Clinical and psychological characteristics and targets for psychotherapy at atopic dermatitis patients

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Abstract

Aim of the study. The aim of this study was to evaluate levels of anxiety and depression in patients with atopic dermatitis (AD), leading behavioral strategies for coping with stress and their correlation with the severity of dermatological symptoms in patients with AD, as well as the determination of psychotherapeutic targets for improving medical and mental health care for patients with AD.

Subject or material and methods. 56 patients with atopic dermatitis and 60 healthy individuals in the control group were examined using the Beck Depression Inventory (BDI) scale, the State-Trait Anxiety Inventory (STAI) by C.D. Spielberger, The Coping Strategy Indicator (CSI) by J.H. Amirkhan and projective technique the Sentence Completion Test by Dr. Joseph M. Sacks and Dr. Sidney Levy. Dermatological assessment was performed using The SCORAD Index. Data analysis was performed using the SPSS 12 software package.

Results. The AD patients significantly more often turned to "Avoidance strategy" rather than healthy subjects. Unlike healthy patients, those with AD used "Seeking social support" and "Problem solving" as coping techniques considerably less. At the same time the dermatosis severity positively correlated with the "Avoidance strategy", state-trait anxiety scores and severity of depressive symptoms. In addition, disease duration had a considerable influence on the level of depression, and retrospective treatment success had a positive impact on reduction of depressive symptoms. The AD patients displayed significant difficulties within relations with the opposite sex (36%), with father (29%), guilt (39%) and regrets of untapped opportunities (43%) that required psychotherapeutic correction.

Discussion and Conclusion. The influence of AD on patients' psychological state determines the necessity of psychological intervention including antianxiety therapy and correction of maladaptive behavioral strategies, as well as attitudes towards person's relations with family, interpersonal communication and self-perception.

atopic dermatitis; anxiety; symptoms of depression; relationships; coping strategies

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INTRODUCTION

Nowadays atopic dermatitis (AD) is one of the most widespread skin diseases all over the world. It affects 3-7% of adults [1, 2] and 15-20% of children in industrially advanced countries and rates under 20% of all patients undergoing treatment at dermatology department [3, 4, 5].

It is a chronic condition and is one of the four most common chronic inflammatory skin disorders [6, 7]. Atopic dermatitis is found more often among patients with personal or family history of atopic diseases. AD can develop at any age; however, the most typical period for the disease emergence is early infancy or childhood [8].

The key symptoms of AD are intense pruritus, dry skin, papules, lichenification and eczematous inflammation. Pruritus is considered to be the essential component of preserving and exacerbating of AD, causing a sick cycle of itching, scratching and exacerbating of eczematous lesions [9]. The symptoms and unpredictability of the illness, intense pruritus and constant sensation of the skin disfigured by rash apply psychological pressure on the AD patients and often have great influence on their everyday life. It is important to take into account how the patients are managing their condition and their opinion regarding how well the disease is controlled [10].

The increasing prevalence of AD and the growing expenses for its treatment require extensive researches to obtain a deeper insight into this disease and its pathogenesis in particularly, since this could be important in the treatment of patients with AD [11]. Over the last years the role of psychological factors, especially like personal and psychosocial stress in AD pathogenesis, became the central issue in psychodermatological studies [12, 13].

Hashiro and Okumura (1997) suggested that AD patients had a higher prevalence of depressive symptoms and psychosomatic symptoms, but not anxiety symptoms, compared to the controls [14]. Slattery and Essex (2011) described no significant correlations of depression and anxiety symptoms with a lifetime history of AD. However, a growing body of evidence in more recent studies reported the association between AD and depression as well as anxiety symptoms [15,16, 17, 18, 9, 19]. Subsequently, AD patients often demonstrate a specific psychological profile marked by depression, tension and anxiety [20]. Previous studies also suggested the potential role of environmental factors in the exacerbation of AD [21, 22]. A central premise underlying most of the research in this area is that certain personality traits, as well as an increased level of stress, can increase the body's vulnerability to AD and/or worsen AD symptoms. It can be assumed that interpersonal and intrapersonal conflicts play a significant role and contribute to the aggravation of AD symptoms. This assumption is often evidenced by the anamnesis data of the patients. In this case, the detection of targets for psychotherapy in patients with AD and appropriate psychotherapeutic interventions will make it possible to achieve a more favorable course of AD [23].

Nevertheless, it's not clear from literature whether personal traits are etiologically significant, and if so, what is the mechanism of their impact on AD development. It's obvious that new research strategies are needed for further clarifying the potential influence of personality on AD.

For that purpose we have analyzed leading behavioral strategies for coping with stress, their correlation to dermatological symptoms severity in AD patients, and determined main areas of intrapersonal and interpersonal conflicts in AD patients. Severity of depressive symptoms and anxiety level of individuals with AD has also been assessed.

