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Psychological and psychopathological factors in alopecia areata

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Summary

The problems of mental disorders and psychological aspects in alopecia areata in the Polish context are not well researched yet. The objective of our analyses is to present the results of the review of literature devoted to the occurrence of mental disorders and the participation of psychological factors in the aetiology of alopecia areata. Preparing the review of the research conducted hitherto and concerning the participation of psychological factors in the pathogenesis and the course of alopecia areata, it is indicated that stress, a traumatic situation, a high level of neuroticism and alexithymia, may influence the occurrence, duration and exacerbation of the condition in question. Mental disorders occurring most frequently amongst individuals suffering from alopecia areata are: depression, increased level of anxiety, generalised anxiety disorder, social phobia, post-traumatic stress disorder, and suicidal thoughts.

Key words: alopecia areata, depressive disorder, anxiety

Introduction

Alopecia areata (AA) is a medical problem a feature of which is the nonscarring loss of hair on the skin of the head, brows and eyelashes, in the inguinal regions and in the areas close to the reproductive organs [1]. The pathological changes may gradually affect the entire skin of the head (alopecia totalis) or the entire body (alopecia universalis) [2]. The frequency of the occurrence of the medical problem in question is estimated to be 0.2% in the general population [3], and 2.1% amongst ambulatory patients (Rochester Epidemiology Project, 1990–2009) [4]. AA may occur at any age, but it frequently starts in childhood, and, in the case of approximately 60 % of patients, the first symptoms of that medical problem appear before the twentieth year of life [5]. The research conducted on the group of the citizens of the United States does not indicate any significant differences in the occurrence of alopecia areata in cases of females and of males [6].

Contemporarily, there is no existing theory which would cohesively explain the cause of alopecia areata. In the etiopathogenesis of AA, numerous factors are taken under consideration [7–9]. Amongst factors which may exert a significant influence upon the clinical picture of the disease in question, the following ones are enumerated: autoimmune, vascular, hormonal and genetic processes, a diet deficient in iron [6], mental factors and disorders in the scope of the nervous system [10]. Research show that the autoimmune background seems to be the most probable factor. Keratinocytes that are epidermal cells which release cytokines: TNF-α, IL-1β, IL-8, which activate endothelial cells [11]. "Around follicle accumulate T lymphocytes (predominantly Th1) and macrophages which release the more cytokines and exacerbate inflammation. Follicular cells exhibit a higher expansion of cell adhesion molecules ICAM-1 (...) based on the activation of damaging agent it can lead to dystrophy with instant hair loss" [11, p.142].

What should to be remembered about, is the polietiological determinants of alopecia areata, which means that the particular arrangement of the factors mentioned above determines the occurrence of that condition and the its development.

Aim

Undertaking research into the problems of alopecia areata in the field of psychology seems to be justifiable because alopecia areata is included in the group of medical conditions of a dermatological character modified by psychological factors, i.e. the course, or even the very occurrence, of which, are exerted influence upon by mental aspects [12].

The problems of mental disorders and psychological aspects in alopecia areata in the Polish context are not well researched yet. The aim of our analyses is to present the results of the review of literature devoted to the occurrence of mental disorders and the participation of psychological factors in the aetiology of AA, and also to indicate the effective methods of a therapeutic course of action with affected individuals.

Preparing the review of the research conducted hitherto and concerning the participation of psychological factors in the pathogenesis and course of somatic diseases, it is indicated that stress [13], a high level of neuroticism, social inhibition [14], and also alexithymia, may exert influence upon causing, the duration and exacerbation of the condition in question. Psychological and psychopathological factors may be analysed as the modulators of neuroendocrine, vascular and immune processes [15]. However, they are not an element sufficient for the occurrence of the medical conditions of a dermatological character.

Stress and traumatic events

Excessive stress and long-term effects of stressful stimuli, and a way of interpreting them can affect the occurrence or exacerbation of pathological changes in the skin. Diseases in which the aetiology of stress and traumatic situations play an important role include, among others, psoriasis, alopecia areata, atopic dermatitis, urticaria, angioedema.

