

Comparison of the Efficacy of Rosuvastatin Monotherapy 20 mg with Rosuvastatin 5 mg and Ezetimibe 10 mg Combination Therapy on Lipid Parameters in Patients with Type 2 Diabetes Mellitus (*Diabetes Metab J* 2019;43:582-9)

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Diabetes is a major global public health threat. The prevalence of diabetes among Korean adults aged 30 years and older was 13.7% (4.8 million) in 2013 to 2014 and 14.4% (5.02 million) in 2016 [1,2]. About half of the people with diabetes had comorbidities. In Korea, 55.3% of people with diabetes had hypertension and 34.9% had hypercholesterolemia [2]. With improvements in the treatment of diabetes and its associated conditions including hypertension and dyslipidemia, the incidence of cardiovascular diseases (CVDs) and mortality gradually decreased over recent decades [3,4]. However, only 8.4% of people with diabetes had good control of glucose (glycosylated hemoglobin [HbA1c] <6.5%), blood pressure (BP <140/85 mm Hg), and lipid profiles (low density lipoprotein cholesterol [LDL-C] <100 mg/dL). A 68.4% of people with diabetes achieved BP <140/85 mm Hg and 44.2% achieved LDL-C <100 mg/dL [2]. Moreover, the prevalence of subclinical coronary atherosclerosis is higher than expected, and this could affect coronary artery disease progression in asymptomatic diabetic patients [5]. Therefore, much more comprehensive management of diabetes should be planned to reduce diabetes-related morbidity and mortality.

In the article entitled 'Comparison of the efficacy of rosuvastatin monotherapy 20 mg with rosuvastatin 5 mg and ezetimibe 10 mg combination therapy on lipid parameters in patients with type 2 diabetes mellitus,' Hwang et al. [6] prospectively evaluated statin and ezetimibe combination therapy in patients with type 2 diabetes mellitus (T2DM). They showed that 6-week combination therapy of low-dose rosuvastatin and ezetimibe (5 and 10 mg/day, $n=16$) showed LDL-C, apolipoprotein B (apoB), and apoB/A1 ratio reduction comparable to that of high-dose rosuvastatin monotherapy (20 mg/day, $n=20$) in patients with T2DM. Triglyceride and free fatty acid reductions were greater with the combination therapy than with rosuvastatin monotherapy.

In this study, all variables were well-matched, and there were no initial differences between the two groups, including baseline lipid parameters except triglycerides (135.5 ± 47.7 mg/dL in rosuvastatin 20 mg/day group vs. 173.1 ± 64.1 mg/dL in rosuvastatin/ezetimibe 5/10 mg group, $P=0.03$). It would have been better if there was no difference in baseline triglyceride level between the two groups. Triglyceride values fluctuate widely over time, with a coefficient of variation of biological variability averaging about 23% and ranging up to 40%, and this variability can confound estimation of the risk of associat-

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ed CVD [7]. Combining dietary regulation, exercise, and moderation of alcohol intake can reduce triglycerides by up to 60% [8]. In this study, there is a possibility that lifestyle intervention influenced triglyceride reduction more than medication in the combination group.

Korean diabetes association recommended LDL-C be <100 mg/dL in diabetic patients without CVD [9]. Therefore, it would be helpful if the authors showed the achievement rate to the target LDL-C level (<100 mg/dL) in each group in this study. Another Korean study showed that about 92.1% of patients with T2DM taking a moderate-intensity statin achieved the target LDL-C level (<100 mg/dL) [10].

Lastly, the duration of this study (6 weeks) was too short to assess the effect of medication on other parameters such as fasting plasma glucose, HbA1c, insulin sensitivity, and waist circumference. As mentioned by the authors, a long-term follow-up study with a larger sample and cardiovascular outcome are needed to assess the clinical significance of this study.

The efficacy of statin in Asian populations differs from that in Caucasians. A statin dose that is lower than that used in Caucasian populations can be used to achieve a similar therapeutic effect in Asian populations [11]. Furthermore, since patients with diabetes mellitus (DM) have been shown to have more Niemann-Pick C1-like 1 (NPC1L1) mRNA than control subjects [12], ezetimibe may be useful for the treatment of patients with DM in whom cholesterol absorption is upregulated. Therefore, the combination of low-dose statin and ezetimibe might be a good option for the treatment of dyslipidemia in Korean patients with T2DM.

CONFLICTS OF INTEREST

No potential conflict of interest relevant to this article was reported.

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