

## **HASHIMOTO'S THYROIDITIS IN HEALTH PSYCHOLOGICAL APPROACH**

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### **I. INTRODUCTION**

Hashimoto's thyroiditis is a relatively common chronic disease that can affect many areas of health. Most often it is diagnosed in adult young women who face challenges arising from the disease for decades. Even though those affected by this experience need clearer information and support at several points in the process of the disease, we cannot provide adequate results and examples neither around research or care. The main objective of this study is to outline, based on case management experiences, the main difficulties faced by those affected and to make recommendations for complex patient care.

#### **I.1. MEDICAL CHARACTERISTICS OF HASHIMOTO'S THYROIDITIS**

Hashimoto's thyroiditis is the most common autoimmune thyroid disease. Although geographical differences can be found in prevalence, it is on the rise worldwide and represents an average annual frequency of 0,003-0,015% (Ragusa et al., 2019). In 70-80% of cases, the condition occurs as asymptomatic, so it does not involve hypothyreosis (Ragusa et al., 2019; Ralli et al., 2018, 2020). Hashimoto's thyroiditis is characterized by strong family accumulation, the background of which has been confirmed as recessive genetic inheritance (Thomsen et al., 2020). Common environmental factors are playing a significant role and they are likely to have an impact through epigenetic modifications (Ralli et al., 2018).

From an immunological point of view, the cessation of immune tolerance is the main feature of the disease, as a result of which autoantibodies are produced against thyroid tissues, and greater infiltration of T lymphocytes into the thyroid gland is observed. As a result of the outlined immunological processes, inflammation, fibrosis and atrophy may develop in the tissues of the thyroid gland (Ragusa et al., 2019; Ralli et al., 2020).

The most commonly mentioned risk factors are ionizing radiation, the effects of certain viral infections and antiviral preparations, selenium deficiency, changes in the balance of female sex hormones, iodine surplus, selenium deficiency, vitamin D deficiency, increased stress levels, and an overly hygienic environment (Ragusa et al., 2019).

20–30% of patients have underactive thyroid glands, and the most common symptoms are related to fatigue, depression, putting on weight, somnolence, decreased concentration and muscle spasms; but physical changes in the thyroid gland can also cause symptoms such as deepening or hoarse voice or difficulty in swallowing (Ragusa et al., 2019). Clinical underactive function is treated by replacing the hormone thyroxine and, if indicated by autoimmune inflammation, the thyroid gland is surgically removed.

## **1.2. PSYCHOLOGICAL KNOWLEDGE ABOUT HASHIMOTO'S DISEASE**

The psychological literature on Hashimoto's thyroiditis is rather poor. The most extensive literature is on quality of life and the comorbidity of psychiatric/neurological disorders.

In the case of thyroid diseases, the deterioration of the quality of life is general, and it does not seem to depend specifically on the level of thyroid hormones, but rather on the degree of autoimmune processes (Groenewegen et al., 2021; Ott et al., 2011). Relevant research so far focused mainly on the question of whether different treatments can improve quality of life. In relation to the replacement of the hormone thyroxine, it has been shown to improve quality of life, but the effect depends primarily on whether the hormone replacement reduces comorbid symptoms and disorders (Al Quran et al., 2020). Studies related to surgeries shown that complete thyroid removal may be more effective in improving the quality of life than medication, which may be related to the possibility autoimmune processes being significantly reduced in the absence of the target tissue (Bektas Uysal & Ayhan, 2016). Although surgery often does not seem justified, for example because there is no clinical level of underactive thyroid gland, or because it is well treated with medication, studies show that it has a positive effect on the quality of life and reduces the overall cost of healthcare in such cases (Memeh et al., 2021; Promberger et al., 2014; Zivaljevic et al., 2015).

In the case of Hashimoto's thyroiditis, the widest range of psychological literature can be found clearly on the topic of comorbid disorders. Hashimoto encephalopathy is well documented (Matsunaga et al., 2019), which has the main characteristic that a group of auto-antibodies is also connected to the tissues of the central nervous system, thereby the inflammatory process taking place may cause neuropsychiatric symptoms (disturbed state of consciousness, decline in cognitive function, psychiatric symptoms, ataxia, tremor, chorea, seizures; bipolar disorder (Kupka et al., 2002; Mussig et al., 2005). In addition to the fact that autoantibodies can cause damage to nerve cells, accumulating and depositing immune complexes can also contribute to neuron destruction and dysfunction through inflammation of blood vessels and micro-thrombotic processes. The activation of glial cells and the inflammatory cytokines they produce also enter the circular process, thus strengthening the damage of neurons and the development of symptoms. In addition to the immunological mechanism, hormonal

pathways also “support” the process: elevated THS values commonly observed in Hashimoto's disease contribute to mood and cognitive symptoms, and elevated prolactin levels increase autoimmune mechanisms (Churilov et al., 2019; Leyhe & Müssig, 2014).