One of the risk factors of alopecia areata is an emotional trauma associated with actual or symbolic loss, appearing in a situation of sudden abandonment [16].

The research show that, amongst individuals in whom AA was diagnosed, a traumatic situation associated with a strong mental stress [17], such as, for example, the death of a close individual, divorce, loss of job etc., had occurred prior to the first episode of the condition [18]. Levenson quotes the research devoted to the co-occurrence of stress factors in case of patients suffering from alopecia areata, which indicate that 66% of individuals suffering from AA experienced strongly stressful events, whereas in the control group that coefficient amounted to merely 22% [1]. Similarly, the average number of stressful or traumatic events in life amongst dermatological patients was significantly higher [18, 19]. Family problems (affecting 45.6% of the studied individuals) and personal problems (affecting 35.7% of the studied individuals) were particularly frequent among affected individuals. Chronic course of alopecia areata is associated with exposure to chronic stress. Patients with dermatological problems (e.g. psoriasis, atopic dermatitis, urticaria, lichen planus, vitiligo) often emphasise the negative impact of stressful life events on the course of the disease. The relationship between stress and the regulation of the functioning of the hypothalamic-pituitary-adrenal axis, immune and endocrine systems and their impact on inflammation of the skin are still under investigation.

However, such a phenomenon can be explained in the following way: dermatological patients willing to discover the cause of their medical problem and to understand it, ascribe it to stressful events in their lives in the recent past. The research conducted with the application of the genogram method indicates that there is no significant correlation between the occurrence of alopecia areata and the traits of dysfunctional families, or with traumatic events in the family; however, 'abuses' and 'dependence' in a family affected by AA are more common than, for example, in the families of people suffering from psoriasis or atopic dermatitis [18].

Temperament and personality

Annagura et al., analysing the problem of the psychological determinants of AA, developed the temperamental profile of individuals suffering from alopecia areata in accordance with the concept of Cloninger. In this concept temperament is understood as a set of emotional reactions and abilities, which are a peculiar reaction to external stimuli, and which is genetically determined. The authors were researching the four dimensions of temperament: novelty seeking, understood as a predisposition to react actively to new stimuli; harm avoidance, which is a tendency to the inhibition of activities in the context of reactions to negative stimuli; reward dependence, which is a predisposition to sustain an activity because of positive reinforcements and persistence, understood as ability to sustain one's own activity. In this model, character is understood as self-directedness, cooperativeness) and self-transcendence.

The results of the research indicated that the group of individuals diagnosed with alopecia areata achieved lower results in the scale of novelty seeking, in particular, in the sub-dimensions of cognitive curiosity, impulsiveness and chaoticness [5]. Individu-

als with low results in the subscale of cognitive curiosity prefer that what is known, are inflexible and conventional. Low results in the dimension of impulsiveness may indicate the fact that individuals with such a result are more reflective, rational, they also control themselves and adhere to principles, whereas a low ratio of orderliness is the evidence of being well-organised, systematic and disciplined, and also resistant to frustration [20]. Such a type of individuals may experience problems with adjusting themselves to changes and novelties in their lives, which may cause an excessive stress.

It has been proved that individuals suffering from AA achieve a significantly lower result in the subscale of shyness in comparison to healthy individuals. Individuals in the case of whom the indicators in that subscale were low are open, involved and active.

Similarly, nota bene, in the scale of reward dependence, individuals suffering from AA achieved lower results in the subscale of attachment and dependence in comparison to healthy individuals. Such results may prove the fact that those individuals do not become attached to others, that they are inaccessible and alienated, and also independent and self-sufficient.

