CT Data Challenge Diabetes as a Cardiac Risk

VITALS

Major finding: On CT examination, coronary artery calcium scores appeared similar in patients with diabetes, metabolic syndrome, or neither disease.

Source of data: The findings are based on a new analysis of data from the Multi-Ethnic Study of Atherosclerosis (MESA), which enrolled more than 6,800 people aged 45-84 who were free of cardiovascular disease at baseline. The new analysis focused on coronary CT exams of people with diabetes, metabolic syndrome, or neither disease at baseline.

Disclosures: Dr. Malik had no financial disclosures. One of her coauthors is a consultant for GE, and another associate is on the speakers bureau for Takeda.

BY MITCHEL L. ZOLER

ORLANDO — Nearly 40% of adults with diabetes had absolutely no evidence of coronary artery disease in a study of 881 patients, raising questions about the appropriateness of automatically considering diabetes a risk equivalent to coronary disease.

The study findings also suggested that assessing coronary calcium may be a way to stratify the coronary disease risk of patients with diabetes, as well as those with metabolic syndrome and people without either of these conditions, Dr. Shaista Malik explained at the annual scientific sessions of the American Heart Association.

"Our results raise questions as to whether diabetes should be considered a risk equivalent. They suggest that coronary artery calcium [CAC] screening may identify both low- and high-risk subsets in patients with metabolic syndrome and in patients with diabetes," said Dr. Malik, a cardiologist at the University of California, Irvine.

"High-risk people, such as those with diabetes, have not been recommended for coronary calcium screening since aggressive treatment guidelines [for these patients] already exist," she noted. But her new analysis suggests that CAC scoring can play an important role in stratifying the coronary heart disease risk of patients with diabetes.

These results "add to the controversy over whether diabetes is truly a coronary heart disease risk equivalent," commented Dr. Prakash C. Deedwania, professor of medicine and chief of cardiology at the University of California, San Francisco in Fresno.

"Perhaps some patients [with diabetes], particularly those with longer-duration diabetes, are probably close to having a coronary heart disease risk equivalent, but there probably should be an effort made to identify the low- and high-risk patients within the diabetes cohort," Dr. Deedwania said.

Dr. Malik used data collected in the Multi-Ethnic Study of Atherosclerosis (MESA), which enrolled more than 6,800 people aged 45-84 who were free of cardiovascular disease at baseline.

The new analysis focused on 881 people in MESA diagnosed with diabetes at baseline based on a fasting glucose level of 126 mg/dL or higher; 1,686 people diagnosed with metabolic syndrome at baseline based on National Heart, Lung, and Blood Institute criteria; and 4,036 people who did not have either diagnosis. All 6,603 of these people underwent a baseline coronary CT examination to produce a CAC score. Follow-up tracked their incidence of coronary heart disease events over an average of 4.6 years.

'Coronary artery calcium screening may identify both low- and high-risk subsets.'

DR. MALIK

Baseline CAC scores showed that among people with diabetes, 39% had no coronary calcium, 27% had mild coronary disease with a CAC of 1-99, 14% had moderate coronary disease with a score of 100-399, and 21% had significant disease, with a CAC of at least 400. People with metabolic syndrome and those with neither diagnosis had higher percentages with no coronary calcium and lower percentages with significant coronary disease, but in general the CAC scores in all three subgroups were similar.

During follow-up, coronary events occurred in 33 people in the diabetes group, 43 in the metabolic syndrome group, and 52 in the people without either diagnosis.