Among psychiatric disorders, the literature reports an increased frequency of anxiety disorders and mood disorders. Nearly one third of people diagnosed with Hashimoto's disease have anxiety or mood disorders, which is several times the frequency in the average population (Carta et al., 2005, 2004; Kirim et al., 2012). As these disorders are also more common in patients with normal thyroid hormone values, it is assumed that autoimmunity and changes in the HPA axis and circadian rhythm play a major role in vulnerability (Carta et al., 2004; Giynas Ayhan et al., 2014; Kirim et al., 2012). At the same time, reduced levels of thyroid hormones may also play a role in the difficulties of recovering from stress response, which may also increase the incidence of mood disorders. (Hage & Azar, 2012; Haggerty Jr. & Prange Jr., 1995). Thyroid hormones are also associated with neurotransmitter systems, especially norepinephrine and serotonin, so the lack of adequate levels of thyroid hormones in both the developing and mature brains can make it difficult to maintain a proper mood (Bauer et al., 2008). Although most of the studies focused on the detection of the frequency of anxiety and mood disorders, Hashimoto's thyroiditis also shows a link with general distress levels and, more broadly, with psychological difficulties and the amount of somatic symptoms (Müßig et al., 2012). And the only study referring to coping presented that dysfunctional coping (strong expression or denial of emotions, emotional and behavioral distancing, substance abuse) also predicts psychological disorders (Yıldız et al., 2017).

### **1.3. THE MAIN CHALLENGES OF HASHIMOTO'S DISEASE, BASED ON PRACTICAL EXPERIENCE**

In this paper I present Hashimoto's disease on the basis of working with a number of people involved, in relation to the patients' “experiences”, instead of outlining a specific case. This way I hope the areas, issues and challenges that patients face will be better outlined.

One of the most difficult stages of living with this disease, as with most chronic diseases, can be linked to the period of learning about the diagnosis. Since Hashimoto's disease is primarily diagnosed in young adulthood, most individuals experience a particularly traumatic event when, in their 20s and 30s, they are confronted with an autoimmune disease that according to our current knowledge will accompany them throughout their lives, often accompanied by other autoimmune phenomena and consequences beyond the thyroid metabolism. Reactions to diagnosis (or referring lab results) often include the thought of “what if they are wrong”; and in this case the person begins to collect information that seems to prove that this is not the case after all. It is difficult to accept several components in connection with the diagnosis according

to our experience; one of them is the fact of autoimmunity. In the public consciousness, autoimmune diseases are associated with rather negative, serious representations, one of the reasons being that among the many autoimmune diseases, those that are most well-known are those with clearly visible, easily perceptible symptoms and are more often severely progressing (e.g. polyarthritis, multiple sclerosis, type 1 diabetes), and those with less spectacular effects on the quality of life (e.g. psoriasis, coeliac, Sjogren's syndrome). Similarly, it can cause anxieties after receiving the diagnosis if the person is somewhat familiar with autoimmune diseases and knows that they are associated with each other – as this can increase the sense of threat even more. The representation related to autoimmunity also involves the fact that the person feels – and indeed this is happening on a biological level – that his own body, immune system has “let him down”, attacks and harms himself, which is always a more serious experience than a disease explained by external causes, since it can revive strong self-blame.

It is also very stressful that we consider the disease to be incurable, as we know it today, and the physicians themselves often say that “there is nothing to do, the process is going its own way”, and then, when the hormone-producing tissues die at such a level that we can talk about underactive thyroid glands in clinical terms, hormone replacement follows. Although from a medical point of view, apart from exceptional cases, the process does not require intervention up to a certain point, patients often experience this message as a “betrayal” due to the lack of complete and reassuring information, since it is very difficult to accept at a young age that they have to watch helplessly that their values are getting worse and that an increasing proportion of the thyroid gland's stock is being damaged. This type of message often prevents those affected from starting the necessary lifestyle change in a timely manner also, even at the level of prevention – which, of course, is not primarily intended to stop the autoimmune process, since we do not have adequate data on this possibility, but rather can help to counteract the more complex phenomena associated with the disease.

