AUTOANTIBODIES

How Autoantibodies Contribute to Autoimmunity

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Autoantibodies appear long before autoimmune diseases develop. Learn about their role in disease and remission.

Biochemical Processes

Even when we're sound asleep or comatose for that matter, our body remains in a dynamic state. By this I mean that at any given time hundreds of thousands of biochemical reactions are constantly taking place within our body's organs and cells. These reactions, which include hormone and enzyme production, all contribute to bodily health.

Immune System Activity

Some of the most amazing reactions include those of the immune system. The immune system's primary cells, the white blood cells, are constantly guarding us against infection and malignancy by producing antibodies. Antibodies are special proteins that can attack the very substance that triggered their development. For instances, antibodies produced against the polio virus can attack and destroy the polio virus during a subsequent exposure, preventing future disease development.

When the immune system is weak and ineffective it can stray from its intended course and produce autoantibodies. Autoantibodies are antibodies directed at the body's own (self) cellular components. Most autoimmune disease are caused when specific autoantibodies develop and begin to injure the body's tissues and cells.

Nature of Antibodies and Autoantibodies

Because they are made of protein molecules, antibodies and autoantibodies eventually break down and leave the body unless their production persists. Most infectious agents and vaccines are known to cause long-term antibody production. Most autoantibodies remain in the blood circulation as long as the autoimmune disease process remains active.

The process of autoantibody production typically persists or increases when the body is exposed to certain environmental triggers including stress. Specific environmental triggers are known to cause certain autoimmune diseases. For instance, silica is known to trigger scleroderma, and imbalances of dietary iodine, including both excess intake of dietary iodine and iodine deficiency, are known to trigger autoimmune thyroid disease.
Assisting with Diagnosis and Treatment

Specific autoantibodies are seen in specific autoimmune disorders. Testing for these antibodies in blood is useful for diagnosing specific diseases and for monitoring their prognosis and response to treatment. Treatment for autoimmune disorders includes treatment used to reduce or ameliorate symptoms and treatment designed to temporarily slow down and heal the immune system.

Recent studies show that therapies that reduce the production of the antibodies that destroy pancreatic cells are most effective in the early stages of diabetes. Before the disease progresses, interventions that target the cause of disease can alter the disease course, reducing the chance of disease progression.

Flares and Remission

In many conditions, including systemic lupus erythematosus and autoimmune thyroid disorders, levels of autoantibodies tend to rise during acute flares of disease and fall during periods of remission. The typical pattern in the early stages of most autoimmune diseases is a waxing and waning of symptoms. Symptoms are known to worsen and autoantibody titers rise during periods of stress and when the immune system is stimulated by seasonal and food allergies.

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