Letter to the Editor

Letter by Ntaios et al Regarding Article, “Impact of Statin Therapy on Left Ventricular Function and Carotid Arterial Stiffness in Patients With Hypercholesterolemia”

To the Editor:

We read with great interest the article by Mizuguchi et al, which was recently published in Circulation Journal. In their study, the authors investigated the effect of pitavastatin in hypercholesterolemic patients and they demonstrated that 1 year of treatment improves regional left ventricular systolic and diastolic function, and preserves the left ventricular ejection fraction. Moreover, they assessed the effect of pitavastatin on subclinical atherosclerosis, measuring the changes in carotid intima–media thickness (IMT) and carotid arterial stiffness during the study. Although they found a significant reduction in carotid stiffness at the end of the study, a similar effect on IMT was not demonstrated.

We were surprised by the negative result of the study concerning the effect of pitavastatin on IMT. Numerous prospective, randomized trials have investigated the effect of statins on IMT and the vast majority demonstrate a significant regression of carotid IMT after statin therapy.

In 2001, Smilde et al showed that atorvastatin (80 mg) results in a significant 2-year IMT reduction by 0.031 mm in patients with familial hypercholesterolemia. The CAIUS study concluded that pravastatin (40 mg) decreases the mean maximum IMT in dyslipidemic patients by 0.0045 mm within 1 year of treatment, compared with an increase of 0.009 mm in patients treated with placebo. Similar findings were noticed by Wiegman et al in children with familial hypercholesterolemia, wherein pravastatin decreased IMT by 0.010 mm within 2 years, compared with an increase of 0.005 mm in placebo-controlled children. The effect of pravastatin on IMT was also investigated by McMahon et al in patients with coronary artery disease; they showed a statistically significant difference in mean IMT between active treatment and placebo groups (−0.014 mm vs 0.048 mm, respectively) within 4 years of treatment with pravastatin (40 mg).

In 1996, Hodis et al studied lovastatin in dyslipidemic patients with angiographically defined coronary artery disease and demonstrated an annual IMT decrease of 0.038 mm at 2 years compared with an increase of 0.019 mm in the placebo group. Similarly, the ACAPS study showed an annualized progression rate of −0.009 mm in the lovastatin group vs 0.006 mm in the placebo group in asymptomatic patients with mild dyslipidemia. The METEOR trial demonstrated a statistically significant reduction in the rate of progression of maximum CIMT after 2 years of rosuvastatin administration vs placebo.

In contrast, only 4 studies failed to confirm the effect of statins (namely, cerivastatin and pravastatin) on IMT. As an example, we mention the study by Ito et al, which showed that cerivastatin and pravastatin did not improve carotid IMT after 6 months of treatment.

A possible explanation for the negative results of the Mizuguchi trial could be the modest duration of follow-up, although this same duration was sufficient to demonstrate a positive effect on IMT in many statin trials. The small sample size (n=30) of the study is another possible reason.

We believe that larger randomized, placebo-controlled trials with longer follow-up are urgently needed to assess the effect of pitavastatin on IMT.

References