METHODS

Subjects

This study involved 56 patients of dermatologic clinic diagnosed with atopic dermatitis (moderate and severe level) and ranging in age from 23 to 49, including 27 men and 29 women, 32 of which have higher education, 24 – secondary professional education. At the time of the study 26 patients were unemployed. The control group consisted of 60 subjects without dermatologic symptoms, including 18 men and 42 women. 40 subjects with higher education, 20 with secondary professional education. At the time of the study 25 subjects were unemployed. In the control group age varied from 22 to 50.

A questionnaire included information about age, sex, marital status, level of education, employment, illness duration, exacerbation duration, retrospective therapy success and presence of secondary disorders.

The clinical and sociodemographic portrayal of the sample of patients with atopic dermatitis is presented in Table 1 and Table 2. The sociodemographic portrayal of control group without dermatologic symptoms is presented in Table 3.

Table 1. Clinical variables in patients with atopic dermatitis (n=56).

Study variables Index Value		
Duration of the disease (years)	M	20.7
	Min-Max	1-45
Duration of the exacerbation (months)	M	7
	Min-Max	1-16
Retrospective therapy success (%)	With a significant improvement	46.4
	With an insignificant improvement	25
	Without an improvement	28.6
Presence of secondary disorders (%)	With a secondary disorder	32.1
	Without a secondary disorder	67.9
Disease severity(%)	Moderate AD	62,5
	Severe AD	37,5

Table 2. Sociodemographic portrayal of patients with atopic dermatitis (n=56)

Sociodemographic variables		%
Sex	Female	51.8
	Male	48.2
Age	Mean	35.7
	Min-Max	23-49
Marital status	Married	51.8
	Single	48.2
Education	Secondary professional	42.9
	Higher	57.1
Employment	Employed	53.6
	Unemployed	46.4

Table 3. Sociodemographic portrayal of the control group (n=60)

Sociodemographic variables		%
Sex	Female	70
	Male	30
Age	Mean	36.2
	Min-Max	22-50
Marital status	Married	65
	Single	35
Education	Secondary professional	66.7
	Higher	33.3
Employment	Employed	58.3
	Unemployed	41.7

The study was conducted in the Department of Dermatology of North-Western State Medical University named after I.I. Mechnikov (NWSMU n.a.I.I.Mechnikov).

PSYCHOMETRIC QUESTIONNAIRE

The Beck Depression Inventory (BDI) is a 21-item test presented in multiple choice format that measures the presence and degree of depression [24].

The Spielberger State-Trait Anxiety Index (STAI) evaluates anxiety level based on a self-esteem inventory (high, moderate and low anxiety). It comprises 40 questions; 20 regarding state anxiety (SA) and 20 regarding trait anxiety (TA) [25]. SA develops in response to stressors, most likely of a sociopsychological kind (expectation of aggressive response, threat to self-respect, etc.) TA gives an idea of a personality's liability to various stressors due to personality traits.

Amirkhan Coping Strategy Indicator (CSI) is used to diagnose the leading personality coping strategies: Problem solving strategy, Seeking social support strategy and Avoidance strategy [26, 27].

Sacks and Levy's Sentence completion test (SSCT). The test allows to reveal conscious and unconscious attitude of a person. All sentences of the test can be combined into several groups, which will reflect self-perception, attitude towards family, interpersonal and intersexual relationships [28].

Dermatological evaluation was performed by physicians of NWSMU n.a. I.I.Mechnikov.

The level of severity of AD symptoms was measured using Scoring Atopic Dermatitis index (SCORAD). The method of evaluating AD manifestation and severity by SCORAD index includes complex evaluation of the three data units: skin lesion prevalence (A), their severity or intensity (B) and subjective symptoms (C) [22].

Statistical analyses were performed using the Statistical Product and Service Solutions program (SPSS Inc., Chicago, 111, USA) for Windows (version 10). Results are reported as mean ± standard deviation (SD). The correlations were analyzed via Pearson's correlation test. A difference with p<0.05 value was considered statistically significant.

RESULTS

Difference between patients with atopic dermatitis and healthy subjects

At the first stage of this study a comparative research was performed on the severity of state and trait anxiety, as well as on symptoms of depression in dermatologic patients (n=56) and healthy subjects (n=60) (Table 4).

Table 4. Comparison of healthy subjects and patients with AD by the level of severity of depressive symptoms, state and trait anxiety

	Patients with AD	Healthy subjects
BDI	11.6±7.8**	6.5±4.3**
Trait Anxiety	38.3±9.1*	30.5±14*
State Anxiety	41.4±10.4**	28.5±14.3**

** – significance level p≤0.001 ; * – significance level p≤0.05

It was established that in comparison with healthy subjects the patients with AD had positively higher index of trait anxiety (p<0.001), state anxiety (p≤0.05) and severity of depressive symptoms (p<0.001).

