

SOUTHWESTERN NEWS

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EXPERIMENTAL BLOOD TESTS PREDICTS HEART DISEASE RISK FROM NEW FORM OF CHOLESTEROL

DALLAS – May 18, 1998 – Every year millions of people with "normal" cholesterol levels suffer chest pain or heart attacks. A UT Southwestern Medical Center at Dallas study indicates these individuals may suffer from a high concentration of a type of cholesterol not detected with conventional screenings.

Researchers found that the 63 men in the study who had suffered heart attacks, chest pain or clogged arteries despite having normal levels of total cholesterol and the so-called "bad" cholesterol had high levels of a form of cholesterol called remnant particle lipoproteins or RLP cholesterol.

"The majority of people who have heart attacks have what is considered normal cholesterol," said Dr. Ishwarlal Jialal, the senior author of the study published in the May issue of the *American Journal of Medicine*. "What we have found may be a powerful new independent risk factor for coronary heart disease."

Jialal, a professor of internal medicine and pathology and senior investigator in the Center for Human Nutrition at UT Southwestern, undertook the study with Dr. Sridevi Devaraj, a pathology instructor, and Dr. Scott Grundy, professor of internal medicine and director of the Center for Human Nutrition. Dr. Gloria Vega, professor of clinical nutrition and Dr. Richard Lange, associate professor of internal medicine, also participated in the study.

Remnant lipoproteins result from the metabolism of very-low density lipoproteins (VLDL) and chylomicrons -- the major triglycerides carrying lipoproteins. These cholesterol-enriched particles promote plaque formation -- the first step toward arteriosclerosis or hardening of the arteries. High concentrations of RLP cholesterol have been linked to several diseases associated with premature heart disease such as diabetes and kidney disease.

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REMNANT CHOLESTEROL – 2

The study also found that a new cholesterol test, the Remnant Like Particle Cholesterol Assay, developed by JIMRO of Japan, reliably assesses RLP cholesterol levels.

Researchers examined 63 men with coronary artery disease who had suffered a heart attack or had a history of chest pain or blocked arteries. Each had normal cholesterol levels as defined by the National Cholesterol Education Program, which is a total cholesterol level of less than 240 mg/dl and a triglyceride level of less than 200 mg/dl. They were compared to 23 healthy men of similar ages who had higher total cholesterol and higher low-density lipoprotein (LDL) -- the "bad" cholesterol -- and high-density lipoprotein (HDL) -- the "good" cholesterol.

In spite of total cholesterol, LDL cholesterol and HDL cholesterol being significantly lower in the patients with coronary heart disease, their remnant levels were significantly higher, 33 percent above the control group's levels, Grundy said.

"The most dramatic demonstration of the significance of remnant lipoproteins in atherosclerosis is Type III dyslipidemia -- a genetic disorder in which remnant levels are increased with normal LDL cholesterol, which results in severe atherosclerosis," Jialal said. "In this study, patients with Type III dyslipidemia had markedly increased remnant levels -- 24 fold -- compared to normal controls."

The study emphasizes the importance of remnant measurement in the management of heart disease. Preliminary research in Japan also indicates that these remnants can be treated with cholesterol-lowering drugs, Jialal said.

The Remnant Like Particle Cholesterol Assay is not yet approved by the Food and Drug Administration and is only available at a few centralized labs in the country, including the chemical pathology lab at UT Southwestern, directed by Jialal.

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