

# From Early On, Diabetics Face Higher Stroke Risk

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KISSIMMEE, FLA. — Diabetic patients face up to a 17-fold increased risk of stroke over the general population, and that risk is especially high in the first few years after their diabetes diagnosis, researchers said at the 31st International Stroke Conference.

The findings underscore the importance of early and aggressive management of

cardiovascular risk factors in diabetic patients, especially the triumvirate of obesity, hypertension, and high triglyceride levels that constitute metabolic syndrome, said Dr. Thomas J. Jeerakathil of the University of Alberta, Edmonton.

“This should be a real wake-up call that cardiovascular risk factors in diabetics need to be tackled from the very beginning. There is a real up-front risk. It’s not something to put on the back burner and worry about decades from now,” he said.

Both Dr. Jeerakathil and Dr. Brett M. Kissela of the University of Cincinnati undertook population-based epidemiologic studies of stroke in people with diabetes.

Dr. Jeerakathil’s study included 12,272 patients in Saskatchewan who received a new prescription for oral hypoglycemic medication in 1991-1996, indicating newly diagnosed diabetes. The patients’ average age was 64 years, and the average follow-up was 5 years.

During that time, 9% experienced a

hospital admission for stroke and 22% of the entire cohort died. The rate of stroke was 1,025/100,000 person-years—double the rate seen in the general population (499/100,000 person-years).

“The high rate of stroke in these younger patients shows that the effects of atherosclerosis are already established by the time they receive a diabetes diagnosis,” Dr. Jeerakathil said at the meeting sponsored by the American Stroke Association.

The hyperglycemia of diabetes probably contributes to the acceleration of atherosclerosis, but these patients also have other cardiovascular risk factors, including obesity, high triglycerides, and hypertension,” he said.

Dr. Kissela’s study also concluded that strokes were occurring earlier in diabetic patients than in nondiabetic patients.

He used a large Ohio medical database to compare the incidence of ischemic stroke in those with diabetes with the rate in those without diabetes. Of 2,432 patients who had strokes in 1999, 33% had

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<p><b>THE ECS IMPACTS THE METABOLISM OF LIPIDS AND GLUCOSE<sup>1-3</sup></b></p>	<ul style="list-style-type: none"> <li>ECS overactivity may be associated with the development of cardiometabolic risk factors including:                             <ul style="list-style-type: none"> <li>— Low HDL cholesterol</li> <li>— High triglycerides</li> <li>— High waist circumference</li> <li>— Elevated fasting glucose</li> <li>— Insulin resistance</li> </ul> </li> </ul>
<p><b>THE ECS HELPS REGULATE PHYSIOLOGIC PROCESSES<sup>1-4</sup></b></p>	<ul style="list-style-type: none"> <li>The ECS consists of signaling molecules and their receptors, including the cannabinoid receptor CB<sub>1</sub><sup>2</sup></li> <li>Endocannabinoids bind to CB<sub>1</sub> receptors and trigger events that may have a negative impact on lipid levels and insulin sensitivity<sup>1</sup></li> <li>CB<sub>1</sub> receptors are located in sites such as muscle, the liver, the brain, and adipose tissue<sup>1,2,4-6</sup></li> </ul>
<p><b>RESEARCH CONTINUES TO INVESTIGATE THE ROLE OF CB<sub>1</sub> RECEPTORS IN MUSCLE*</b></p>	<ul style="list-style-type: none"> <li>Reduced glucose uptake has been observed in isolated skeletal muscle of genetically obese, insulin-resistant animals</li> </ul>
<p><b>ENDOCANNABINOIDS TARGET FATTY ACID PRODUCTION IN THE LIVER<sup>3</sup></b></p>	<ul style="list-style-type: none"> <li>May contribute to dyslipidemia and insulin resistance<sup>3,7</sup></li> </ul>
<p><b>PRESENT IN MULTIPLE AREAS OF THE BRAIN<sup>2</sup></b></p>	<ul style="list-style-type: none"> <li>Hypothalamus integrates signals from adipose tissue and other peripheral tissues<sup>8,9</sup></li> </ul>
<p><b>ADIPOSE TISSUE—MORE THAN SIMPLY A FAT STORAGE DEPOT</b></p>	<ul style="list-style-type: none"> <li>Produces factors active in the metabolism of lipids and glucose<sup>10</sup></li> <li>Low levels of adiponectin negatively affect glucose and free fatty acids<sup>1,10</sup></li> </ul>
<p><b>EXPLORING THE EFFECTS OF THE ECS</b></p>	<ul style="list-style-type: none"> <li>This newly discovered physiologic system provides new opportunities for understanding cardiometabolic risk</li> </ul>

\*Data from animal model only.

**References**

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DR. JEERAKATHIL

a history of diabetes. Patients with diabetes and stroke were younger (70 vs. 73 years), more likely to be black (25% vs. 15%), and more likely to have a history of hypertension (82% vs. 66%), high cholesterol levels (31% vs. 18%), and myocardial infarction (19% vs. 12%).

In both whites and blacks with diabetes, the increased risk of stroke was highest in those younger than 55 years. White diabetics aged 18-34 had a 17-fold increase over the general population. The risk ratio was 8 in those aged 35-44, and 6 in those aged 45-54. For blacks, the increased risk was again highest for the youngest patients (8.5-fold increase). For those aged 35-44, the risk ratio was 7.5, and it was doubled for those aged 45-54.

The increased risk of stroke in young diabetics, coupled with the increased incidence of metabolic syndrome signs, should be a red flag for physicians who have always focused on glycemic control and the prevention of microvascular disease, Dr. Kissela said. “Glycemic control is important, but it’s not enough. These patients are at great risk and need to be aggressively managed with weight control, blood pressure control, and lipid control. It’s crucial.”

Previous studies have shown that diabetes patients benefit even more than the general population from hypertension control, Dr. Jeerakathil added.

“In the average population, if you lower blood pressure by 10 points, you lower the risk of stroke by 40%. But in diabetics, the same 10 points will lower the risk of stroke by 60%. They get more bang for the buck, but they are still not being adequately treated for hypertension,” he said. ■