

RELATIONSHIP OF RHEUMATOID ARTHRITIS WITH THYROID DISEASES

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Summary: *Systemic connective tissue diseases in patients are one of the urgent problems in cardiorheumatism. In recent years, the widespread prevalence of rheumatoid arthritis among diseases of the connective tissue system and the development of disability in patients indicate the relevance of this disease. The development of disability in patients means that this disease is not only a medical, but also a social problem. In some cases, damage to internal organs may also occur, and many complications may develop. Approximately half of patients develop disability 3-5 years after the onset of the disease. Therefore, early diagnosis of this disease is very important. The thyroid gland is very important in the body, it ensures brain activity, metabolism, bone growth, the immune system, physical and mental development, puberty, adaptation and other reactions. Dysfunction of this gland leads to goiter, hypothyroidism, hyperthyroidism and other diseases.*

Keywords: *hypothyroidism, rheumatoid arthritis, connective tissue diseases, hyperthyroidism.*

Enter Rheumatoid arthritis (RA) is an autoimmune disease in which the immune system attacks its own healthy tissue. This reaction causes what is called autoimmunity and attacks the layers of the joints, causing severe inflammation (painful swelling). RA can affect many organs, including the skin and heart. Research shows that many people with RA suffer from hypothyroidism. And the connection is similar in both cases because the thyroid gland is very accessible to RA in people with the disease. Here's what you need to know about an underactive thyroid and how it relates to rheumatoid arthritis. Your thyroid is a small, butterfly-shaped gland in your neck that has two lobes on either side of your trachea (windpipe). Normally, a thyroid stone is not visible or palpable in the neck. The thyroid gland produces and stores hormones for regulation (cells produce their own metabolism). Thyroid hormone is also very important for the growth and development of the human body. Thyroid hormone regulates the production of many structures, releasing the amount of thyroid hormone to the participant.

Materials and methods Studies have shown that people with rheumatoid arthritis (RA) are more likely to develop thyroid diseases such as hypothyroidism. According to Eric Matteson, MD, rheumatologist and professor of medicine at the Mayo Clinic in Rochester, Minnesota, "It is estimated that 15–25% of patients with RA will develop thyroid disease during their lifetime." By comparison, 10 to 12 percent of adults in the general population develop thyroid disease. The relationship seems to go both ways: People living with autoimmune thyroid disease have a higher risk of developing rheumatoid arthritis. In

about 14 percent of people with Hashimoto's thyroiditis, the immune system attacks the thyroid gland, often leading to hypothyroidism, another autoimmune disease that often causes rheumatoid arthritis. Although the connection between the two conditions is not fully understood, experts know that having one autoimmune disease increases your risk of developing the other. "Patients with rheumatoid arthritis are more likely to develop other autoimmune diseases, including autoimmune thyroid dysfunction," says Dr. Matteson. "Clutching is associated with a systemic abnormal response of the immune system, leading to involvement of other organ systems." Another possible connection: There may be a shared genetic predisposition to rheumatoid arthritis and autoimmune thyroid disease.

Findings and Analysis The autoimmune thyroid disease Hashimoto's thyroiditis, also known as hypothyroidism, is more commonly diagnosed in people with RA than in the general population. Graves' disease, which causes hyperthyroidism, can also occur in people with RA. For many people, rheumatoid arthritis is the first diagnosis, but it doesn't always start early. Reports say it is often difficult to know which comes first because thyroid symptoms, like early RA symptoms, can include fatigue, body aches and other nonspecific symptoms. RA can be diagnosed when a person experiences joint pain. Only then do some doctors think to diagnose thyroid problems. Hashimoto's disease occurs when the immune system reacts with autoantibodies to thyroid cells, interfering with their ability to produce thyroid hormones. How the two conditions are related is not yet fully understood, but shared genes may play a role in susceptibility to autoimmune diseases. Genetically induced autoantibodies are common in people with rheumatoid arthritis, and autoantibodies also mediate autoimmune thyroid disease, Wang said. "The same pathway controlled by each of these diseases can lead to other autoimmune diseases," Dr. Matteson said. "When you have an underactive thyroid, you may feel very tired, similar to rheumatoid arthritis. Everyone thinks it's rheumatoid arthritis, so no one thinks to look for alternative causes. "The symptoms should lead us to think that the thyroid gland is not working properly, and it is advisable to check the thyroid function with blood tests." Sometimes problems related to the thyroid gland "are discovered by chance. A complete blood count can be done and an underactive thyroid gland can be detected." Alternatively, sometimes a person becomes hypothyroid and their pain gets worse and they may be diagnosed with rheumatoid arthritis. Thyroid function blood tests for thyroid-stimulating hormone and free T4 levels are the best way to detect thyroid problems. Hypothyroidism is relatively easy to treat with synthetic thyroid medications. Hyperthyroidism is a little more complicated, but there are treatments for the condition. Often, a rheumatologist will prescribe antithyroid drugs or the person should be referred to an endocrinologist. Additionally, antithyroid drugs do not interact with rheumatoid arthritis medications, so both conditions can be treated simultaneously and successfully. Doctors say it is always ideal to diagnose thyroid disease at the earliest stage. This may also be important for a person with rheumatoid arthritis. Medical studies have shown that rheumatoid arthritis patients with thyroid disease are significantly more vulnerable to rheumatoid arthritis

treatment after four months than patients without thyroid problems, and researchers believe that the presence of thyroid disease in patients with rheumatoid arthritis is a sign of more aggressive rheumatoid disease. the output it gives. Some overlapping symptoms include swelling around the feet and legs, muscle discomfort, and weight gain. “If a person with RA is experiencing unusual fatigue and weight gain, these symptoms and signs should lead us to believe that their thyroid is not working properly, and it would be appropriate to check their thyroid function with blood tests.” “There is good scientific evidence that antithyroid drugs do not interfere with medications for rheumatoid arthritis, so both conditions can be treated simultaneously and successfully,” he adds. The diseases can appear in any order or occur simultaneously, Matteson says. “Someone may have rheumatoid arthritis and need to be treated, and then their rheumatologist can do a blood test and find an underactive thyroid,” she notes. Or someone may have hypothyroidism and increasing joint pain and later be diagnosed with rheumatoid arthritis. Often, blood tests are the only way to determine which disease is causing the symptoms. But, Matteson warns, many people with hypothyroidism do not have RA. “We don't typically screen for RA in the absence of symptoms.”

Conclusions Our study shows that thyroid dysfunction is very common in patients with RA. Based on our findings, it is recommended that treatment and follow-up of patients with RA include testing for thyroid autoantibodies and thyroid dysfunction. Further research is needed to understand the mechanism of the relationship between thyroid function and RA.

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