BIZCOMMUNITY

Insulin resistance drug benefits heart and stroke patients

By Ziba Kashef

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A drug designed to treat insulin resistance reduced the risk in non-diabetic patients who recently suffered a stroke or heart attack, a new study shows.

More than 14 million people worldwide suffer a stroke or TIA (mini-stroke) each year, and a major cause of disability and death in these patients is recurrent strokes or heart attacks. For decades, scientists have known that insulin resistance — a condition in which cells in the body do not respond normally to insulin — is linked to increased risk of stroke and heart-attack. To determine if the insulin-sensitizing drug pioglitazone could prevent future strokes, an international team of researchers, led by investigators at Yale School of Medicine and Yale School of Public Health, conducted a double-blind, placebo controlled trial.

The Insulin Resistance After Stroke (IRIS) Trial is the largest stroke trial to date funded by the National Institutes of Health. Researchers from seven countries enrolled 3,876 non-diabetic patients with a recent ischemic stroke or TIA who were insulin resistant. They gave participants either pioglitazone or a placebo for nearly five years. This drug is usually used in patients with type 2 diabetes to reduce blood-sugar levels.

The researchers found that pioglitazone reduced the absolute risk of recurrent stroke and heart attack by 2.8% and the relative risk by 24% when added to standard preventive care. In addition to preventing stroke and heart attack, pioglitazone cut in half the risk of diabetes and reduced blood sugar, systemic inflammation, triglyceride levels, and systolic blood pressure. Pioglitazone had no significant effect on LDL cholesterol (bad cholesterol) but increased the concentration of HDL cholesterol (good cholesterol).

“The IRIS trial has discovered a new approach to secondary stroke prevention,” said Dr. Walter N. Kernan, professor of general medicine and first author on the study. “Pioglitazone has many favorable effects on insulin resistance, glucose and fat metabolism, inflammation, and vascular function,” he said. “We cannot be sure which of these effects explains why it prevents stroke and MI. However, pioglitazone has a particularly strong effect on insulin resistance, and this may be key to the benefit we observed in IRIS,” he noted.

“After years of controversy, pioglitazone is now proven to have cardiovascular benefits,” said Dr. Silvio Inzucchi, the principal endocrinologist for the IRIS Trial. “It’s exciting to think that metabolic therapy may now be poised to take its place beside aspirin and cholesterol- and blood pressure-lowering therapies for preventing stroke in non-diabetic patients.”

According to Dr. Lawrence Young, professor of medicine and principal cardiologist for the IRIS Trial, “The results of IRIS emphasize that insulin-resistant patients are also at risk for cardiac events and that metabolic therapy also protects the heart.”

There were risks associated with taking pioglitazone, the study found. The drug raised the risk of bone fracture requiring either hospitalization or surgery. “One of our challenges is to find out how to mitigate the fracture risk,” Kernan noted. Weight gain and edema (swelling) were other less serious side effects.

Despite the adverse effects, Kernan and his colleagues emphasized that pioglitazone is a new option for preventive health. “The IRIS trial explored a novel approach to prevention of vascular disease in patients with stroke,” he said. “We hope that the findings will stimulate more research in this therapeutic area.”

The study was conducted at 167 institutions in seven countries and the authors of the main publication came from 20 institutions in seven countries. The study was funded by the National Institutes of Health/National Institute of Neurological Disorders and Stroke. Active drug and placebo tablets were provided by Takeda Pharmaceuticals International, Inc.

Source: Yale University