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Original Article PSYCHIATRY

Thyroid functions in patients with hypochondriasis

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ABSTRACT

OBJECTIVE: No studies of thyroid-related hormone levels have been conducted in patients with hypochondriasis to date. The aim of this study is to examine thyroid-related hormones in patients with hypochondriasis.

METHODS: Sixty patients with hypochondriasis and 138 healthy controls were included in this study. Patients with hypochondriasis who applied to the psychiatry outpatient clinic and met the study criteria and healthy controls were determined by chart analysis.

RESULTS: According to the results of the comparisons, TSH, fT3, and fT4 levels did not show a statistically significant difference between hypochondriasis patients and healthy controls.

CONCLUSION: Thyroid hormone levels are not associated with hypochondriasis.

Keywords: FT3; FT4; hypochondriasis; TSH.

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Hypochondriasis, also known as no disease, hypochondria, health phobia, or health anxiety, is a somatoform disorder [1]. It is defined as the fear of contracting a serious illness or preoccupation with the thought of having a serious illness due to a misinterpretation of bodily symptoms despite repeated medical evaluation and reassurance. To date, psychodynamic and other psychosocial explanations and learning-oriented approaches have focused on the emergence of hypochondriasis. As in other somatoform disorders, neurobiological and neuroanatomical dimensions remain weak in the pathophysiology of hypochondriasis [2–4]. In the studies of a group, it was determined that hypochondriac patients had significantly smaller mean left and right orbitofrontal cortex, smaller pituitary, and greater left thalamus volumes compared with healthy controls, without any difference concerning caudate and anterior cingulate volumes for both sides between groups, and found that there was a significant relationship between the duration of illness and left orbitofrontal cortex and left thalamus volumes [2].

There are important phenomenological similarities between obsessive compulsive disorder (OCD), which is classified as an anxiety disorder and hypochondriasis [1]. Both disorders share a number of features such as intrusive thoughts and repetitive checking [5]. Finally, the debate was "Is hypochondriasis an anxiety disorder?" reached the question, because the underlying cognition in hypochondriasis may be more compatible with an anxiety disorder [6]. The previous neuroimaging studies in hypochondriasis and OCD support this relationship [2, 7].

As it can be understood from these similar findings, it is seen that OCD and hypochondriasis may share similar etiopathogenetic resources, and in this context, it is useful to recall previous articles on thyroid functions in OCD patients [3, 8–10].

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MATERIALS AND METHODS

This is a retrospective study comparing outpatients or inpatients admitted to Firat University Hospital Psychiatry outpatient clinic and diagnosed with hypochondriasis according to DSM-5 with normal healthy controls. The study was approved by the Kanuni Sultan Suleyman Training and Research Hospital Ethics Committee with the decision number 2021.07.226.

Patients with hypochondriasis were selected from patients who met the criteria for this study by a senior psychiatrist (M.N.N.) using chart reviews. All patients were diagnosed with hypochondriasis according to the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I) [11]. Exclusion criteria were having a clinically significant unstable disease such as cardiovascular, pulmonary, endocrine, neurological, gastrointestinal, infectious, and oncological diseases or deficiencies such as hepatic or renal failure, history or current use of any hormone medication, use of oral contraceptives, intellectual disability, presence of pregnancy or breastfeeding, any history of carcinoid syndrome, and presence of substance abuse or addiction. Healthy control group matched with patients for age, sex, and socioeconomic status was also determined using chart analysis. The same exclusion criteria were applied for comparison of healthy controls, and they were required to have no history of any Axis I psychiatric disorder in themselves or their first-degree relatives.

Venous blood samples were obtained from forearm veins to analyze thyroid related hormone levels from patients and control subjects. Thyroid related hormone levels were measured using an autoanalyzer (Coulter Max M, Coulter Electronics Ltd, Luton, UK) placed in the central biochemistry laboratory. System normal limits were 0.5–5.5 mg/dl for TSH, 1.57–4.71 mg/dl for fT3, and 0.89–1.76 mg/dl for fT4.

