 0.008$), HADS-Anxiety subscale ($p < 0.046$), and age ($p < 0.01$). No correlation was noted between the Leyton Trait Scale and HADS-Depression and total HADS scores. Similarly, no correlations were observed among DLQI, age, HADS-Anxiety, HADS-Depression and total HADS scores.

Discussion

Hand eczema is a chronic disease, with a mean duration of > 10 years (4), and is characterized by temporary improvement and frequent relapses. The psychological effects seem to be long-lasting (6). Hand eczema interferes with the working, personal and social life of the patient, provoking sleep disturbances and inhibiting leisure activities. Patients tend to have long periods of sick leave, change their occupation, or acquire permanent disability (1). Patients also incur high medical costs for outpatient services, prescription drugs, and hospitalization (9). Chronic hand eczema inhibits work productivity, and performance at work and during daily activities (9). Cessation of hobbies, changes in daily activities and mood disturbances influence the patient's daily functioning and quality of life (1).

According to the literature, chronic hand eczema impairs the patient's quality of life. In a study of 70 patients, the mean DLQI score was 8.68, indicating a moderate impact on quality of life (10). Mi Yu et al. (8) found a similar DLQI score, with no statistically significant differences with regard to age, disease duration, profession, or morphological subtype. On the other hand, there was a strong association between quality of life and hand eczema severity (8). Similar DLQI scores (mean $\pm$ SD: 9.54 ± 5.62) were found in the study by Charan et al., without correlation with disease severity (3). In contrast, Cvetkovski et al. (5) found a lower DLQI score (mean $\pm$ SD: 5.5 ± 4.8) among patients with occupational hand eczema, with no significant differences between males and females, but severe eczema cases and those of lower socio-economic status were associated with low quality of life. Agner et al. (4) found that the increased duration and number of eruptions, as well as the increase in sick leave, were correlated with decreased quality of life. An early diagnosis is also associated with lower DLQI scores, whereas high DLQI scores may predict depression and anxiety (7). In our study, the median DLQI score was higher than that reported by previous studies (mean $\pm$ SD: 11.11 ± 1.81), indicating that chronic hand eczema had a greater negative impact on the patient's quality of life that did not correlate with age, anxiety, and depression. It seems that, in our population, the disease significantly influences significant daily activities, and social and personal life. Furthermore, chronic hand eczema often affects their work; they may change their work habits, and their productivity is affected.

In previous studies (5, 8, 11, 12), depression rates were also high among patients with hand eczema. In contrast, our study found that depression scores of patients were not significantly higher than those of controls, as opposed

to anxiety scores of patients with hand dermatitis, which were significantly higher than those of volunteers. These findings can be explained by the fact that stressful life events constitute a major risk factor for the occurrence and recurrence of the disease. Hence, patients with a higher tendency to worry are more vulnerable to the impact of daily stressors. Boehm et al. (12) found a positive anxiety score in 20% and 14% of the patients, respectively. Females were more influenced than males, but an association of severe hand eczema with symptoms of anxiety was found in males (12). Many chronic diseases are followed by depression (6), and it is believed that chronic hand eczema is a risk factor, because of its detrimental effects. Depression and anxiety may lead to treatment discontinuation or non-compliance, or can influence disease duration. The high anxiety rates found in our study could explain the intense obsessive behaviour indicated by our patients.

To the best of our knowledge, this is the first study to deal with obsessive-compulsive tendencies in patients with chronic hand eczema. A statistically significant difference on the Leyton Trait Scale between patients and healthy volunteers was found (12.64 and 11.33, respectively, $p < 0.027$). There was a positive correlation among scores for the Leyton Trait Scale and DLQI, HADS-Anxiety subscale, and age. In contrast, there was no correlation

between the Leyton Trait Scale and HADS-Depression subscale. It could be speculated that physical complaints of hand eczema, such as itching, pain, and erosions, are expressions of psychological factors (11). It is believed that symptoms may be a way of relieving feelings and behaviours that are not otherwise manifested (11). As a consequence, skin changes may be self-induced and involve dermatological manifestations of compulsive traits. This is particularly apparent in compulsive hand washers. On the other hand, primary skin disorders can be exacerbated by obsessive-compulsive tendencies such as scratching, rubbing, and picking. Hence, it cannot be determined whether an obsessive-compulsive tendency is the consequence of hand eczema or a contributory factor to the condition.

The main limitation of our study is that the number of patients is not high. Nonetheless, the size does not detract from the importance of the results.

In conclusion, hand eczema treatment should address the severity of skin lesions as well as the psychological impact of hand eczema. Additional psychiatric consultations or psychotherapy should be considered in the treatment of chronic hand eczema, in order to prevent symptoms and minimize the detrimental impact of the disease on the patient's life.

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