As it is revealed, results in the dimension of resourcefulness in case of individuals suffering from AA were significantly higher than in case of those in the control group. That fact indicates that the individuals are effective in their actions, resourceful, competent and that they show a lot of initiative. The results in the scale of empathy in case of dermatological patients were significantly lower than of the individuals in the control group ($p < 0.05$). This fact indicates that such individuals lack empathy and that they are not sensitive to the feelings of other people. Such a temperamental profile indicates that such individuals may experience difficulties in establishing interpersonal relationships, and also difficulties in satisfying the need of affiliation [5].

Analysing the character profile, the authors noticed that in the scale of an integrated conscience individuals suffering from AA achieved higher results which may prove that they are ethical, just and honest. However, in all the dimensions of auto-transcendence, which is the creative transcendence of Self, transpersonal identification and the acceptance of spirituality, individuals suffering from AA achieved lower results in comparison to the control group [5]. A low level of indicators in those dimensions may prove that these individuals are conventional and rational, that they lack imagination, and that they are concentrated upon practical objectives. They do not tolerate ambiguousness and uncertainty, and are predisposed towards achieving a greater control and self-control.

The research confirms that, in case of patients suffering from AA, negative emotions, i.e. anger, fear and anxiety, and low self-esteem, are manifested more frequently [19]. The results of own research proved that individuals suffering from alopecia areata manifest a higher level of negative emotionality than individuals who do not suffer from psychodermatological disorders [21]. The results mentioned above confirm the data presented in the literature of the subject proving the existence of a connection between a predisposition towards the experiencing of strong negative emotions, such as anger, anxiety, irritation or hostility, and the medical problems of a dermatological character [22]. Negative emotionality turns out to be a predictor of a number of diseases, including hypertension, cancer, diabetes and diseases of the skin (psoriasis, lichen planus). In own project, no significant differences in the degree of refraining

from the expressing of negative and strong emotions, nor in that of distancing oneself from other people, between groups were revealed, which indicates that social inhibition, and also type D personality, are the weaker determinants of alopecia areata [21]. Furthermore, a group of individuals suffering from alopecia areata manifested a higher ratio of a conciliatory attitude and conscientiousness in comparison to the control group. That means that individuals with high level of a conciliatory attitude, i.e. kind, modest, altruistic, simple-minded and affectionate individuals, are likely to manifest a stronger predisposition towards developing alopecia areata.

Alexithymia

The research give rise to the conclusion that individuals with high level of alexithymia, understood as the disorders of cognitive and affective processes, which encompasses difficulties in the identification of feelings and describing them [23], manifest an elevated level of the risk of the occurrence of dermatological diseases [24].

Individuals with higher level of the exacerbation of alexithymia are more likely to be affected by the occurrence of somatic symptoms because of the extended time of physiological excitation (they are oversensitive to stimuli) [25], elevated mental and somatic tension, and also the lack of social support (resulting from being incapable of describing their state). The intensified activity of the autonomous nervous system and the elevated neuroendocrine response are conducive to the development of somatic diseases [23].

A predisposition towards a psychological distress and negative emotions is conducive not only to somatic conditions, but also to affective disorders. Individuals suffering from the syndrome of alexithymia do not associate physiological indications (stomach ache or headache) with the emotions which they are experiencing, for example, stress or the strong negative emotions – wrath or anger [23], which may cause the erroneous interpretation of somatic sensations accompanying an emotional excitation, and also somatisation and hypochondria.

Individuals with higher level of the exacerbation of alexithymia are more likely to develop alopecia areata [19, 21]. Ruiz-Doblado indicates the connection between AA and a high level of the exacerbation of alexithymia, the indicators of which are: the operational way of thinking, being directed on activities, pragmatism and difficulties in expressing emotions [15].

Quality of life

The results of the research also confirm that the quality of life of patients suffering from AA is lowered. Significant differences were found in the scale of emotional problems, social functioning, general health, social activity and vitality/fatigability [26, 27]. In the majority of cases, the results for females in the Assessment of the Quality of Life (SF-36) inventory were significantly lower than in case of males, particularly, in the subscale of physical functioning, general health and emotional problems [26]. Such results are the evidence for the fact that female patients perceive the quality of

their lives as worse in connection with restrictions concerning physical activity due to medical considerations, emotional problems restricting the fulfilment of the social functions fulfilled hitherto, and also in connection with the general assessment of health.