Calculation of the 10-year event rate within each of these three subgroups showed roughly similar rates within each CAC score category (see table), especially among those with a CAC score of zero. ■

Coronary Calcium Stratifies Coronary Event Risk

Baseline coronary calcium score	With diabetes (n = 881)		With metabolic syndrome (n = 1,686)		With neither diabetes nor metabolic syndrome (n = 4,036)	
	Patients with CAC score	10-year CER	Patients with CAC score	10-year CER	Patients with CAC score	10-year CER
0	39%	2.0%	46%	0.8%	56%	0.6%
1-99	27%	8.8%	28%	5.5%	24%	3.5%
100-399	14%	14.5%	13%	12.5%	10%	6.3%
400 or more	21%	16.9%	13%	15.8%	10%	11.3%

Note: Data from average 4.6-year follow-up of patients in the Multi-Ethnic Study of Atherosclerosis.
Source: Dr. Malik

ELSEVIER GLOBAL MEDICAL NEWS

Metabolic Issues Can Persist Even With Antipsychotic Switch

BY SHERRY BOSCHERT

SAN FRANCISCO — Treating metabolic abnormalities in patients with schizophrenia may be a better way to deal with insulin resistance or dyslipidemia than switching antipsychotics, Dr. Sun H. Kim suggests.

Second-generation antipsychotics can cause weight gain, and some data suggest that these drugs may have direct effects on insulin resistance and the risk for diabetes, independent of body mass index. The psychiatric literature has focused on managing patients with schizophrenia who develop metabolic abnormalities by switching second-generation antipsychotics, because some drugs are associated with less weight gain than others.

The few studies on the topic, however, suggest that this strategy doesn't work and can psychiatrically harm patients who were stable on medication before switching, she said at the Sixth Annual World Congress on the Insulin Resistance Syndrome.

"Switching isn't likely to resolve their existing metabolic abnormalities," said Dr. Kim of Stanford (Calif.) University. "I think there should be more focus on directly treating the abnormalities."

A pilot study by Dr. Kim and her associates included 15 young outpatients with schizophrenia and a fasting glucose of 126 mg/dL or lower who tried to switch therapy after gaining more than 10 kg on a second-generation antipsychotic medication. They were obese (with a mean BMI of 34 mg/kg^2 and a mean waist circumference of 111 cm) and had very high triglyceride levels (252 mg/dL) and low HDL levels (40 mg/dL). Their average age was 34 years and the mean LDL cholesterol level was 110 mg/dL.

Oral glucose tolerance tests at baseline showed that 47% had diabetes (20%) or impaired glucose tolerance (27%). The mean fasting glucose was 97 mg/dL, and the mean 2-hour glucose was 150 mg/dL. "Based on our measurements, three quarters of them were highly insulin resistant," Dr. Kim said. The patients had been taking quetiapine, olanzapine, risperidone, ziprasidone, or clozapine.

When they tried to switch to the antipsychotic aripiprazole, five patients (33%) could not tolerate the switch psychiatrically. After 4 months on aripiprazole, 3 of the other 10 patients had lost 6-13 kg, 1 patient had no change in weight, and 6 patients gained 1-11 kg. As a group, the mean weight did not change significantly. The weight changes "didn't have a tremendous impact on insulin resistance," she said, and no significant changes were seen in mean BMI, waist circumference, total triglycerides, HDL or LDL cholesterol levels, plasma glucose levels, or steady state plasma glucose (J. Clin. Psychopharmacol. 2007;27:365-8).

A larger, multicenter study by other investigators of 173 patients with schizophrenia or schizoaffective disorder who were being treated with olanzapine randomized them to continue on olanzapine (85 patients) or switch to aripiprazole (88 patients). The cohort had a mean BMI of 27 kg/m^2 or greater and a score of at least 4 on the Clinical Global Impressions–Severity scale of psychiatric disease.

Dropout rates were high in both groups—36% on aripiprazole and 26% on olanzapine. By the end of the 16-week study, mean weight had increased by 1.4 kg in the olanzapine group and decreased by 1.8 kg in the aripiprazole group—not an impressive change, Dr. Kim said. A slight benefit in triglyceride levels was seen in the aripiprazole group (a 14% decrease), compared with the olanzapine group (a 5% increase), but there were no significant changes in fasting glucose or insulin resistance. The Clinical Global Impressions–Improvement scores were statistically better with olanzapine than with aripiprazole, she added (J. Clin. Psychiatry 2008;69:1046-56).

"You have to weigh the risks and benefits of switching someone who is stable psychiatrically on one of these medications," said Dr. Kim, who has received research funding from Eli Lilly & Co. ■