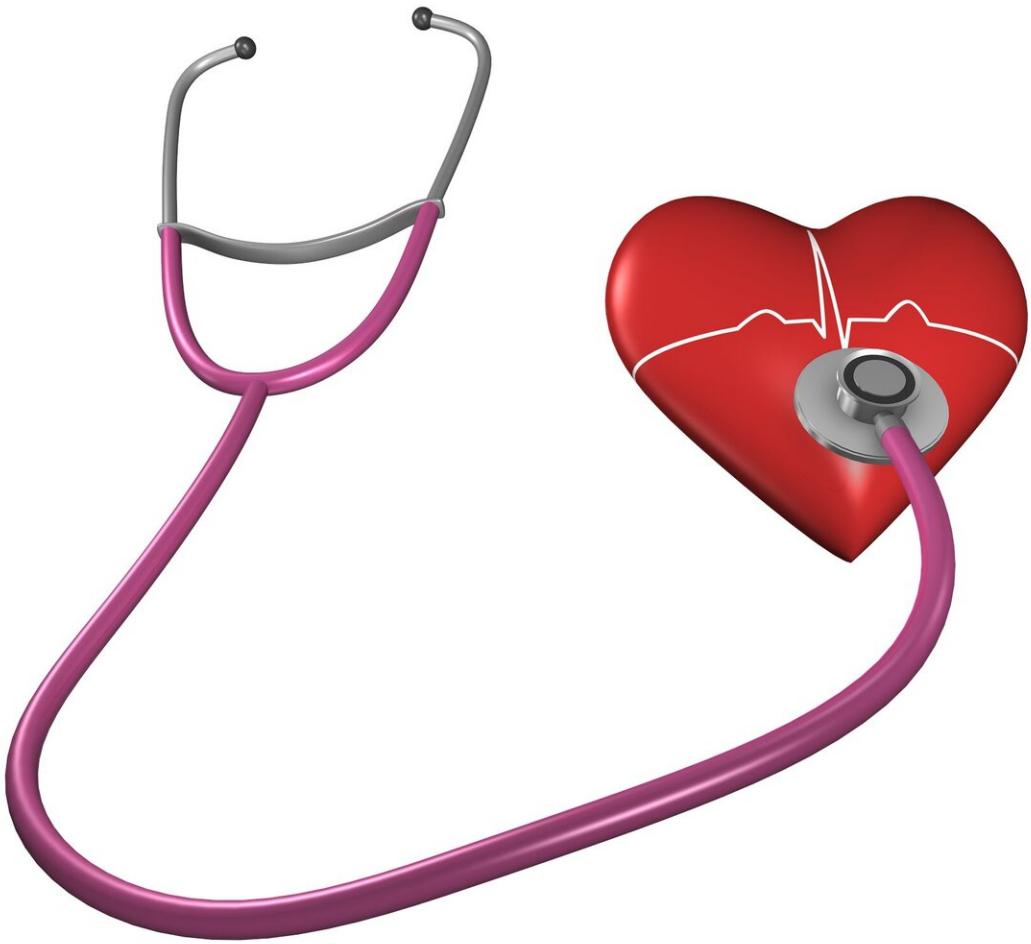
Promising results for hyperlipidemia treatment reduce risk of cardiovascular events

May 28 2024, by Graciela Gutierrez



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Research led by Baylor College of Medicine has shown that a new therapy significantly reduces triglyceride levels in individuals with mixed hyperlipidemia—elevations of triglycerides and cholesterol.

The results, published in the latest edition of the *New England Journal of Medicine*, demonstrate how the drug plozasiran works by targeting ApoC3, which is a key regulator of the lipoprotein particles that carry triglyceride and cholesterol remnants versus overall LDL cholesterol levels.

"This is a story about elevated triglycerides, which remain a problem in many individuals that I see in my practice," said Dr. Christie Ballantyne, professor of medicine and chief of cardiovascular research at Baylor.

"While statins are highly effective in treating high cholesterol, specifically LDL cholesterol, there are still many people who have persistent high triglycerides. Variants in specific genes have been shown to raise triglycerides and the identification of these genes has led to new targets and therapies, such as the therapeutic we are studying in this current trial, plozasiran."

Plozasiran is an RNA interference drug that targets specific RNA molecules in the body that are responsible for the production of APOC3, a key regulator of triglyceride-rich lipoprotein metabolism. High levels of APOC3, caused by genetics or metabolic factors such as diet, obesity and diabetes, slow down the breakdown of triglycerides and, in turn, can lead to cardiovascular disease.

Researchers from Baylor, along with Borbánya Praxis, Valley Clinical Trials, Arrowhead Pharmaceuticals and Stanford University, followed 324 participants in the MUIR Trial for 48 weeks. Some were randomly assigned to receive plozasiran or a placebo. Of those receiving the drug, subgroups were given different dosages.

At 24 weeks, those taking the drug had reduced levels of triglyceride levels and other atherogenic lipids and lipoproteins, which were maintained throughout the 48-week trial.

"This is a phase II trial; we were focused on finding the most effective dosage. Higher dosages affected glucose levels in some participants, but we were able to find the right amounts with efficacy on triglycerides and other lipids with few adverse effects," said Ballantyne, who also is a member of the Texas Heart Institute.

Another significant observation was that up to 36 weeks after the last dose, the effects of the drug were still evident.

"These results show us that we are headed in the right direction, and more clinical studies in a larger phase 3 program are needed to bring this therapy for public use," Ballantyne said.

More information: Christie M. Ballantyne et al, Plozasiran, an RNA Interference Agent Targeting APOC3, for Mixed Hyperlipidemia, *New England Journal of Medicine* (2024). DOI: 10.1056/NEJMoa2404143

Provided by Baylor College of Medicine