Statistical Analysis

Statistical analyzes were performed using SPSS software (IBM statistics for Windows version 25, IBM Corporation, Armonk, New York, USA). Values are expressed as mean±standard deviation. For all analysis types, an alpha level of 0.05 was considered statistically significant. Levels of thyroid hormones were analyzed using an independent t-test to compare patients with hypochondriasis and healthy subjects. Chi-square test was used to evaluate categorical variables. Pearson correlation test was used for the analysis of correlational relationships.

Highlight key points

- Approaches to date have focused on the occurrence of hypochondriasis.
- This study is the first report on thyroid-related hormone levels in patients with hypochondriasis.
- Thyroid hormone levels are not associated with hypochondriasis.

Table 1. Age, gender and thyroid related hormone levels of the groups

P>0.05	Patient (60)	Control (138)
Age (years)	36.92±12.19	35.50±8.18
Gender (F/M)	28/32	59/79
TSH (mg/dl)	1.84±1.08	1.54±1.25
fT3 (mg/dl)	3.31±0.68	3.32±0.54
fT4 (mg/dl)	1.20±0.27	1.18±0.16

F: Female; M: Male; TSH: Thyroid stimulating hormone.

RESULTS

Sixty patients with hypochondriasis aged between 18 and 65 years and 138 healthy control subjects were included in the study. Since patients with hypochondriasis and healthy controls were carefully matched, independent sample t-test and Chi-square tests did not differ significantly in demographic variables such as age, gender, and socioeconomic status (p>0.05) (Table 1).

When TSH, fT3, and fT4 levels were compared between hypochondriasis patients and healthy controls, their values were found not statistically significant (p>0.05) (Table 1). On the other hand, there was no difference in any of the hormone levels in group comparisons according to gender (p>0.05). In addition, no correlation was found between any of the evaluated variables (p>0.05).

DISCUSSION

This study is based on the idea that hypochondriasis is clinically and phenomenologically closely related to OCD. The reason to expect this is due to some previous studies on patients with hypochondriasis that revealed similar findings with OCD [5, 6, 8, 10]. These findings are important to support the idea that OCD and hypochondriasis may share similar neuroanatomical changes. In addition to those listed above, the increased P wave distribution in

patients with hypochondriasis compared to healthy individuals suggests that patients with hypochondriasis may have autonomic dysfunction [12], and the same findings were found in patients with OCD [13].

Thyroid functions were evaluated retrospectively in patients with OCD before, and it was revealed that there was no difference in TSH values between patients without additional disease and healthy controls, and there was a significant decrease in fT3 hormone and fT4 hormone levels in patients. This suggests that altered thyroid hormone levels may be associated with the pathophysiology, or at least maintenance, of OCD [9].

While planning this study, it was assumed that thyroid-related hormone levels would also change in hypochondriasis. However, in this study, TSH, fT3, and fT4 values in patients with hypochondriasis were compared with healthy controls and it was shown that there was no statistically significant difference between them. To the best of our knowledge, this is the first report of thyroid-related hormone levels in patients with hypochondriasis.

Hypochondriasis and OCD appears to be different disorders, at least in terms of neuroendocrinological dimension.

Meanwhile, the limitations of this study should be noted when evaluating the results. First, this research is limited due to its retrospective design. Second, there are no other biochemical parameters related to thyroid function problems. It is a fact that no evaluation has been made about thyroid antibodies (according to cost and ethical rules). Finally, it should also be noted that despite various factors that may affect thyroid hormone values, only absolute thyroid-related hormone levels are evaluated.

In conclusion, this study showed that, contrary to the first hypothesis, there was no difference between patients with hypochondriasis and healthy controls in terms of fT3, fT4, and TSH hormone levels. However, it draws attention to the need for prospective studies with larger samples, since thyroid hormones may affect the serotonergic system in the adult brain [10, 14–17].

Ethics Committee Approval: The Kanuni Sultan Suleyman Training and Research Hospital Research Ethics Committee granted approval for this study (date: 29.07.2021, number: 2021.07.226).

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