At the same time the scores of depressive symptoms in healthy subjects on average corresponded with the absence of depression (less than 9 points in BDI), whereas the average score in BDI among patients with AD was 11,6 points and corresponded with the existence of subdepression.

In order to reveal a correlation between severity of dermatological symptoms, depressive symptoms and behavioral coping strategies a correlation analysis was performed. The analysis showed that severity of dermatologic symptoms in AD patients had a significant relation with the avoidance strategy (r = 0.521, p≤0.05), as well as with the problem solving strategy (r = – 0.291, p≤0.05).

The severity of dermatosis evaluated by SCORAD index was significantly related with the avoidance strategy (r = 0.462, p≤0.05), that is, the worse was the dermatologic condition of patients, the greater tendency to avoid dealing with oncoming challenges and problematic situations they demonstrated.

Moreover, significant correlations between dermatosis severity, state anxiety (r= 0.385, p≤0.05) and trait anxiety (r= 0.413, p≤0.05) were found.

Subsequently, we compared leading behavioral coping strategies of healthy subjects and patients with AD (Table 5).

Table 5. Comparison of coping strategies of healthy subjects and patients with AD

| Groups	Problem solving	Seeking social support	Avoidance
Patients with AD	24.5±5.3*	21.7±5.9	18.4±4.6**
Healthy subjects	27.5±3.7*	24.1±4.2	15.3±2.4**

** – significance level p≤0.001; * – significance level p≤0.05

Table 5 shows that patients with AD much more often turned to the avoidance strategy than healthy subjects (p≤0.001). At the same time AD patients significantly less often than healthy subjects used behavioral strategy to solve problems (p≤0.05). In addition, patients with AD less often than healthy subjects used seeking social support strategy.

Subsequently, we performed a comparative study of three clinical groups with varying degrees of success of a drug therapy in the past. Statistics are presented on fig.1.

As shown on fig.1 patients with AD, whose retrospective treatment was successful, had significantly less depressive symptoms (p<0.05) in comparison with patients, whose retrospective treatment was less effective or ineffective.

In order to discover the conflict in a patient's personal relationships and to define psychotherapeutic targets and recovery, a qualitative analy-
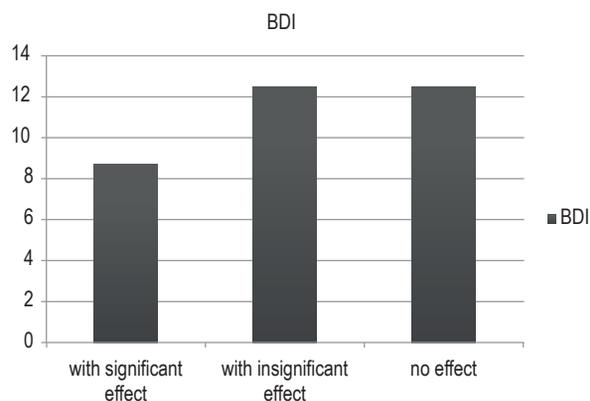
Fig. 1. Influence of the retrospective treatment success on severity of depressive symptoms at AD patients.

sis of Sentence Completion projective technique was performed.

Patients with AD showed significant difficulties within relationships with the opposite sex (36%), with father (29%), guilt (39%) and regrets of untapped opportunities (43%) that required psychotherapeutic correction.

Age, age of onset or duration of illness, educational level, marital status and employment were not significantly associated with psychological variables.

DISCUSSION

Table 4 shows that patients with AD have higher scores of state (p≤0.05) and trait (p≤0.001) anxiety than healthy subjects. Furthermore, patients with AD have statistically higher depressive symptoms scores (p≤0.001) in comparison with healthy subjects.

The acquired research data corresponds with the reported earlier. A number of studies suggested that depression [29] and even suicidal ideation [30, 9] in case of AD is associated with pruritus, and enhancement of pruritus is associated with the increase of depression severity [31, 32].

Lower depression level of AD patients, who have a history of successful drug therapy, in comparison with patients, whose retrospective treatment was less effective or ineffective, can indicate that such individuals are more optimistic regarding the course of their disease.

Aaron T. Beck, the author of the questionnaire widely used to evaluate depressive symptoms, pointed out that the most important factor of the

survival of an organism is information processing. Behavioral programs are forming as a result of this processing. A person perceives information from the environment, synthesizes it and plans action on the base of this synthesis, that is, independently produces a behavioral program. The program can be normal (reasonable) and unreasonable [33]. Regardless of the significance of this statement, researchers rarely focus on analyzing of AD patients behavioral programs. Correlation analysis revealed interactions between severity of dermatologic symptoms, depressive symptoms and behavioral coping strategies in patients with AD.

