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Diabetes drugs increase risk of heart failure, research shows

WINSTON-SALEM, N.C. – A class of drugs commonly used to treat type 2 diabetes may double the risk of heart failure, according to a new analysis by researchers at Wake Forest University School of Medicine and colleagues.

Based on a review of research studies and case reports involving more than 78,000 patients, the authors concluded that the risk of heart failure may be up to 100 percent higher (depending on the type of study) in patients taking thiazolinediones (which includes Avandia® and Actos®). These drugs are known to enhance insulin sensitivity. The authors estimated that one additional patient with type 2 diabetes would develop heart failure for every 50 patients taking the drugs over a 26-month period.

The results were published online in May 2007 by Diabetes Care and will appear in the August print issue.

"These drugs are currently used by more than 3 million diabetic patients in the U.S. alone, suggesting that several thousand could be harmed," said Sonal Singh, M.D., lead author and an assistant professor in internal medicine at Wake Forest.

Earlier this year, one of the drugs in this class (Avandia®) was linked to an increased risk of heart attack and death from cardiovascular causes.

The current analysis looked at a potential link between the drugs and heart failure, which is the inability of the heart to meet the body's demands. Heart failure is a very common condition in the elderly and one of the costliest to society. Common symptoms include shortness of breath and the inability to exercise including, in some cases, even to walk short distances.

The authors hypothesize that fluid retention caused by the drugs may trigger heart failure in susceptible people.

Heart failure occurred equally at high and low doses. In fact, heart failure even occurred in some patients who were taking doses below those commonly prescribed. The medium time for the onset of heart failure was 24 weeks after beginning drug therapy.

The adverse reaction was not limited to the elderly – one-quarter of cases occurred in people younger than 60. Heart failure occurred equally among men and women.

The product label for both drugs warns against their use in patients with more severe cases of heart failure. The label also cautions about the increased risk of heart failure if used in combination with insulin. However, the current analysis found that the risk wasn't confined just to patients on insulin, and it occurred even among patients without any risk factors for heart failure. "Our findings support current efforts by the FDA to add a black box warning to the labeling for those agents," said co-investigator Curt Furberg, M.D., Ph.D., from Wake Forest.

"The occurrence of heart failure several months after initiation of treatment suggests a long-term effect of the drugs, which may not be avoided by beginning with low doses," said Singh.

The authors called for additional research to evaluate whether there are differences between drugs in the class and how to best manage patients who experience heart failure while on the drugs.

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In addition to Furberg, Yoon K. Loke, M.B.B.S., M.D., with the University of East Anglia in the United Kingdom, was also a co-researcher.

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Wake Forest University Baptist Medical Center is an academic health system comprised of North Carolina Baptist Hospital and Wake Forest University Health Sciences, which operates the university's School of Medicine. U.S. News & World Report ranks Wake Forest University School of Medicine 18th in primary care and 44th in research among the nation's medical schools. It ranks 35th in research funding by the National Institutes of Health. Almost 150 members of the medical school faculty are listed in Best Doctors in America.