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NIH Podcast Provides Insights on Autoimmune Diseases and their Impact on Women

Your body's immune system protects you from disease and infection. But if you have an autoimmune disease, your immune system attacks healthy cells in your body by mistake. Autoimmune diseases are a category of disorders that can affect just about every organ system in the body--from hair to toenails--and are often chronic diseases that can go on for a lifetime.

The NIH's Office of Research on Women's Health monthly podcast, "Pinn Point on Women's Health," provides updates on women's health research, and is hosted by Vivian W. Pinn, M.D., director of NIH's Office of Research on Women's Health. This month, Dr. Pinn interviewed Dr. Robert Carter, deputy director of the National Institute of Arthritis and Musculoskeletal and Skin Diseases, and an expert in the field of autoimmune diseases.

"Although they don't get the publicity of cancer or sudden heart attack, the burden of these diseases is enormous because they affect a lot of people and go on for a lifetime," said Dr. Carter. "And there is something about being female that leads you to a higher risk for many autoimmune diseases."

An autoimmune disease can be isolated (affecting only the thyroid, for example) or systemic, such as rheumatoid arthritis, lupus and scleroderma. The diseases may also have flare-ups--when they get worse--and remissions, when they seem to disappear. The diseases do not usually go away, but symptoms can be treated. They also tend to run in families, and African-American, Hispanic-American, and Native American women have a higher risk for some autoimmune diseases.

"Looking at sex and gender differences has provided researchers with many clues," said Dr. Carter. "The presence of female hormones as well as the fact that women have two X chromosomes may play a part in contributing to the development of an autoimmune disease."

Lupus can be a particularly devastating and even fatal autoimmune disease that primarily affects women of all ages. It is defined as a constellation of problems that can affect the skin, kidneys, lungs, and gut.

"From a patient care standpoint, lupus is a huge burden for families," said Dr. Carter, "And for the physician it's a real clinical challenge, and from the research side, it's both

extremely fascinating disease because of its complexity, and a challenge in terms of developing new therapies. We don't yet understand it well."

Lupus has many symptoms. Some common ones are:

- Joint pain or swelling
- Muscle pain
- Fever with no known cause
- Red rashes, often on the face (also called the "butterfly rash")

There is no one test to diagnose lupus, and it may take months or years to make the diagnosis. Dr. Carter recommended that although fatigue and joint pain may not be signs of lupus, women--particularly those with a family history of the disease--should talk to their doctor if they have those symptoms. Although there is no cure for lupus, medicines and lifestyle changes can help control it.

Dr. Pinn noted that rheumatoid arthritis (RA) is also an autoimmune disease that occurs more frequently in women, and causes pain, swelling, stiffness and loss of function in the joints, most commonly in the wrist and fingers, and can also affect the eyes and lungs. Rheumatoid arthritis is different from osteoarthritis, the common arthritis that often comes with older age, due to wear and tear on the joints. People can have rheumatoid arthritis for only a short time, or symptoms might come and go. The severe form can last a lifetime.

"The good news is that we've had dramatic success in the development of new treatments and treatment approaches and the very nature of this disease has changed dramatically since I've been involved," said Dr. Carter. "We're getting much better at preventing permanent damage to eyes, lungs and vascular system as well as preventing damage to the joints and the kind of mutilating arthritis that we used to see."

Researchers are exploring the genetics and causes of RA disease as well as seeking to understand how inflammation occurs and what makes it cause damage to the joints.

"With rheumatoid arthritis, we now have a variety of drugs available and we are seeking to understand who will respond best to which drugs, said Dr. Carter. He also stressed the importance of seeing a rheumatologist (a medical doctor who specializes in arthritis and related diseases) and getting early and aggressive treatment if a person is diagnosed with RA. "With lupus, we do not have as many proven treatment options, but early treatment can improve the outcome in severe disease."

Scleroderma, another autoimmune disease, literally means "hard skin," and affects approximately 50,000 people in the United States. It is a group of diseases that causes abnormal growth of connective tissue, the proteins that support skin and organs. There are two main types--localized scleroderma affects only skin, and systemic scleroderma affects blood vessels and internal organs such as the digestive tract or kidneys, as well as skin, and can be mild or severe. No one knows what causes scleroderma, and there is no cure, but various treatments can relieve symptoms.

“Our understanding of scleroderma is still pretty rudimentary and what that means is that most of the treatments that we have are not very targeted,” said Dr. Carter. “The important progress that we are making is in identifying these proteins that drive the abnormalities in the cells that cause the thickening and hardness in the skin, but we have not yet been able to translate that progress into treatment.”

Autoimmune diseases are a range of diseases that can attack specific organs or the entire body. Dr. Pinn noted that autoimmune thyroid disease is also more common in women, and one of the major causes of thyroid disease. Other autoimmune diseases include: alopecia (affecting the hair follicles and causing baldness), vitiligo (affecting skin pigmentation), psoriasis (a skin disease that causes itchy or sore patches of thick, red skin), inflammatory bowel disease, and multiple sclerosis.

“This is an exciting time in research,” said Dr. Carter, “We are learning a lot about the immune system and we have made some progress, particularly in rheumatoid arthritis, and we are trying to apply many of the lessons that we’ve learned to other autoimmune diseases.”

This month’s podcast is a two-part program—the first focusing on lupus, and the second on rheumatoid arthritis, scleroderma, and other autoimmune diseases. To hear Dr. Pinn’s podcasts, visit the Office of Research on Women’s Health home page at <http://orwh.od.nih.gov> and click on "Autoimmune Diseases" under "Podcasts." Information on how to use podcasts, is available at <http://videocast.nih.gov/faq/podcast/default.asp>.

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The mission of the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS), a part of the Department of Health and Human Services' National Institutes of Health (NIH), is to support research into the causes, treatment, and prevention of arthritis and musculoskeletal and skin diseases; the training of basic and clinical scientists to carry out this research; and the dissemination of information on research progress in these diseases. For more information about NIAMS, call the information clearinghouse at 301-495-4484 or 877-22-NIAMS (free call) or visit the NIAMS Web site at <http://www.niams.nih.gov>.

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