However, the impact of the information when receiving the diagnosis also depends on how educated the person is: less health-conscious people accept more easily that their main task is to carry out control tests, follow their condition and, if necessary, take HRT. Those who are more informed and are regular users of social media immediately start collecting information, and the different and contradictory opinions and inaccurate data can cause significant confusion in them, and further increase worrying and anxiety. Since there are many thyroid diseases, and not everyone is well aware of their own diagnosis, extremely harmful advice on lifestyle may also be found.

One of the important questions of the post-diagnosis period could be that Hashimoto's disease itself, in addition to affecting the functioning of the thyroid gland, can have other more general changes and consequences for the functioning of the whole organism. Can it affect the level of other hormones, more broadly the metabolic system, the functioning of the nervous system, and thus cognitive and emotional

functioning? Experience has shown that most endocrinologists do not address these issues or only tangentially (e.g. they say that “care should be taken because the patient will be inclined to gain weight easily” or that “it may be more difficult to get pregnant”), but rarely gives a satisfactory explanation that would prepare the person to understand where he/she will have a responsibility to manage his/her own health or condition. Although Hashimoto's disease is frequently diagnosed as a result of some other problem (e.g. significant weight gain, presupposed PCOS, fertility difficulty), and the person meets several specialists, he/she has difficulties understanding his/her condition. Or he/she should invest serious individual efforts and research into what is going on in his/her body in a more complex way, and whether he/she can do anything to “counteract” it.

There are also several reports of difficulties with treatment. Although regular lab tests and control tests also require time and effort, the majority of patients routinely do this after a while. The fact of getting medication in general is more challenging to accept: although we do not know the health-damaging effect of the replacement of thyroid hormones, many people are reluctant to take the prescribed medicine, which is probably due to a lack of adequate information. It can also be stressful if the prescribed hormone preparation is not to be taken in the same dose every day; in this case, in the absence of an appropriate strategy, it can be difficult to follow. There can also be “critical” periods when it is necessary to change the amount of hormone; it is important for the person to understand the reason for this and to accept the need for change.

In addition to medication, which is primarily aimed at replacing the missing thyroid hormone, the issue of the treatment of the autoimmune process may also be discussed. Since Hashimoto's thyroiditis most often means a quiet, slow autoimmune process, it is rare to intervene with drugs that target the immune system. If this is necessary due to the stronger autoimmune process, which also causes other symptoms, it is important to prepare properly and to explain the possible side-effects.

The autoimmune process not only leads to a low amount of thyroid hormone, but also, as a result of tissue damage, can also create deviations in the glandular tissue that also require constant monitoring; and if necessary, surgical intervention. Clarifying this and preparing for surgery can be a more stressful time in the patient's life.

The issue of treatment is also stressful from a non-medical point of view, especially for health-conscious people, since they often get to the point where they want to do something for themselves, or their lifestyle based on the information they “gathered”. These needs arise primarily in connection with dieting, alternative or complementary treatments and possibly physical activity. Of course, dieting is one of the most sensitive areas, as it involves three aspects. It is well known that iodine intake can affect the functioning of the thyroid gland, so one of the main questions of dieting is how much iodine one should consume. It is also known that in case of disorders characterized by

underactive thyroid gland, weight control is difficult due to a slowdown in metabolism, a significant number of people struggle with overweight, obesity, or that they need a lot of energy investment to regulate and maintain their body weight. The third cause that triggers a diet is the autoimmune process itself. As it has become more and more common that certain types of diets (gluten-free, dairy-free, meat-free) are able to reduce autoimmune processes, many people try or follow a special diet toward this goal. The literature does not yet provide enough consistent data on which diets can be really effective, and in the absence of proper guidance from the attending physician, or because of the “circulating” knowledge, it is very likely that the person will devote a great deal of energy and spend significant amounts on inefficient or even harmful diets.

In relation to lifestyle, mainly due to the increased risk of gaining weight, physical activity is still emphasized; however, the experience is that far fewer people are involved in regular exercise than who are trying different diets or alternative methods. Although it is often said as a medical suggestion that a weight increase should be avoided, genuine and meaningful support and help are rarely given to those affected to realize regular physical activity.

Living with the disease also affects other, more or less transparent areas of life, which are often reported by those affected. But these phenomena, difficulties and changes are rarely coming into the focus of the therapy; most often, even patients themselves do not understand how these affect their condition. In the introduction about the literature above we saw that anxiety, elevated stress levels, depressive mood, emotional irritability, and slowing cognitive functions are the most common of the comorbid psychiatric disorders – and if the person does not have sufficient information on how these “symptoms” and characteristics can be related to their physical condition, it can further increase the feeling of helplessness, feeling of insufficiency and anxiety.

