Researchers Find a Genetic Substance That Identifies Aggressive Thyroid Cancers

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Researchers at the University of Alberta in Canada have discovered a new genetic marker that can hone in on aggressive variants of thyroid cancer. The findings, presented at the American Thyroid Association's annual meeting and published in the online medical journal EBioMedicine, also showed whether those with the illness would respond to radioactive iodine therapy, the most common and least invasive form of treatment for the illness, Medical Xpress reports.

The study focused on papillary thyroid carcinoma, which makes up nearly 90 percent of all thyroid cancers. This condition occurs when a small cystic mass grows on the thyroid, a small organ that helps regulate hormones in the body and is located on the front of the neck.

This latest research builds on a 2012 study of genetic signatures from hundreds of people with thyroid cancer that showed which patients experienced metastasis and which did not. Scientists have since identified a single protein—called platelet delivered growth factor receptor alpha, or PDGFRA—that they believe drives metastasis in thyroid cancer and may also make the cancer resistant to radioactive iodine therapy.

The scientists noted that a big problem for doctors is that they can't determine which cases will be easy to treat and which are more aggressive variations of the disease, which often results in overtreatment (some patients may even undergo unnecessary surgeries).

"We came up with a tool to identify aggressive tumors so that people have just the right amount of surgery. No more, no less," said Todd McMullen, PhD, MD, an associate professor of surgery with the University of Alberta's Medicine and Dentistry department and an author of the study. By identifying the mechanism of the protein, McMullen and his team said they could predict who will require recurrent thyroid cancer therapy and who can opt for a less intensive treatment.

In the very near future, researchers hope to begin two separate clinical trials—one that will investigate a new way to treat thyroid cancer using a drug that targets PDGFRA and another that will work on a new diagnostic tool to determine early whether a patient's thyroid cancer will be aggressive. Scientists plan to publish the results from both studies within the next 18 months.

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