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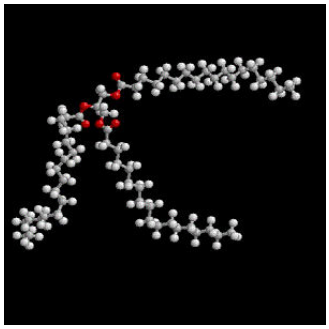
A New Cause of High Plasma Triglycerides



A high-fat diet is known to cause a condition known as hypertriglyceridaemia. New research from UCLA shows that antibodies, which attack people's own proteins, can also cause high levels of triglycerides in the blood. The "GPIHBP1 autoantibody syndrome" represents an important advance in understanding hypertriglyceridaemia.

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"It's important to recognise this new syndrome because it is life threatening and potentially treatable," said Dr. Stephen Young, UCLA cardiologist and molecular biologist. "GPIHBP1 autoantibodies need to be considered in any new case of severe hypertriglyceridaemia." The findings are published in New England Journal of Medicine.

Hypertriglyceridaemia, which can increase risk of both cardiovascular disease and pancreatitis, is often caused by or exacerbated by uncontrolled diabetes or obesity. High plasma triglyceride levels can also be caused by mutations in a variety of genes that regulate triglyceride metabolism. However, despite decades of research and a growing understanding of triglyceride metabolism, most cases of hypertriglyceridaemia are poorly understood.

Triglycerides in the bloodstream are broken down by an enzyme called lipoprotein lipase, known as LPL, inside capillaries -- the body's smallest blood vessels. In 2010, the UCLA team discovered that another protein, GPIHBP1, binds to LPL and moves it into capillaries. Without GPIHBP1, LPL is stranded in the spaces between tissues, where it is useless for digesting the triglycerides in the bloodstream.

In the new study, the research team found a group of people with hypertriglyceridaemia whose GPIHBP1 can't transport lipoprotein lipase into capillaries. The reason: they have autoantibodies against GPIHBP1 that prevent GPIHBP1 binding to LPL.

More research will be needed to define the frequency of the GPIHBP1 autoantibody syndrome and how to treat it, but it seems likely that immunosuppressive drugs could help reduce autoantibodies and lowering plasma triglyceride levels, said Dr. Young, who led the study along with his colleagues Anne Beigneux and Loren Fong. All three are professors of medicine at the David Geffen School of Medicine at UCLA.

Source: University of California -Los Angeles Health Sciences
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