Infusing 'good' cholesterol protein may lower risk of subsequent heart attack

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An intravenous infusion of good cholesterol could reduce the risk of a subsequent heart attack, researchers reported at the American Heart Association's Scientific Sessions 2012.

In a small, early study, researchers noted that an intravenous infusion of the chief protein in high density lipoprotein (HDL or "good" cholesterol) seems to rapidly boost the body's ability to move cholesterol out of plaque-clogged arteries,

In the days and weeks after a heart attack or chest pain, patients are at high risk of another attack. Standard heart attack medications, such as aspirin and anti-platelet drugs, prevent clotting but don't help eliminate the underlying cause—cholesterol that has built up in artery plaque.

Other HDL drugs, such as niacin and fibrates, which do attack the underlying cause, gradually raise HDL and may prevent heart attacks years after the start of therapy. The study involves CSL112, an infusible and natural human formulation of Apolipoprotein A-1 (ApoA-1), the key protein in HDL particles that transports cholesterol from arteries and other tissues into the liver for disposal.

"In a current multi-center study, CSL112 will be administered as a short series of weekly IV infusions initiated shortly following a heart attack or heart-related chest pain," said Andreas Gille, M.D., Ph.D., lead author of the study and Head of Clinical and Translational Science Strategy at CSL Limited in Parkville, Australia. "Our aim is to address a significant gap

in acute coronary syndrome management by reducing the high risk of early recurrent events."

Researchers studied markers of cholesterol movement in response to a single infusion of CSL112 at doses ranging from 5 to 135 mg/kg in 57 healthy volunteers.

Compared with a placebo infusion, they found:

- Cholesterol extraction from cells rose immediately (up to 270 percent from baseline).
- PreBeta1-HDL, a subfraction of HDL involved in cholesterol elimination, increased dramatically (up to 3,600 percent from baseline).

"Overall, CSL112 behaved as well or better than we expected and all the changes are consistent with the desired elevation in reverse cholesterol transport activity," Gille said. "We did not observe any unfavorable changes in the low density lipoprotein or 'bad' cholesterol-related biomarkers tested." The safety and behavior of CSL112 in patients with stable heart disease is being evaluated in a multi-center trial.

Provided by American Heart Association