Alirocumab Reduces LDL Cholesterol in People Living With Diabetes on Insulin

People with type 1 and type 2 diabetes on insulin and a maximally tolerated statin, significantly reduced their LDL cholesterol levels with alirocumab.

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August 26, 2021 - People living with type one diabetes (T1D) and type two diabetes (T2D) on insulin, with established atherosclerotic cardiovascular disease or LDL cholesterol above 70 mg/dL, on a maximally tolerated statin, achieved a reduction in LDL of 49% (T2D) and 47% (T1D) versus placebo ($p < .0001$).

Lawrence Leiter, MD, with the Li Ka Shing Knowledge Institute, University of Toronto in Ontario, Canada, and colleagues reported their findings in the September 1, 2017, issue of *Diabetes, Obesity, and Metabolism*.

Dyslipidemia affects millions of people in the United States. In people living with diabetes, dyslipidemia increases the risk of developing macrovascular complications and usually coincides with insulin resistance. Guidelines for cardiovascular disease and risk management in diabetes advise using a maximally tolerated statin plus or minus ezetimibe to lower LDL cholesterol by at least 50% in patients with established atherosclerotic disease or those at high cardiovascular risk. Regardless of the recommendations, many fail to achieve this LDL reduction and remain at an elevated risk for cardiovascular complications.

Participants in the study had T1D or T2D, were on insulin and a maximally tolerated statin plus or minus other lipid lowering drugs and had established atherosclerotic heart disease and/or at least one cardiovascular risk factor. In addition to lifestyle interventions, patients received either subcutaneous alirocumab or placebo for 24 weeks with percent reduction in LDL as the primary endpoint. Researchers also reported adverse effects.

In patients with T2D, alirocumab reduced LDL levels by 48.2% versus an LDL increase of 0.8% with placebo ($p < .0001$). This reduction of LDL was consistent among all subgroup analyses including chronic kidney disease, age, duration of diabetes, baseline glycated hemoglobin A1c, and history of atherosclerotic cardiovascular disease to name a few. In patients with T1D, alirocumab reduced LDL by 51.8% versus an LDL reduction of 3.9% for placebo ($p < .0001$) and results were similar among subgroups. The difference between adverse events between alirocumab and placebo was negligent. Adverse events with alirocumab that led to discontinuation were headache, cognitive disorder, allergic dermatitis, and myalgia.

“Alirocumab produced significant LDL cholesterol reductions in participants with insulin-treated diabetes regardless of diabetes type, and was generally well tolerated,” concluded Dr. Leiter and colleagues.

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