The avoidance strategy is considered to be the dominant behavioral strategy in forming of maladaptive and pseudo-coping behavior. Choosing of this strategy is caused by insufficient development of trait-state coping resources and active problem solving skills. The avoidance strategy can be adequate and inadequate depending on specific stress circumstances, age and state of a person's resource system. The acquired data about the correlation between the severity of dermatologic symptoms and the avoidance strategy may suggest that in case of chronic stress caused by AD symptoms, such as inflammation and intensive pruritus, this strategy is mostly maladaptive.

Correlation between the problem solving strategy (r = − 0.291, p≤0.05) and the severity of depressive symptoms in AD patients demonstrates their poor ability in identifying the problem and finding an alternative solution – factors that contribute to effective coping with stress.

Patients with more severe symptoms of AD showed higher scores of anxiety. It's known that anxiety is closely related with stress. Thus level of stress caused by exacerbated dermatosis could result in an increase of the state anxiety level. At the same time the existence of significant correlations between trait anxiety level and dermatosis severity may implicate general vulnerability to various stressors of the described group of subjects.

Sacks and Levy's method allowed to discover disturbance in relationships in patients with AD, specifically in relationships with the opposite sex (36%), with father (29%), guilt (39%) and regrets of untapped opportunities (43%). A typical answer about relationships with the oppo-

site sex was: "I think most women behave themselves inappropriately". It was established that relationships with father plays a great role in forming relationships with other people: "I think my father never spent much time with me", "The worst thing I could have done is to call my stepfather a dad". Untapped opportunities were described as follows: "I've always wanted something else". The feeling of guilt was described in the following manner: "I would do anything to forget the past".

CLINICAL EXAMPLE

Patient T. 45 years, married. University educated. Profession: engineer. Diagnosis: atopic dermatitis. Disease since May, 2015. SCORAD index = 63.8. Secondary disease: varicose vein disease. BDI: 25 points – depression severity (moderately severe).

The Coping Strategy Indicator (CSI) by J.H. Amirkhan. Behavioral coping strategies: Problem solving – 28, Seeking social support – 23, Avoidance – 20.

Patient uses active behavioral strategies, tries to use all available personal resources in search of any possible way to solve problems, seeks social support from family, friends and significant others. On the other hand, she tends to avoid interaction with the real world.

State-Trait Anxiety Inventory (STAI) by C.D. Spielberger: State anxiety – 35. Trait anxiety – 46. High score of trait anxiety suggests that the patient has an increased liability to worry about any circumstances, including those, which objectively do not predispose of it.

Saks and Levy's method of sentence completion allowed to reveal signs of intrapersonal and interpersonal conflicts.

Further are presented statements from areas, where the patient showed the most distinct attitude disorder.

Attitude towards the future: "Future seems prospectless and not only for me". Attitude towards herself: "The worst of my weaknesses is my self-criticism. I demand a lot from myself". Attitude towards colleagues: "People I work with are insensitive and boring". Fears and concerns: "I wish I could stop being afraid of diseases, medical procedures and examinations". At-

titude towards the opposite sex: "I think most men are unable to love, to have a family, to care about people closest to them". Attitude towards family: "When I was small my family gave little love, care and attention to me". Attitude towards mother: "I love my mother but she never understood me or listened to me".

The patient feels rejected by her family of origin, where her parents always lacked time to show their feelings. She projects relationships of her family of origin onto most families. She emphasizes her mother's insensibility towards her. She feels rejected by her colleagues. In relation towards the future she doesn't rely on her own sources of happiness or success. She emphasizes high expectations of herself. She feels intense fear towards diseases and treatment.

The patient showed high trait anxiety, severe depression symptoms, negative attitude towards the future, fears about diseases, and in relationships with her family and close friends showed difficulties that need psychotherapeutic interference alongside treatment of the main disease.

STUDY LIMITATIONS

A major limitation of this study is that we examined only individuals with atopic dermatitis receiving in-patient treatment, with moderate and severe course and unsuccessfully treated out-patient. Second, the studied patients did not receive psychotherapy in the past, that is, the results cannot be extrapolated to patients with mild AD or those who underwent psychotherapy.

CONCLUSION

Despite limitations this study showed some significant results. The severity of depression symptoms in patients with atopic dermatitis correlated with the usage of the maladaptive avoidance strategy as a coping technique in difficult situations. The study revealed specific defects that allowed to define psychotherapeutic targets for improving medical and mental health care for patients with AD. The results acquired in the course of the study empirically prove the need to take into consideration a patient's psychological state for planning the therapy.

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