It is more obvious when fertility is affected by the underactive thyroid gland; in such cases, it can also be seen that individuals have a greater motivation to try to “control” their Hashimoto's disease. This often means a stronger commitment to a general healthy lifestyle; diet, weight loss, exercise, stress management, or visiting a psychologist. The stakes are high in these situations/periods and people mobilize greater capacity to achieve the goal of childbearing.

As we have discussed, the difficulties of working with patients in health psychology have been outlined, which can serve as a starting point for trying to outline a treatment protocol. That's what we're trying to complete in the last chapter.

## **2. WHAT COULD BE THE ROLE OF A HEALTH PSYCHOLOGIST FOR PEOPLE DIAGNOSED WITH HASHIMOTO'S DISEASE?**

Although Hashimoto's disease is a fairly common pathology, both the literature summary and the experience with those affected show that it can be termed a neglected

area from the viewpoint of practical psychology. Thus, in the last chapter, I would like to focus on potential interventions that health psychologists and psychologists should do, based on the experience in the subject.

There are a number of unexplored areas of research in Hashimoto's disease. Since only the treatment-related quality of life and the frequency of comorbid neuropsychiatric disorders have been thoroughly studied, the relationship to various psychological structures remains unexplored. For example, we have scarce data on the quality of life besides biological indicators and treatments, nor on the characteristics and coping skills required for proper management of the disease. Psychological representations related to Hashimoto's thyroiditis have not been revealed yet, neither the way they can relate to experiences and to the management of the disease. Although the role of stress as a disease-inducing factor has not been confirmed so far, there is no data on how stress can be considered as a triggering factor or how it affects the development of the condition or the course of the disease. Naturally it would be important to follow the examination of the latter issue using longitudinal and logging techniques. Although the disease is often associated with physical changes (tendency to corpulence, dry skin, thinning hair, cosmetic problems, etc.), so presumably body image can also be affected, no studies have been found in the literature related to body image in the context of this topic. Similarly, the disease can strongly affect metabolism and energy levels, but we do not have any data on whether interception-related characteristics can be observed.

Lifestyle (especially diet, supplements and exercise) often occupies an important place in the minds of those affected, however no methodically well-planned research has been carried out that could help navigate the proposed lifestyle. A particularly relevant question is whether a gluten-free diet could reduce the occurrence of the disease, or – in case of an existing disease – reduce the occurrence of the symptoms and/or the extent of the autoimmune processes. Although investigations are taking place in this area (Mainardi et al., 2002; Passali et al., 2020), we do not have enough data, not even on whether it is appropriate to recommend avoiding gluten at all.

In practical and clinical work, we do not know of any system or protocol of care that has undertaken to integrate psychosocial aspects into treatment; thus, the last part of the study attempts to propose such recommendations.

Focusing on supporting the patients concerned, the tasks providing adequate and complex care can be arranged in different phases.

## **2.1. PREVENTION**

There is scarce data on the possibility of prevention, so we can only be very careful in our statements. Since there is an autoimmune process behind Hashimoto's disease, and as with most autoimmune diseases the immune-genetic background of the individual may be important, we cannot influence this kind of vulnerability among risk factors.

However, if Hashimoto's or other autoimmune diseases are known in the family, a general healthy lifestyle, support for the immune system and early screening can be important. Secondary prevention may also include recognition and diagnosis carried out in time: if an individual has other autoimmune diseases or health characteristics (e.g. overweight, PCOS, insulin resistance, celiac disease) that are often associated with Hashimoto's thyroiditis, appropriate monitoring or necessary lifestyle changes should be observed.

## **2.2. THE PROJECTS RELATED TO DIAGNOSES**

Working with patients clearly highlighted that the time around receiving their diagnosis is one of the most stressful periods for them, mainly due to the lack of adequate information. Thus, at the time when the diagnosis is communicated, or within a short period of time afterwards, appropriate education is vitally important. Education should cover a number of areas; the medical characteristics of the disease, understanding the basic principles of treatment, the fact that the person is at the beginning of a process, the possible more complex consequences, and the lifestyle changes that may be necessary. The most important part of education on the medical characteristics of the disease is, of course, carried out by the specialist, but a health psychology consultation is recommendable after receiving the diagnosis. Health psychology consultation offers a longer working period, during which it is possible to deepen the knowledge and understanding of the disease, to discuss concerns and to support the necessary lifestyle changes. It also allows to explore the factors that influence adherence and to increase the motivation for behavioral changes. If comorbid psychiatric disorders are suspected at the time of diagnosis, the health psychologist may also screen for them or transfer the person to a clinical psychologist/psychiatrist. We have seen that comorbid mood disorders are common, which can also be caused by the autoimmune process itself, so it is also important to rule out whether the mood difficulty can be explained by other mechanisms and characteristics.

