

Efficacy of high-intensity statin therapy without LDL cholesterol target in secondary prevention

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Background: Lowering of low density lipoprotein (LDL) cholesterol with statin therapy reduces atherosclerotic cardiovascular events. Two major guidelines from ACC/AHA and ESC recommend different approach in secondary prevention for patients with established coronary artery disease. Because of discordance between two guidelines, many physicians have confused. We aimed to compare the clinical outcome of two different recommendations. **Methods:** We conducted retrospective observational study among 4,330 patients who received percutaneous coronary intervention between February 2003 and April 2016. Patients were divided into 4 groups according to statin intensity at discharge and achievement of LDL cholesterol target: Group 1 (High-intensity statin/Success), Group 2 (Non high-intensity statin/Success), Group 3 (High-intensity statin/Fail), and Group 4 (Non high-intensity statin/Fail). The primary endpoint was a composite of death from cardiovascular causes, nonfatal myocardial infarction, or nonfatal stroke. All endpoints were transected at 5 years. We compared the endpoints between four groups. **Results:** The median follow up LDL cholesterol level was almost 60mg/dL in success groups, compared with 90mg/dL in fail groups. Follow up LDL cholesterol level was not significantly different in two success groups (Group 1 and 2). Group 1 had significantly lower cardiovascular events rate than the other three groups ($p=0.004$). Kaplan-Meier event rate for primary endpoint at 5 years was 3.7% in Group 1, compared with 7.6% in Group 2 (HR 2.134; 95% CI 1.16 to 3.92; $p=0.015$) and 12.3% in Group 3 (HR 4.734; 95% CI 2.25 to 9.95; $p<0.001$). **Conclusions:** In patients with established coronary artery disease who succeed in LDL cholesterol goal, high-intensity statin regimen reduced cardiovascular events compared with non high-intensity statin regimen. Such patients can benefit from high intensity statin regimen for secondary prevention. However, if patient fail to achieve LDL cholesterol target although started high-intensity statin regimen, cardiovascular events were not reduced. Therefore, physicians evaluate the statin adherence if follow up LDL cholesterol level is less than expected.

Statin treatment to improve clinical outcomes in acute coronary syndrome patients with low LDL

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Background: Lowering LDL cholesterol has been recommended for patients with high cardiovascular risk. However, the effect of early statin treatment in ACS patients with LDL-C level below 100 mg/dl is unclear. We aimed to perform a meta-analysis of relevant studies assessing the impact of statin treatment on clinical outcomes in ACS patients with a low LDL-C. **Methods:** Databases through January 2016 were searched for relevant studies reported clinical outcomes after statin treatment in ACS patients presenting with a low baseline LDL-C (<100 mg/dl). We calculated the pooled odds ratios with 95% confidence intervals for all-cause death, MI and major adverse cardiac events (MACE). **Results:** Six clinical trials (one randomized trial and five observational studies) representing a total of 5,576 patients were analyzed. Pooled analysis revealed that all-cause death (OR: 0.39; 95% CI: 0.27 to 0.56; $p<0.001$) and MACE (OR: 0.55; 95% CI: 0.36 to 0.83; $p=0.005$) were meaningfully lower in patients receiving statin treatment compared to control group. Stratified analysis revealed more beneficial effect of statin treatment in studies with a baseline LDL-C below 100 mg/dl than studies with baseline LDL-C level below 70 or 80. **Conclusions:** Statin treatment in ACS patients with LDL-C lower than 100 mg/dl appears to be effective in reducing the risk of all-cause death and MACE, but no additional benefit was observed in patients with baseline LDL-C less than 70 or 80 mg/dl.

