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STRESS AND PSYCHICAL CHANGES AS THE CAUSE AND CONSEQUENCE OF HYPERTHYROIDISM

Introduction

Psychoendocrinology is part of the current association of psychosomatic and liaison psychiatry that studies the psychological origin of somatisation and treats psychological changes occurring in the course of a somatic illness (1). The main concern of psychoendocrinology is endocrinological diseases, where psychological disorders may precede the illness or appear as its ensuing manifestation. The presence of combined psychosomatic symptomatology can often mask the primary diagnosis, and regardless of whether psychological changes are the cause or the consequence, in both cases we deal with the phenomenon of psychoendocrinal syndrome (2).

Hyperthyroidism as well as hypothyroidism have their recognizable psychological manifestations, thyroidal hormones used for therapeutically purposes can affect certain psychological states, and, vice versa, various medicaments used for mental illness treatments can influence the function of the thyroid gland (3,4).

STRESS AND HYPERTHYROIDISM

Stress is the most significant trigger for a potential psychosomatic patient, where hypertyroid patients doubtlessly belong. The stress in the form of a physical or psychological stimulus manifested either as prolonged anxiety or a sudden shock, has an undermining influence on the established homeostasis and causes a mental and physiological reaction leading to the illness (5). At that time the whole organism gets alarmed, the activity of the autonomous nervous and endocrinological system is stimulated, and, at the psychological level the imaginary starts to overflow the territory of the real. The loss of insight into the current state and the resulting disbal-

ance between the demands and the abilities leads to the combination of pathological manifestations that can be manifested at the psychical, somatic and social levels.

Stressful life events take place in the context of special situations in the life of an individual, find him/her at various age, sex, professional and emotional positions, disturb their psychobiological balance and increase the vulnerability to various factors (6,7). The most damaging stressful events in everyday life include the loss of a child, the death of someone close, a serious somatic disease, the loss of job, financial bankruptcy, a sudden change of life environment (8,9). In various conditions when these factors are present, the adaptive potentials of an individual are significantly reduced and the flight into the disease (hyperthyroidism) in front of a unbearable flood of anxiety pops out as an appealing and logical solution.

Stressful life events can influence regulatory mechanisms of immunological function, which is the subject-matter of another scientific discipline – psychoneuro immunology. In the particular case of Graves' disease, the emotional shock influences the neuroendocrinological system by affecting the change of immunological reactivity manifested by the creation of antibodies against thyrocytes. In the first stage of the immunological reaction psychical stress acts suppressively on the immune system, reduces the number of CD4 cells (cellular immunity), and increases the number of CD8 cells (humoral immunity), reduces the number of leucocytes and stimulates the increase of cortisol and ACTH (10). Immuno suppression in the further reaction is converted into immunological hyperactivity characterized by the production stimulating TSH-receptor antibodies and consequently increased secretion of thyroidal hormones. The additional stimulus to the production of thyroidal hormones is the influence of stress on the increased secretion of TRH (11).

Hyperthyroidism and psychical changes

Hyperfunctional reaction of the thyroidal under the influence of stressful life events is not a determining category, it cannot be foreseen and considerably depends on a person's character features, which constitute the personality structure. There is no such thing as a specific hyperthyroidal personality, but there are risky characteristics, features and behaviors, which in interaction of stressful life circumstances and the effect of available psychological mechanisms lead to the rise of hyperthyroidism. The typical group are middle-aged women, too sensitive, lacking self-confidence, who reacts intensely to any change that really or symbolically threatens their safety and their regular routine. The fear of being rejected and abandoned, generally the fear of separation is latently present in these people and in typical separation situations (getting married, the change of job, surroundings, divorce, separation from a child) it is somatically converted through the increased activity of the thyroidal hormone. Fukao et al. used psychological testing and found out it is people with marked features for

hypochondria, depression, paranoid obsession, psychastenia who are most predisposed for thyroidal somatisation (12).

Psychological changes in hyperthyreosis (Graves' disease) are mixed with the objective disease symptoms, are characterized by affective disphoria and stimulate the activity that is not commensurable with the spent energy and achieved effects. The main psychological content of Graves' disease is anxiety, which is a universal human emotion but in different life situations it is manifested in a totally individual way (13) Generally speaking, it occurs in the form of inner tension, and indefinite fear that has no special cause, so the rational defense mechanisms cannot be organized and therefore it is practically impossible to avoid the danger. Anxiety can have dual psychological and physiological identification. Cognitive alarm and the alarm of the vegetative nervous system influence the emotional event and start reactions that can be adaptive or maladaptive. A pathological reaction starts in the situations when the descend distribution of anxiety has become the only or the dominant channel for reducing the excessive tension, without the option of alternative discharge through motoric, verbal or social behavior (14). In case these channels get blocked there appears pathological strain and manifested reaction of the somatic systems at the periphery. Bodily manifestation accompanying anxiety appear in form of tachycardia, accelerated breathing, perspiration, shivering, nausea (15) The subjective perception of these bodily disorders increases the feeling of fear and anticipates the fear that it will reappear, which hermetically closes the circle (16). If the dysfunction of the vegetative and endocrine systems is chronic there appear fixed somatisations as the consequence of the permanent activity of the psychosomatic mechanism and continuous manifestation of somatic symptoms („bodily fear”) (17, 18).

