

Insulin Resistance Raises Teens' Future HT Risk

BY PATRICE WENDLING
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CHICAGO — Insulin resistance in teens increases their risk of high blood pressure as adults, according to a large, longitudinal study reported at a conference of the Council for High Blood Pressure Research.

Insulin resistance was assessed in teens from age 13 to 19 years and was found to be associated with higher systolic blood pressure independent of body mass index, said Alan Sinaiko, M.D., professor of pediatrics at the University of Minnesota in Minneapolis.

"Strategies designed to reduce childhood obesity to prevent atherosclerotic cardiovascular disease and type 2 diabetes may need to be complemented by treatment of insulin resistance," Dr. Sinaiko said at the meeting, sponsored by the American Heart Association.

Dr. Sinaiko and his colleagues randomly recruited 357 Minneapolis grade school

students. Over the next 6 years, the children were tested using a euglycemic hyperinsulinemic clamp at age 13 years (n=357), at age 15 years (n=309), and at age 19 years (n=206).

The test involves infusing a small amount of insulin into the blood for 3 hours, and simultaneously infusing glucose through another vein. It is designed to maintain blood sugar at a fairly normal level of 100 mg/dL. Glucose uptake in mg/kg lean body mass during the final 40

minutes of the clamp was used to define the level of insulin resistance.

At age 13, none of the children were hypertensive, and the average blood pressure was 109/55 mm Hg in 198 boys and 106/58 mm Hg in 159 girls. Average body mass index (BMI) was 21.6 kg/m² in boys and 22.3 kg/m² in girls. At age 19, systolic blood pressure increased by 0.42 mm Hg for each unit increase of insulin resistance from age 13, and it increased by 0.23 mm Hg for each unit increase in BMI from age 13. Trigly-

cerides increased by 1.6 mg/dL for each unit increase in insulin resistance, and by 3.1 mg/dL per each unit increase of BMI from age 13. HDL cholesterol, on the other hand, decreased by 0.30 mg/dL for each unit increase in insulin resistance, and decreased by 0.28 mg/dL for each unit increase in BMI.

Systolic blood pressure changes were independent of those related to BMI and triglyceride levels. All these variables were significantly correlated between the studied ages of 13 and 19 years. ■

Angioplasty With Metabolic Syndrome Risky

NEW ORLEANS — Metabolic syndrome raises the risk of adverse outcomes following percutaneous intervention, Vidyasagar Kalahasti, M.D., reported at the annual scientific sessions of the American Heart Association.

This new finding is consistent with previous reports saying that patients with metabolic syndrome also have increased mortality after coronary artery bypass surgery, noted Dr. Kalahasti, a cardiology fellow at the Cleveland Clinic Foundation.

The retrospective chart review included 2,382 patients who underwent percutaneous intervention (PCI) at the Cleveland Clinic. The patients were categorized into five groups based upon how many of four metabolic syndrome components—dyslipidemia, obesity, any history of hypertension, and any history of diabetes—they had.

During a median 8-month follow-up after PCI, the study group experienced 209 deaths and a total of 951 major adverse events, defined as MI, repeat revascularization, or death. The risk of a major adverse event showed a strong graded relationship with the number of metabolic syndrome components present.

Among the 781 patients who had just one metabolic syndrome component, the risk of a major adverse event during follow-up was 35% greater than in the 253 patients with no components of metabolic syndrome. The 715 patients with two metabolic syndrome components had a 42% increased relative risk. Among the 467 patients with three metabolic syndrome components, the relative risk of a major adverse event was 66% greater than in those with none. And the 166 patients who had all four metabolic syndrome components had a 76% increase in risk.

—Bruce Jancin

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