Alirocumab offers superior benefits to usual care in treating high-risk patients with type 2 diabetes

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Video Abstract

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Abstract

Alirocumab, a drug that inhibits PCSK9 and helps clear the blood of atherogenic lipids, may be of benefit for individuals with type 2 diabetes who are most at risk of cardiovascular disease. According to the International Diabetes Federation, heart disease is the leading cause of death among people with type 2 diabetes. One factor that might contribute to that grim statistic is the high mixed dyslipidemia prevalence in this population. Mixed dyslipidemia is characterized by elevated triglycerides, and hence high triglyceride-rich lipoprotein, or remnant cholesterol, and high cholesterol levels; and low serum levels of high-density lipoprotein cholesterol, or HDL-C. Despite treatment with statins and other lipid-lowering therapies targeting atherogenic lipoproteins, management of mixed dyslipidemia remains challenging, especially among individuals with diabetes. Mixed dyslipidemia in these individuals might not be detected by the usual practice of measuring levels of low-density lipoprotein cholesterol, or LDL-C, as those levels may remain close to normal. One alternative could be to measure non-high-density lipoprotein cholesterol, which could be a better indicator of cardiovascular risk than LDL-C among individuals with elevated triglycerides, including those with mixed dyslipidemia. Researchers assessed non-HDL-C reduction by comparing different therapeutic options on top of statins among the high-cardiovascular-risk and underserved group of patients with type 2 diabetes and mixed dyslipidemia. In addition to maximally tolerated statin therapy, the team treated patients with the drug alirocumab or one of the following lipid-lowering therapies: no additional lipid-lowering therapy, fenofibrate, ezetimibe, omega-3 fatty acid or nicotinic acid. Like statins, alirocumab helps reduce cholesterol levels. Unlike statins, however, alirocumab doesn’t target lipid formation; it inhibits a liver enzyme - proprotein convertase subtilisin/kexin type 9, or PCSK9 - to clear atherogenic lipids from the blood. The researchers measured the percent decrease in non-HDL-C. At week 24, that decrease was less than 5% for the usual-care group and more than 37% for the alirocumab group. Alirocumab also reduced LDL-C by 43% and apolipoprotein by 32.3% versus usual care; and no difference was observed for TG and HDL-C. At week 24, more than two-thirds of the alirocumab group met their predefined cholesterol goal, whereas less one-fifth of the usual care group did. Alirocumab treatment was well tolerated, with treatment-emergent adverse events occurring in 68.4% of the alirocumab group and 66.4% of the usual care group. Also, no clinically meaningful effect on glycated hemoglobin, or change in the number of glucose-lowering agents, was seen. The study does appear to confirm an advantage of alirocumab: its ability to go above and beyond statins and currently available lipid-lowering therapy. That finding could offer helpful scientific support for care providers in managing heart risk in patients with type 2 diabetes and mixed dyslipidemia.