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Research Article

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Autoimmune Diseases: The Silent Epidemic Facing Humanity

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Abstract

Environmental and lifestyle changes, outbreaks of infections, the introduction and use of insufficiently tested gene therapy products under the pseudonym of "vaccines," such as the case of ModRNA products which are still being administered to people, have increased the prevalence of autoimmune diseases. If we want to address this epidemic, let's start acting accordingly.

Keywords: *autoimmunity, immune tolerance, autoimmune diseases.*

At some point in their lives, a person might have a one in five chance of developing an autoimmune disease. The odds are higher if you are female, have a genetic predisposition to autoimmunity, or are exposed to certain contaminants. These diseases encompass over 100 costly and lifelong conditions, including type 1 diabetes, rheumatoid arthritis, systemic lupus erythematosus (SLE), scleroderma, and multiple sclerosis. They are often difficult to diagnose in early stages and currently impossible to cure.

As a person's own immune system attacks their body instead of microbes or cancer cells, they may experience chronic fatigue, chronic pain, drug dependence, depression, and social isolation. These symptoms impact mental health, ruin promising careers, destroy lives, and often tear families apart. As a medical scientist, we have seen people search for decades to identify the source of their illness and continue to suffer after receiving a diagnosis that leaves them with few effective treatments.

Autoimmunity is an epidemic. To prevent it from destroying so many lives, we urgently need to better understand these diseases and find more effective ways to prevent, diagnose, treat, and cure them.

In the United States, the exact number of people with autoimmune diseases is unknown, and total figures depend on whom you ask; there is no national registry or systematic method for collecting such data, and current totals are extrapolated from other countries, such as Denmark and Italy, which have records but do not reflect the diversity of the US population. Some estimate that there are at least eight million people in the United States with psoriasis, four million with Sjogren's disease, and three million with inflammatory bowel disease, including Crohn's disease and chronic ulcerative colitis. Most autoimmune diseases are diagnosed in increasing amounts, ranging between 3 and 12 percent annually worldwide.

We are also finding more people with autoantibodies: proteins from the immune system that, instead of ignoring our cells and organs, treat them as invaders. Autoantibodies are markers of the presence or possible development of autoimmune diseases, and better physician training is needed in their indication and interpretation of results.

Recent research indicates that one type of autoantibody called antinuclear antibodies (ANA) increased by almost 50 percent in the US in less than 30 years. This is not simply because more people are being examined. Even more worrying is that teenagers in the study experienced an almost 300 percent increase between 1988 and 2012. Many of these children may never reach their full potential because battling chronic diseases will alter their lives. It is important to emphasize that about 40% of healthy individuals over 40 years old may have low-titer ANA+ and not necessarily indicate an autoimmune disease (in all these cases, it is suggested to consult with a specialist experienced in autoimmune diseases).

Research suggests that these increases in autoimmune diseases are related to significant changes in our environment and lifestyles, including alterations in diet and increases in obesity, lack of sleep, stress, air pollution, exposure to toxic chemicals, and infections. We still do not know if these factors cause or only trigger autoimmunity, but often, when autoimmune diseases are found, these changes are also present.

Autoimmune diseases are also among the most expensive to treat. In 2001, the last year with available data, the National Institutes of Allergy and Infectious Diseases (USA) observed 20 million people diagnosed with 29 autoimmune diseases and estimated the cost of treating them to be over $168 billion, based on the value of the dollar in 2023. This is what the United States spent last year on the Departments of Homeland Security and the Interior combined.

We have the opportunity to start addressing these problems. Last year, the National Academies of Sciences, Engineering, and Medicine reported on the state of autoimmune disease research, at the behest of Congress. Based on the report, Congress issued a directive for $10 million to establish an Autoimmune Disease Research Office within the Office of Research on Women's Health at the National Institutes of Health (NIH). This is the minimum, and an office within an office within the NIH is fine,

but just as the National Cancer Institute is dedicated to cancer research, the scope of autoimmunity demands the same. A single institute dedicated to autoimmune diseases would harmonize and focus research and prevent duplication of efforts.

Therefore, one urgent measure is to encourage newly graduated physicians to receive very good training in the diagnosis and management of autoimmune diseases: spend 2 to 3 years in internal medicine and then 2-3 years in a specialty in Clinical Immunology at internationally recognized institutions that are medical centers of reference for autoimmune diseases. In my experience and opinion, neither training in internal medicine alone nor solely specializing in Clinical Immunology provides comprehensive training that equips the physician for optimal diagnosis and management of autoimmune diseases.

It is also urgent, first, for effective research, that all people who may have an autoimmune disease, healthcare providers, and researchers use a set of internationally agreed-upon definitions and concepts. Currently, there is no consensus on the composition or limits of the terms autoimmune, autoinflammatory, immunomediated, or immunodeficiency diseases. These terms are broad, and different groups use them differently, making it difficult to measure, track, and study them efficiently.

Secondly, to define the full scope of the autoimmune problem, we need to know how many people are affected, where they are located, and how these figures and locations change over time. We should create national autoimmune disease reporting systems, similar to the registry that exists for cancer.

Thirdly, and most importantly, we need a global and inclusive strategy to address this epidemic. Instead of autoimmune research being conducted in a central institute with a central mission, strategy, and framework, scientists studying these diseases are dispersed across 13 institutes and centers throughout the NIH. These groups need to coordinate their efforts to make discoveries that address these diseases as a class.

People with autoimmunity, their families, advocacy organizations, healthcare providers, researchers, funding agencies, and pharmaceutical companies should organize internationally to address the global autoimmune epidemic by supporting registries, strategies, and funding mechanisms to improve the diagnosis, treatment, and prevention of autoimmune diseases.

The global autoimmune epidemic has received very little attention and resources for too long. The information we have indicates that the cost of managing this epidemic is increasing dramatically. The price of inaction will be profound, both in terms of human suffering and healthcare costs. It is still possible to shape a future where autoimmune diseases decrease or even become a thing of the past. But to achieve this, we must act now, urgently and decisively.