If Hashimoto's disease is diagnosed as a result of another health problem or difficulty, the health psychology consultation should be adapted to this, for example to help individuals understand the related phenomena in a more complex way.

After receiving the diagnosis health psychology consultation can address the uncertainties related to dieting, make interventions based on scientifically supported results, thus supporting patients, for example with booklets containing basic guidelines on lifestyle.

The consultation can help reducing self-blame for the disease and support the development of an appropriate mental representation of the disease in support of the management of the condition. If the specialist feels that the representations of the person



need to be changed more seriously, it may be important to offer a few suitable therapeutic sessions in addition to the consultation.

The primary objective of the post-diagnosis health psychology consultation is therefore to educate, to provide the most accurate knowledge, thereby reducing uncertainty and anxiety, and— through all this process —to increase the self-efficacy and control of those affected.

### **2.3. PSYCHOLOGICAL ISSUES ARISING DURING THE TREATMENT PROCESS**

In case Hashimoto's disease is well-managed, additional psychological help is rarely needed, however, psychological monitoring may also be important due to the development of possible comorbid disorders. Of course, the attending physician often sees the psychological way it works, but some questionnaires can also make his/her work easier. If these patients complete them before the medical visit (even online), it can be quickly attained whether it may be necessary to provide the patient more extensive support. A depression scale or a quality of life questionnaire specifically designed for thyroid diseases are recommended. There are several versions available, the official Hungarian version of ThyPro39 (Quality of Life Questionnaire for Patients with Thyroid Disease) (Watt et al., 2015) is in the process of being translated. Several subscales of the questionnaire indicate whether an area of quality of life is affected – and need for special attention, possibly psychological support. Subscales include Struma/goiter symptoms; thyroid underactive symptoms, thyroid overactivity symptoms, eye symptoms, fatigue, cognitive difficulties, anxiety, depression, emotional vulnerability, effect of the disease on everyday life, effect of the disease on social life, effect of the disease on sexuality (not included in the abbreviated version), cosmetic difficulties and total score (used only for the abbreviated version). The questionnaire has been abbreviated and adapted to several languages (Boronat et al., 2018; Watt et al., 2014).

During the treatment, it can be a critical period when the autoimmune process itself reaches a level that requires special medication and intervention; in this case, the aim may be to manage side effects, to maintain proper adherence, and to strengthen confidence in the patient's health and body.

It is also a critical period if surgical intervention is required due to background processes (e.g. to reduce the autoimmune process or to reduce the chance of malignant processes, or to alleviate symptoms that interfere with everyday functions, for example swallowing). If the attending physician considers that the person has difficulties accepting the need for surgery or is anxious about the procedure, offering psychological support is recommended.

Although it is common for Hashimoto's disease to be discovered in connection with other health problems, it is also possible that this diagnosis is made first, and the person later encounters other difficulties that may be related to underactive thyroid gland,

such as insulin resistance, PCOS, fertility problems. In such a case, especially if the patient has already developed a relationship with a health psychologist due to the management of thyroid disease, it is also worth offering further consultations aimed at strengthening resilience among new challenges.

However little is known about the effect of stress, the symptoms themselves, such as uncertainty and the deterioration of the quality of life are definitely associated with increased tension, as with other immunopathological disorders, teaching and supporting stress management techniques can be especially useful. Different relaxation techniques and mind-body therapies can be found in literature, which can help balance the immune system; for example, by reducing inflammatory mechanisms (Bower & Irwin, 2016; Morgan et al., 2014). Due to changes in body and body image, mind-body therapies are particularly recommended, but unfortunately we do not have any data on how effective they are in case of Hashimoto's disease, since unfortunately no psychological interventional effect-study literature is available in this field.

### 3. SUMMARY

This paper aimed to present psychological correlates of Hashimoto's thyroiditis as widely as possible. Although working with patients clearly suggests that health psychological support may be needed at various points and regarding several issues, these aspects are not emphasized in the literature or treatment protocols. The author hopes that the research suggestions and treatment proposals presented, all based on scientific and practical evidence, will meet with openness by professionals. Hopefully, a more determined observation of the biopsychosocial approach will also be launched in a pathology that has hitherto been neglected from a health psychological point of view.

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