“Get With the Guideline” Treatment With Statin

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Hyperlipidemia is a well-known risk factor for ischemic stroke and cardiovascular disease, in addition to hypertension and diabetes mellitus. Previous clinical studies and meta-analyses have shown that appropriate therapy favorably reduces the incidence of both stroke and cardiovascular events.¹ However, in practice, there is a large number of cases of inappropriate management of event prevention² one of the reasons for this is non-adherence to prescribed therapy.

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There are several lines of evidence of the low-density lipoprotein-cholesterol-lowering efficacy of statins for the prevention of stroke and cardiovascular events.¹ The Stroke Prevention by Aggressive Reduction in Cholesterol Levels (SPARCL) trial conducted in Europe showed that high-dose atorvastatin (80mg/day) reduced the recurrence of stroke.³ Recently, the Japan Stain Treatment Against Recurrent Stroke (J-STARS) study demonstrated that therapy with low-dose pravastatin (10mg/day) reduced atherothrombotic infarction incidence by 67% compared with non-statin.⁴ Percutaneous coronary intervention with statin therapy reduced in-hospital mortality 30 days after acute coronary disease.⁵ In addition, statin use was associated with decreased mortality rates in patients with heart failure with preserved ejection fraction.⁶ The efficacy of statin can be expected with appropriate adherence to the medication. However, in practice, many patients discontinue their medication within 1 year (Table). Only half of the patients with advanced age adhere to statin therapy 1 year after initiation.⁷ Moreover, the 2-year statin adherence rate is only 40.1% in patients with acute coronary syndrome and 36.1% in patients with chronic coronary artery disease.⁸ Regarding the relation-

ship between statin adherence and a cardiovascular event, good statin adherence reduces recurrence.⁹ In stroke patients, statin persistency rate was 39% at 1 year after their discharge.¹⁰ Patients discontinuing statin therapy showed increased mortality in the first year after acute stroke. Predictors of poor statin adherence are reported as age >75 years, female sex, concomitant cardiovascular medication, and higher medication copayments.^{11,12}

In this issue of the Journal, Chen et al¹³ retrospectively analyze 15,408 patients admitted with ischemic stroke and transient ischemic attack (TIA) who had statin therapy initiated during hospitalization, using the Taiwan Bureau of National Health Insurance database. Patients were divided into 3 groups according to statin adherence. Compared with the patients in the good adherence group (medication possession ratio >80%), patients in the poor and intermittent adherence groups had higher risk of worse composite outcome including ischemic stroke recurrence, hemorrhagic stroke, and an acute coronary event. A Canadian study intended to assess the influence of statin adherence in primary prevention reported that patients with good statin adherence had a lower incidence of stroke than patients with poor statin adherence.¹⁴ When paired with Chen et al's study, the importance of statin adherence is evidenced for both primary and secondary prevention of stroke.

Chen et al report no significant association between statin adherence and hemorrhagic stroke incidence.¹³ In the SPARCL trial, a high-dose atorvastatin group had a higher incidence of hemorrhagic stroke than the control group.³ On the contrary, in J-STARS, low-dose pravastatin therapy did not increase hemorrhagic stroke incidence.⁴ Chen et al report that only a limited number of patients (0.9%) received high-dose statin therapy while almost all other patients received low-dose (52.5%) or medium-dose statin therapy (46.7%).¹³ Therefore,

Table. Studies of Adherence to Statin Therapy

Authors	Benner et al ⁷	Jackevicius et al ⁸		Chen et al ¹³
Subjects	Elderly patients n=34,501	Acute coronary syndrome n=22,379	Coronary heart disease n=36,106	Ischemic stroke and TIA n=15,408
Rate of good adherence (Time of assessment)	43% (6 months)	57.6% (1 year)	54.2% (1 year)	35.1% (1 year)
Method	Prescription	Prescription		Prescription
Definition of good adherence	PDC ≥80%	Prescription refills >80%		MPR >80%

MPR, medication possession ratio; PDC, proportion of days covered; TIA, transient ischemic attack.

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it is suggested that no association between statin therapy and hemorrhagic stroke incidence may be observed when low- or medium-dose statin therapy is used in Asian patients.

Chen et al evaluated statin adherence retrospectively. Therefore, the good clinical outcomes reported may also be because of good adherence to other medications in addition to statins. It may be difficult to overlook the influence of adherence to other medications.

“The Get With The Guidelines” program is a hospital-based quality improvement initiative developed by the American Heart Association with the goal of improving care for patients with heart disease and stroke.¹⁵ Considering the low rate of adherence to therapy, even after stroke or cardiovascular events, it may be important and necessary to develop a protocol to ensure patient adherence.

Conflicts of Interests/Disclosures

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