Significant differences in the scale of general health between patients not living in marital relationships and those living in informal relationships were also found. It turned out that individuals living in long-lasting formal relationships enjoy a higher level of satisfaction. There is also a peculiar correlation between the level of satisfaction and the type alopecia areata. It turned out that individuals suffering from alopecia universalis have the lowest indicator of satisfaction associated with general health. Patients with alopecia areata feel socially alienated and rejected, often do not accept their body and disease, they are tired of permanent discomfort associated with chronic dermatological condition.

Alopecia areata and mental conditions

The problem of mental disorders in dermatological conditions may be considered in two ways. On the one hand, it is possible to analyse mental conditions as primary disorders which manifest themselves in medical problems associated with the skin, and, on the other hand, as the result of a serious and disfiguring condition.

It is worth emphasising here, following the opinions of Koo and Shellow [28], that the frequent occurrence of long-lasting and extensive alopecia may result in serious mental disorders caused by the lack of acceptance of one's own appearance, and also social alienation.

The following mental disorders occur most frequently amongst individuals suffering from dermatological diseases: depression, an elevated level of anxiety, obsessive-compulsive disorders [19], social phobia, post-traumatic stress syndrome, body dysmorphic disorder [29], and suicidal thoughts [30, 31].

Affective disorders

Alopecia areata is an exceptionally burdensome medical problem because concealing the symptoms of that condition is relatively difficult. Bilikiewicz emphasises that a somatic condition, being a situation difficult for a patient, becomes the cause of symptoms and ailments in the mental sphere, from depressed mood, an increase in the level of anxiety and insomnia [32]. Regardless of the fact that AA does not constitute a threat to one's life by itself, a sense of shame and the feeling of being stigmatised may contribute to mental discomfort.

The research give rise to the conclusion that the most common mental disorder in the group of individuals suffering from AA was depressive disorder which occurred in 39% of the studied individuals [19]. Its incidence is associated with the type of dermatological diseases, as well as location, the extent of lesions and duration of the disease. It turned out that alopecia areata, as well as psoriasis and acne, belongs to a group of diseases associated with the highest risk of depression. Alopecia areata as a chronic disease has a significant impact on the psychosociological sphere of patients. The prolonged duration of negative emotions such as anxiety and sadness, which appear due to illness, stigmatisation, a sense

of non-acceptance and rejection by society, which can be a source of worse functioning of the immune system, leads to exacerbation of dermatological symptoms. The highest risk of depression was observed in patients with AA under 20 years of age [19].

The results of research concerning the occurrence of suicidal thoughts and suicidal tendencies in the case of individuals suffering from alopecia areata seem to be ambiguous. On the one hand, the Canadian research indicates that in the case of 480 patients suffering from the medical problems of dermatological character, for example, from psoriasis [30], suicidal thoughts and tendencies were manifested more often than in healthy individuals; on the other hand, no such tendencies were found among patients suffering from AA [19]. However, in the research conducted by Layegh, a significant correlation between the presence and kind of suicidal thoughts and the type of alopecia areata was ascertained. It was revealed that suicidal thoughts occurred in 60% of individuals suffering from alopecia universalis, 25% of those suffering from alopecia totalis and 18% of individuals suffering from partial alopecia [31].

