

Study finds similar cardiovascular outcomes for generic, brand-name drugs for hypothyroidism

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A new study by Mayo Clinic researchers may have broad implications for treatment of patients with predominantly benign thyroid disease and newly treated hypothyroidism.

The study, to be published in *Mayo Clinic Proceedings* in July, looked at whether generic and brand-name levothyroxine therapy affected hospitalization for cardiovascular events for those [patients](#) who are more at risk of coronary heart disease and heart failure. Levothyroxine is the most prescribed medication in the U.S., with more than 23 million prescriptions written annually.

The [retrospective analysis](#), using deidentified claims data from a large private U.S. health plan, found that cardiovascular event rates were similar for generic and brand-name levothyroxine therapy, with lower pharmacy costs for the generic drug. The findings, if confirmed with research into longer-term event rates, suggest that generic or brand-name levothyroxine may be used to treat hypothyroidism due to benign thyroid disorders. The average 30-day cost of the [generic drug](#) was about half the cost of brand-name medication for patients and insurers.

"More than 90% of thyroid prescriptions are for levothyroxine, and there has been disagreement as to whether generic levothyroxine and branded thyroxine preparations are equivalent," says Robert Smallridge, M.D., a Mayo Clinic endocrinologist and the study's principal investigator.

"These findings suggest that generic and brand levothyroxine therapy are similar as related to cardiovascular events risk."

Dr. Smallridge says the findings require confirmation with longer-term follow-up and study of subsets of patients, such as those with a history of thyroid cancer, who frequently receive higher doses of levothyroxine.

Hypothyroidism, or underactivity of the [thyroid](#) gland, affects the function of many organs in the body, elevating blood cholesterol levels and increasing the risk of heart attacks, heart failure and stroke. Levothyroxine is used to reduce elevated cholesterol and reverse symptoms of hypothyroidism. U.S. brand names for [levothyroxine](#) include Levothroid, Levoxyl, Synthroid, Tirosint and Unithroid.

The analysis was unusual in that it used information from an administrative claims database provided by OptumLabs Data Warehouse. OptumLabs was co-founded by Optum Inc. and Mayo Clinic in 2012. This data warehouse contains deidentified administrative claims data, as well as deidentified electronic health record data from a nationwide network of provider groups.

The study reviewed records for 87,902 patients followed for a mean period of one year, focusing on hospitalization for heart attacks, congestive [heart](#) failure, atrial fibrillation or strokes. The analysis found no difference in event rates for the four types of [cardiovascular events](#).

Provided by Mayo Clinic

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