ThyroidPrint: First Molecular Test For Indeterminate Thyroid Nodules

Pontificia Universidad Católica de Chile

Dr. Hernán González of Pontificia Universidad Católica de Chile

A new test developed by Dr. Hernán González of Pontificia Universidad Católica de Chile, in Santiago, will prevent thousands of unnecessary thyroid surgeries.

Abnormal growth of thyroid cells can cause the formation of nodes, which can lead to thyroid tumors. In these cases, patients must undergo a fine needle aspiration biopsy (FNA or FNAB) to determine whether the tumor is benign or malignant. Seventy percent of all FNA biopsies performed are benign, while 20 percent are indeterminate. Only 10 percent are malignant.

Surgery is recommended as a preventive measure for all patients diagnosed as “indeterminate.” The problem is that only a quarter of those cases result in cancer, which means that three out of every four of these surgeries are unnecessary, as well as expensive. They also saddle patients with lifelong hormone supplements.

> *Dr. González’s test, ThyroidPrint®, can detect whether the nodes are benign or malignant,*

> *thereby avoiding many unnecessary thyroid removals.*

This technology was created within the framework of the BMRC-Chile Biomedical Consortium.

ThyroidPrint® consists of a genetic signature that analyzes 10 genes in the FNA sample using an algorithm that can predict with 97 percent certainty whether a node is benign or malignant. This way, physicians can recommend patients with benign nodes go in for a clinical follow-up instead of surgery.

Faculty from the University's Cancer Surgery Department who carried out the study include González; biologist Rodrigo Martínez; Ph.D. in Science Soledad Urra; pathologist Antonieta Solar; radiologists Francisco Cruz and Tatiana Arias; and medical student Sergio Vargas.

The Tech Transfer Office at Universidad Católica —under the purview of the Office of the Vice-Chancellor of Research— is the driving force behind applied research at the Pontificia Universidad Católica de Chile. The Tech Transfer Office oversaw supporting the research team, raising public funds for the R+D projects, developing the intellectual property strategy, creating the spin-off GeneproDX to expand into Latin America, and raising private investment.

GeneproDX is a molecular diagnostics company based in Silicon Valley and Santiago - Chile, which will market new tests for personalized medicine used for the diagnosis and prognosis of solid tumors.
The Thyroid Print technology has successfully raised more than $8 million in public and private funds and has been used on more than 60 patients in Chile and Argentina.

This story was originally published in 2020.

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