Personality disorders

In his research devoted to the co-occurrence of personality disorders and alopecia areata, Ruiz-Doblado obtained the highest results in the case of individuals suffering from *alopecia areata* in the dimension of anxious personality, dependent personality and obsessive-compulsive personality [15]. According to the contemporary model of spectrum disorders, types of personality disorders, which frequently co-occur with AA are part of a spectrum of type C personality disorders. People with avoidant personality typically avoid the professional activity that requires close interpersonal relationships. The reason for this attitude is the fear of criticism and rejection. Often they are reticent and reluctant to engage in close relationships with other people who do not give them the certainty that they are fully accepted and loved. In social situations they absorb their fixed cognitive scripts of critical content and those associated with feelings of rejection. In contrast, new situations evoke in them a sense of failure and embarrassment. They often perceive themselves as incompetent and unattractive or worse than others. Individuals with dependent personality have an excessive need of care, but those with obsessive-compulsive personality excessively value order and also have a strong need for self-control. It should be emphasised that patients with cluster C personality disorders tend to suffer just from chronic anxiety and worry about the real problems, which just may be problems associated with the impact of skin disease, which means disfigurement and sense of rejection. Early onset of the disease usually falling on the period of adolescence, may affect the formation of personality cognitive schema and activation, as well as the adoption of depression or anxiety dysfunctional cognitive scripts, which may determine the occurrence of depression, anxiety disorders or personality disorders in the future.

Anxiety disorders

One of the most common anxiety disorders in the case of patients suffering from alopecia areata is generalised anxiety disorder (GAD), which occurs in 39% of pa-

tients suffering from AA [19]. Patients with GAD frequently report constant feeling of nervousness, anxiety and feeling of muscle tension, heart palpitations and dizziness. Patients with GAD often express fear of the disease or its recurrence. The occurrence of this disorder is linked with the presence of chronic environmental stress and constant worrying about living conditions, health, financial affairs and social acceptance, what in the case of chronic illness may be justified. In the family history of patients suffering from AA, it is ascertained that anxiety disorders co-occur in other members of the family [19]. Ghanizadeh, researching a group of 14 children and youths suffering from AA, diagnosed obsessive-compulsive disorders in 35.7% of the patients, specific phobias in 28.6% of the patients, separation anxiety in 7.1 % of them, and also post-traumatic stress disorder in 7.1% of patients [33]. It turned out that in case of children the symptoms of anxiety and difficulties in concentrating attention may be the consequence of the medical problem of a dermatological character [19].

Schizophrenia

Regardless of the fact that it is indicated that in the case of certain medical problems of an immunological character (for example, hyperthyroidism, systemic sclerosis, psoriasis, diabetes), schizophrenia occurs more frequently than in the case of the general population, in the case of patients suffering from alopecia areata schizophrenia occurs less frequently than in the case of healthy individuals [19].

Variables exerting influence upon positive or negative adjustment to the disease

In the process of treatment and therapy, the aspect of adjustment to the disease understood as a way of coping with the disease and its direct consequences is of significance. Adaptation to the disease plays a particularly important role in chronic diseases. As it is revealed, the factors which exert a significantly negative influence upon the adjustment to alopecia areata encompass the occurrence of dependent personality, antisocial personality, depressive episode and generalised anxiety disorder [15].

Final remarks

Alopecia areata is a disease of multifactorial aetiology. The occurrence of the disease depends on the interaction between genetic factors, autoimmune and hormonal processes, psychological factors and disorders of the nervous system. The role of psychological factors in the course of AA is especially important. The results of the research indicate that co-occurrence of psychiatric disorders is a clinical problem of many patients with alopecia areata. In contrast, clinical experience indicates that both stress and psychological aspects of alopecia areata have a significant participation in the development and exacerbation of the disease. Dermatological treatment itself is very frequently not sufficient in the case of that dermatosis, therefore, research on the psychological aspects of alopecia areata should be one of the most important preventive actions in Poland. They should also be taken under consideration in the process

of diagnosing and treatment itself, in accordance with the holistic view of the matters. It seems necessary to take the trouble of exploration and understanding of the determinants of alopecia areata, which is a prerequisite for effective treatment. In the process of treatment and therapy of alopecia areata, polyetiological determinants of the disease should be considered and comprehensive treatment that includes, in addition to dermatological treatment, psychological assistance and psychotherapy should be applied to patients

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