Statin use and Parkinson's disease incidence

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Dear Editor,

Hippisley-Cox and Coupland conducted a big cohort study and concluded that statin was not significantly associated with risk of Parkinson's disease (PD) [1]. I want to present the recent trend of the association, which mainly presented the preventive effects of statin use on the risk of PD.

Lin et al. conducted a prospective study to evaluate the association between the statin dosage and PD incidence in patients with diabetes, and adjusted hazard ratios (HRs) of statin use for PD incidence significantly decreased both in females and in males [2]. In addition, any statins except lovastatin presented protective effects on PD incidence with a dose-dependent trend. In contrast, Jeong et al. conducted a prospective study and adjusted HR of statin "ever use" for PD incidence significantly increased [3]. By stratifying the duration of statin use, significance was recognized only in patients with a duration of statin use < 365 days, and a long-term and adherent statin use (≥ 365 days) was not significantly associated with PD incidence. Metabolic disorders sometimes coexist in patients with dyslipidemia, and glucose metabolism would affect vascular endothelial functions, which would partly relate to neuro-degenerative disorders.

Second, Huang et al. reported that odds ratios (ORs) of fasting plasma (S)24-OH-cholesterol levels, which was brain-derived cholesterol metabolite, for PD significantly decreased [4]. In contrast, 27-OH-cholesterol, which was a peripheral cholesterol metabolite, had no significant association with PD. This means that peripheral disorders of lipid metabolism do not relate to PD. Not only statin use but also the level of dyslipidemia in the brain should be monitored as a risk for PD incidence.

Finally, there are some meta-analyses on the effect of statin use on the PD incidence. Poly et al. reported that the pooled

relative risk of statin use for PD significantly decreased, although there was a significant heterogeneity between estimates [5]. They also pointed out the ethnic difference in the effect size. Yan et al. also reported that the pooled OR of statin use for PD significantly decreased, and atorvastatin presented the highest reduction of PD risk [6]. Taken together, there is a protective effect of statin for PD and randomized controlled trials and related meta-analyses are needed to verify the results with special reference to the type of statin.

Compliance with ethical standards

Conflict of interest None.

Ethical approval None.

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