COMMENTARY

Benefit of achieving low-density lipoprotein-cholesterol levels

David Minsky

Minsky D. Benefit of achieving low-density lipoprotein-cholesterol levels. J Heart Res. 2022; 5(2):15.

ABSTRACT

Reduced Low-Density Lipoprotein Cholesterol (LDL-C) with statin medication is one of the most important strategies for preventing and treating Atherosclerotic Cardiovascular Disease (ASCVD). With a drop in LDL-C, the risk of Coronary Artery Disease (CAD) diminishes, although there is no accepted level at which the risk becomes minor. The current practice guidelines for primary CAD prevention advocate calculating ASCVD risk rather than starting statin medication at a specific cholesterol level. Patients with known CAD or who come with Acute Coronary Syndromes (ACS) should take a high-dose statin regardless of their baseline LDL-C values. However, the ideal LDL-C level for secondary CAD prevention is unknown. Statins have pleiotropic effects, such as decreasing inflammation and stabilizing atherosclerotic plaques, in addition to lowering LDL-C.

Key Words: *Lipoprotein-cholesterol; Cardiovascular disease; Acute coronary syndromes*

INTRODUCTION

The level of LDL-C reduction correlates closely with the risk of ischemia events, according to recent findings from clinical trails. P--atients with LDL-C less than 40 mg/dL had a decreased risk of adverse cardiac events than those with LDL-C greater than 60 mg/dL in the PROVE IT-TIMI22 study. Similarly, the Justification for the Use of Statins in Prevention: An Intervention Trial Evaluating Rosuvastatin (JUPITER) trial found that individuals with LDL-C 50 mg/dL had a decreased risk of ischemic events than patients with LDL-C>50 mg/dL, with no side effects. The Improved Reduction of Outcomes: Vytorin Efficacy International Experiment (IMPROVE-IT TIMI 40) trial recently added to the growing body of evidence showing reaching very low LDL-C correlates with better cardiac outcomes. 144 patients with acute coronary syndrome were treated with simvastatin and ezetimibe or simvastatin alone and followed for 7 years in the IMPROVE-IT trial, which was a double-blind, randomized, placebo-controlled experiment. The primary outcome was mortality from cardiac causes, a significant coronary event (non-fatal myocardial infarction, documented unstable angina requiring hospitalization, coronary revascularization happening at least 30 days after randomization), or a non-fatal stroke. The average LDL-C in the simvastatin-ezetimibe group was 53.7 mg/dL at the end of the study, compared to 69.5 mg/dL in the simvastatin immunotherapy group. Patients who took simvastatin-ezetimibe had a lower rate of the primary end point than those who received simvastatin alone. urthermore, there was no significant difference between the two groups in the incidence of medication-related side effects. Intensive lipid lowering medication with a combination of simvastatin and ezetimibe was found to be effective in all subgroups. F Patients in the simvastatin/ ezetimibe arm had lower total cholesterol, Non-High-Density Lipoprotein (HDL) cholesterol, and triglycerides after a year of treatme--nt than those in the simvastatin immunotherapy arm. In addition, simvastatin/ezetimbe significantly reduced high-sensitivity C-Reactive Protein (hs-CRP), an inflammatory marker and predictor of adverse vascular events, when compared to simvastatin alone. Furthermore, a higher proportion of patients on simvastatin/ezetimibe met the dual goal of an LDL-C level less than 70 mg/dL and an hs-CRP level less than 2 mg/L, which was linked to better clinical outcomes.

In summary, the IMPROVE-IT study is the first randomized trial to show that adding a non-statin LDL-C reducing drug to statin therapy results in a net clinical benefit. This shows that additional non-statin lipid-lowering treatments, such as PCSK9 inhibition, may have a promising role in decreasing LDL-C and improving cardiac outcomes. Furthermore, this study demonstrates that lowering LDL-C levels to dangerously low levels is both safe and beneficial. In today's practice, physicians should use a high-intensity statin, either alone or in conjunction with ezetimibe, to achieve very low LDL-C values in patients at higher risk of cardiac events. More information about PCSK9 inhibitors' role in lowering cardiovascular risk will come from ongoing PCSK9 inhibitor outcome trials.

Editorial Office, Journal of Heart Research, United Kingdom

Correspondence: David Minsky, Editorial Office, Journal of Heart Research, United Kingdom, E-mail: genome@heartresearchpub.org

Received: 05 April 2022, Manuscript No. puljhr-22-4756; Editor assigned: 08 April 2022, Pre QC No. puljhr-22-4756 (PQ) Reviewed: 15 April 2022, QC No. puljhr-22-4756 (Q); Revised: 19 April 2022, Manuscript No. puljhr-22-4756 (R); Published: 30 April 2022, DOI: 10.37532/puljhr.22.5(2).15.