Hyperthyroidism and anxiety disorder

Among numerous anxiety disorders covered by the criteria of the current DSM-IV classification that study the causes and effects to separate them from hyperthyreodism the most important are the GENERALIZED anxiety disorder (GAD) and panic disorder (PD). The clinical picture of hyperthyreosis at the beginning is very similar to anxious neurosis and often they cannot be easily distinguished, so the anxiety disorders are diagnosed only after hyperthyreosis is eliminated. The link between the anxious disorder and hyperthyreodism has an interactive relations, which is consistent with the controversial data from literature about cause and effect. The anxious disorder can be initiated by hyperthyreoidism, with various clinical manifestations, depending on the degree of thyroidal hyperfunction and reduced by antithyroidal therapy (19, 20). The overview of current literature in the article of radu Naomi Siman et. al points at the increased life prevalence of thyroidal hyperfunction in patients with GAD and PD and the recommended obligatory thyroidal screening (21). On the other hand, in

patients treated for hyperthyroidism and ophthalmopathy there has been registered a high prevalence of affective yet anxious disorders (22), and there are also authors who do not find any cause-effect relation between these two entities (23). Significant diagnostic and laboratory possibilities to examine thyroidal status in most cases do solve this differentiating and diagnostic dilemma, and when they are not present a good clinical doctor will sense the difference between the manic-disphoric mood and the critical, evidence disturbances of a patient with hyperthyreosis (24).

In rare and extreme cases thyroidal hyperfunction can lead to psychotic decompensation. In a thyrotoxic crisis, acute psychotic episodes are accompanied by delirium and hallucinations, while in cases of nonregulating hyperthyreosis and overdosing with thyroidal medicaments the conditions of depersonalization and derealization, agitated depression and manic behaviour have been described.

Hyperthyroidism and the quality of life

The quality of life determines the subjective experience of the psychical, physical and social position, measured by statistically valid questionnaires is a measure of personal good feeling (25). In patients with hyperthyroidism the quality of life is affected by somatic and psychical changes, which, if they last long, chronically drain out the patient, taking him/her from the hyperactive to the depressive position (26).

A particular effect on one's feeling bad has the relation towards one's appearance, which is influenced by bodily changes manifested by diffuse increase of thyroid gland and exophthalmus.

The thyroidal gland is anatomically located next to the respiratory and digestive pathways, which keeps disturbing the patient who is in a constant fear that its increase will lead to the interruption of respiratory communication lines and, consequently, endanger him vitally. Therefore an assortment of very diverse symptoms is generated that brings various bodily sensations in relation to the thyroidal gland. The patient starts paying careful attention to his organism, every moment expecting a somatic manifestation, which engages his creative energy, leads to social isolation and significantly reduces the quality of life (27).

Therapeutic recommendations

Medicaments used for treating hyperthyroidism and anxious disorders in many cases can have a dual effect (28). Their primary effect is either a reduced synthesis of thyroidal hormones or the alleviation of psychical symptomatology depending on whether thyrostatic, anxiolytic medicines or beta adrenergic blockers are used (29,

30). Lithium, which is used for stabilizing manic-depressive patients, prevents proteolysis and iodide delivering in thyroid gland and in some patients after a prolonged use can cause hyperthyroidism. (31).

Psychotherapy has been indicated in specific cases and in order to apply it it is necessary to reduced or completely stop the use of medicaments and establish the condition of remission. The aim of psychotherapy is to increase the patient's threshold to frustration, increase self-esteem and strengthen the feeling of security. The therapeutic success concerning separation fear and the authentic need for self-independence are the chief indicators of successful treatment (32).

Conclusion

Hyperthyroidism as a medical entity, with all its specificities presents a creative professional challenge because with the available diagnostics and therapy it is possible to cure it. The modern concept of treating this problem however admits that the greatest therapeutic efficiency can be achieved by the joined byomedical activity, evaluation of the psychosomatic disorder and the insight into the quality of life.

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