How Autoimmune Diseases Such as Lupus and Type 1 Diabetes May Increase Cancer Risk

The risk was highest in the first year after an autoimmune disease diagnosis, suggesting chronic inflammation is key in cancer development.

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People with autoimmune diseases, such as rheumatoid arthritis, lupus, type 1 diabetes and gout, had a 32% higher risk of developing cancer compared with the general population, according to study findings published in Cancers. However, use of anti-inflammatory therapies in the early stages of the autoimmune disease lowered cancer risk.

The research was coordinated by an international team from the University of Siena, the Italian National Agency for Regional Health Care Services and Sbarro Health Research Organization (SHRO) in Philadelphia.

“The peak risk observed in the early stages suggests that chronic inflammation, rather than treatments, is a key factor in cancer development,” said Daniela Marotto, MD, co–senior study author in a press release.

Inflammation is an essential function of the immune system triggered by immune cells in response to infections or wounds, as when a sprained ankle swells or a lymph node is inflamed during a cold. Fever, aches and pain are also key symptoms of normal inflammation. Once the injury or infection is resolved, the acute inflammatory response should stop. A persisting immune response, known as chronic inflammation, can be cause for concern.

Chronic inflammation is a hallmark of autoimmune diseases, like rheumatoid arthritis, lupus, Hashimoto’s thyroiditis, type 1 diabetes, multiple sclerosis and more. These diseases occur when immune cells mistakenly attack healthy cells, causing damage to specific organs or tissues. Genetic, biological (sex and age) and environmental factors (smoking or viral infections) can contribute to the development of an autoimmune disease, according to the Cleveland Clinic.

Inflammation contributes to higher cancer risk. For example, smoking increases inflammation in the lungs and can increase the risk for lung cancer, and inflammatory bowel diseases can increase the risk for colorectal cancer. Still, the relationship between autoimmune disorders and overall cancer risk has been unclear.

Using Hospital Discharge Records from the National Healthcare Service from 2018 to 2023, the Italian researchers compared cancer incidence among more than 356,000 patients. About 55,000 of these patients were diagnosed with an autoimmune disorder in the year prior to entering the study in 2018. Sociodemographic variables (age and gender), geographic location and other health comorbidities (obesity, diabetes kidney disease, liver disease and more) were also considered.

“This is the first Italian study conducted on a national scale with such a large sample,” said Giovanni Baglio, MD, senior coauthor. “The results will help guide future research and define new standards for prevention and screening in patients with IMID [immune-mediated inflammatory diseases].”

In the study’s five-year follow-up period, patients with autoimmune diseases were 32% more likely to develop cancer, specifically lymphomas and lung cancer, than the general population, even after adjusting for demographics, geography and comorbidities. Cancer risk was highest in the first year.

Women with autoimmune disorders had an increased risk for Hodgkin lymphoma, bladder cancer and ovarian cancer. Specifically, women with rheumatoid arthritis were 63% more likely to develop ovarian cancer compared with the general population.

The researchers posit that early inflammatory states may foster an ideal microenvironment for tumor growth in multiple ways: immune surveillance disruption, cellular DNA damage and enhanced angiogenesis (the rebuilding of new capillaries from blood vessels, which usually helps heal wounds but can also support tumor growth and metastasis). In fact, another hypothesis suggests that early inflammation may accelerate tumor growth. Regardless, early treatment of autoimmune disorders is critical for reversing systemic inflammation and lowering cancer risk. Similarly, cancer screening following diagnosis with an autoimmune disorder can improve treatment outcomes.

“Our results support the hypothesis that inflammation is a determining factor in cancer risk,” said study author Antonio Giordano, MD, PhD, founder and director of SHRO, in a press release. “The reduction in risk over time indicates that mechanisms related to the disease, rather than drug

exposure, play a central role.”

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http://beta.docker.cancerhealth.com/article/autoimmune-diseases-lupus-type-1-diabetes-may-increase-cancer-risk