J-STARS

Japan Statin Treatment Against Recurrent Stroke

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Abstract

Background and Aims
The clinical trial, J-STARS was planned to overcome the lack of evidence concerning secondary prevention of stroke with statin in Japan.

Study Design and Patients
In this open label, randomized, prospective, blinded-endpoint study, patients who aged 45 to 80 years, had serum total cholesterol levels of 180-240 mg/dl and had any histories of non-cardiogenic infarction within 1 to 36 months after stroke were applied, from Mar. 2004 to Feb. 2009.

Outcome Endpoints
The primary endpoint is cerebrovascular events including TIA.

Analysis
The final analysis will be performed by employing Kaplan-Meier survival method, log-rank test and Cox proportional hazard model.

Trial Status
A total of 1578 patients were recruited from 123 centers by the end of February 2009, and have been in the process of follow-up for 3.2 years of the mean duration.

Introduction and Purpose

- In Japan, it is still unclear if hyperlipidemia is a risk factor of recurrent stroke or not in the ischemic stroke patients without coronary heart disease (CHD), though inhibition of 3-hydroxy-3-methylglutaryl-coenzyme A (HMG-CoA) reductase could decrease the incidence of cardiovascular diseases including CHD and ischemic stroke in this population (Management of Elevated cholesterol in the primary prevention Group of Adult Japanese, MEGA) 1).
- High dose of atorvastatin (80mg per day) was shown to decrease the overall incidence of strokes in the patients with stroke or TIA (Stroke Prevention by Aggressive Reduction in Cholesterol Levels, SPARCL) 2)
- The neuroprotective mechanism beyond cholesterol-lowering effects could be expected to attenuate cerebrovascular inflammation and atherosclerosis.
- The present study hypothesizes if treatment with low dose of pravastatin (10mg per day) prevents recurrent stroke in Japanese patients with ischemic stroke with safety.

Methods

Inclusion Criteria

- Age: 45-80 years
- Total cholesterol levels: 180-240 mg/dl
  (without the prescription of statin within previous 30 days)
- Patients who had a history of non-cardiogenic infarction 1 to 36 months after stroke are applied

Randomized
Open Labeled

Pravastatin 10mg/day group

Non-statin group

Follow-up: 5-6 years
The mean duration of follow-up will be 5.5 years.

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Outcome Endpoints

Primary Endpoint

Cerebrovascular events including TIA

Secondary Endpoints

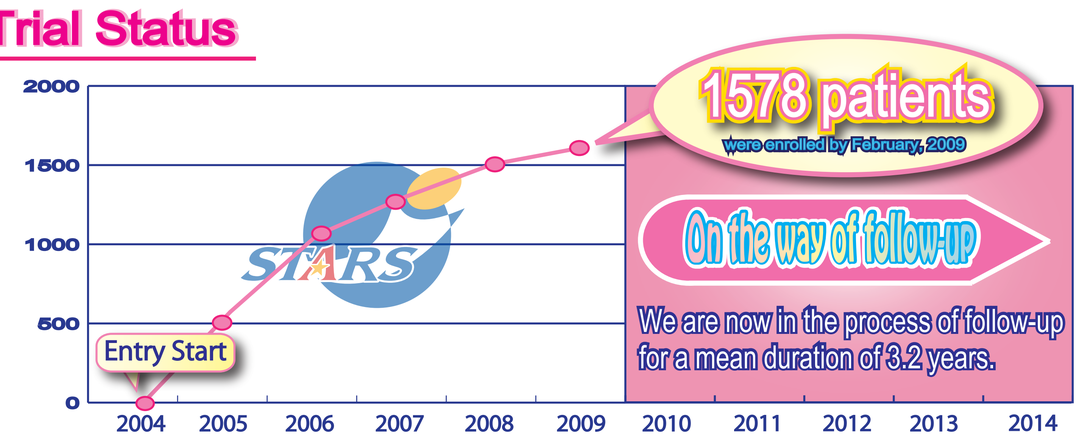
Ischemic stroke
Hemorrhagic stroke and myocardial infarction
All the cerebrovascular and cardiovascular events
Death from strokes
Death from cardiovascular events
Death from other causes
Any hospitalization
Deterioration modified Rankin Scale or Barthel Index
Dementia and mild congnitive impairments

Analysis

Independent Data and Safety Monitoring Board will perform the interim analysis in 2011. The final analysis will be performed by employing Kaplan-Meier survival method, log-rank test and Cox proportional hazard model.

Results

Trial Status



Baseline Characteristics of Patients

Characteristics	All patients N=1578
Time since entry event (days, mean±SD)	314.2±308.4
Age (year, mean±SD)	66.2±8.5
Male sex (%)	68.9
Systolic blood pressure (mmHg, mean±SD)	137.1±17.8
Diastolic blood pressure (mmHg, mean±SD)	79.3±11.3
Body-mass index (kg/m², mean±SD)	23.7±3.1
Entry event (%)	
Atherothrombotic infarction	25.4
Lacunar Infarction	64.2
Undetermined etiology	10.4

Characteristics	All patients N=1578
Risk factors (%)	
History of hypertension	75.9
History of diabetes mellitus	23.3
History of coronary artery disease	5.1
Current smoker	16.6
Exsmoker	37.0
Concomitant therapy (%)	
Lipid lowering drugs	7.4
Antihypertensive drugs	60.4
Antiplatelet drugs	91.1
Lipids (mg/dl, mean±SD)	
Total cholesterol	210.0±24.7
LDL cholesterol	129.5±24.5
HDL cholesterol	53.5±15.8
Triglyceride	142.5±74.2

SDV (Sourse Document Verification) is still ongoing

Conclusions

- 1578 patients had been enrolled at 123 centers participating J-STARS for five years (Mar. 2004 - Feb. 2009) and assigned to 2 study groups at random.
- Patients in J-STARS must be followed for 5-6 years (mean follow-up period: 5.5 years).
- We are now in the process of follow-up for mean duration of 3.2 years.
- We plan interim Analysis in September 2011.

References

1. Nakamura H, et al.: Primary prevention of cardiovascular disease with pravastatin in Japan (MEGA Study): a prospective randomised controlled trial. Lancet 2006; 368: 1153-63.
2. Amarenco P, et al.: High-dose atorvastatin after stroke or transient ischemic attack. N Engl J Med 2006; 355: 549-59.

Additional Information

Trial Registry Number: NCT00221104
Trial Sponsors: Translational Research Informatics Center, Kobe, Hyogo, Japan.
The Japanese Ministry of Health, Labour and Welfare
Trial Website: http://jstars.umin.ne.jp (Japanese & English)