conference abstract *observational* *people*

Thyroid inflammation linked to anxiety disorders

Patients with autoimmune inflammation of their thyroid may be at greater risk of developing anxiety, according to a study being presented at e-ECE 2020. The study found that people with anxiety may also have inflammation in their thyroid gland that can be reduced by taking the non-steroidal anti-inflammatory, ibuprofen. These findings suggest that thyroid function may play an important role in the development of anxiety disorders and that thyroid inflammation should be investigated as an underlying factor in psychiatric disorders, such as anxiety.

At present, up to 35% of the young population (25-60 years) in developed countries have an anxiety disorder. Anxiety can have a severe impact of people's quality of life and ability to work and socialise, and anti-anxiety medication does not always have a lasting effect. Current examinations for anxiety disorders usually focus on dysfunction of the nervous system and do not take into account the role of the endocrine system.

The thyroid gland produces the hormones thyroxine (T4) and triiodothyronine (T3) that are essential for regulating heart, muscle and digestive function, brain development and bone maintenance. Autoimmune inflammation in the thyroid occurs when our bodies wrongly produce antibodies that attack the gland and causes damage. Recent studies indicate that anxiety disorders can be associated with the dysfunction of the thyroid gland. Therefore, it is important to understand how this may contribute to anxiety, so that patients can be treated more effectively.

Dr Juliya Onofriichuk from Kyiv City Clinical Hospital investigated thyroid function in 29 men (average age 33.9) and 27 women (average age 31.7) with diagnosed anxiety, who were experiencing panic attacks. Ultrasounds of their thyroid glands assessed thyroid function and levels of thyroid hormones were measured. The patients with anxiety showed signs of inflammation of their thyroid glands but their function was not affected, with thyroid hormone levels all within the normal range, although slightly elevated. They also tested positive for antibodies directed against the thyroid. Treatment for 14 days with ibuprofen and thyroxine reduced thyroid inflammation, normalised thyroid hormone levels and reduced their anxiety scores.

"These findings indicate that the endocrine system may play an important role in anxiety. Doctors should also consider the thyroid gland and the rest of the endocrine system, as well as the nervous system, when examining patients with anxiety," Dr Onofriichuk explains.

This knowledge could help patients with anxiety receive more effective treatment that improves thyroid function and could have a long-term positive effect on their mental health. However, sex and adrenal gland hormones were not taken in to account in this study, and these can also have a serious effect on anxiety.

Dr Onofriichuk now plans to conduct further research that examines the levels of thyroid, sex and adrenal hormones (cortisol, progesterone, prolactin, oestrogen and testosterone) in patients with dysfunctional thyroid glands and anxiety disorders. This research aims to help understand more clearly the role of the endocrine system in the development of anxiety and could lead to better management of anxiety disorders.

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Abstract

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Anxiety Disorders in Patients with Autoimmune Thyroiditis

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To date, up to 35% of the young population (25-60 years) in developed countries are subject to anxiety disorders. The use of anti-anxiety agents in clinical practice does not always lead to a lasting effect.

The study included patients who initially consulted a neurologist or psychotherapist. With panic attacks. On the Anxiety and Depression Rating Scale (HADS), all patients received 11 points or more. The use of anti-anxiety drugs gave a short-term effect with subsequent deterioration. The study group included 76 patients with anxiety disorders, men-29 (age 33.9 years), women-47 (age 31.7 years). The whole patient an ultrasound of the thyroid gland; to assess the state of thyroid function, the levels of thyroid-stimulating hormone, free T3 and T4 in serum were studied. In all patients, titers of antibodies to tyrnoglobulin and to thyroid peroxidase were determined.

According to the results of ultrasound, it was revealed that the total thyroid gland in 55 (72%) patients was within the age norm, in 21 (28%) patients it exceeded the norm by no more than 20%. In 71 (95%) patients, an increase in the intensity of blood flow in the gland was recorded. According to laboratory results, 76 (100%) patients had free T3 (2.5-4.3 pg/ml) and free T4 (0.93-1.7 ng/dl), which is an indicator of the norm. The level of TSH in 44 (58%) patients was within the normal range (0.4 - 4.0 μMU/ml) and in 32 (42%) it was within the range of 4.1-6.5 μMU/ml. Tiroglobulin was normal in all patients. All patients had anti-TPO (35-1000 IU/ml).

Patients with increased blood flow in the gland, but with normal TSH, 39 (44%) people were prescribed NSAID (ibuprofen 200 mg) twice a day for 14 days. NSAID (ibuprofen 200 mg) twice a day for 14 days and thyroxine at a dosage of 25-50 μg were prescribed to patients with increased blood flow in the gland and increased TSH 32 (42%). for 8 weeks. After that, an ultrasound of the thyroid gland and laboratory tests were performed.

During the control, the blood flow in the gland decreased in 60 (79%) patients. TSH levels normalized in 30 (39%) patients. With the HADS scale in 71 (95%) patients, the anxiety level ranged from 4-8, which is a normal indicator, while patients did not receive anti-anxiety drugs.

All patients with anxiety disorders need to check the function of the thyroid gland, since its disorders can lead to psycho-emotional disorders.

Notes for Editors

1. The poster "*Anxiety Disorders in Patients with Autoimmune Thyroiditis*" was presented online during e-ECE 2020 on Sunday 6 September.

2. e-ECE 2020 was held online on the 5-9 September. Catch up on ESE On-Demand.

3. The European Society of Endocrinology was created to promote research, education and clinical practice in endocrinology by the organisation of conferences, training courses and publications, by raising public awareness, liaison with national and international legislators, and by any other appropriate means.