Efficacy of Statin Treatment after Endovascular Therapy for Isolated Below-the-knee Disease in Patients with Critical Limb Ischemia

Y. Tomoi (1), Y. Soga (1), O. Iida (2), Y. Yamauchi (3), K. Hirano (4), K. Suzuki (5), Y. Miyashita (6), D. Kawasaki (7), N. Suematsu (8), J. Tazaki (9)
(1) Kokura Memorial Hospital, Kitakyushu, Japan (2) Osaka Rosai Hospital, Osaka, Japan (3) Kikuna Memorial Hospital, Yokohama, Japan (4) Saiseikai Yokohama City Eastern Hospital, Yokohama, Japan (5) Sendai Kousei Hospital, Sendai, Japan (6) Shinshu University Hospital, Matsumoto, Japan (7) Hyogo College of Medicine, Nishinomiya, Japan (8) Japanese Red Cross Fukuoka University, Fukuoka, Japan (9) Kyoto University Hospital, Kyoto, Japan

Abstract

Objectives: To investigate the efficacy of statin treatment after endovascular therapy (EVT) for isolated below-the-ankle (BTK) lesion with CLI.

Background: The efficacy of statin treatment for coronary artery disease (CAD) is already established, but little is known about the efficacy of statin treatment after EVT for isolated BTK disease. Whereas rate of cardiovascular death, limb salvage and MALE did not differ significantly between groups (64.5% vs. 45.9%, P=0.004; 64.1% vs. 43.8%, P=0.003; and 84.4% vs. 82.9%, P=0.64; respectively). In the subgroup that was ambulatory at baseline (513 patients), statin treatment significantly improved overall survival (hazard ratio [HR], 0.54; 95% confidence interval [CI]: 0.29-0.97; adjusted P=0.04) and numerically improved AFS (HR, 0.63; 95% CI: 0.35-1.07; adjusted P=0.086). In a group of 10 patients, there was no significant difference in rates of repeat revascularization, cardiovascular death, limb salvage, and MALE between groups.

Conclusion: Statin treatment improve overall survival and AFS after EVT for isolated BTK disease, whereas rate of cardiovascular death, limb salvage and MALE did not differ.

Keywords: Statin, Endovascular therapy, Critical limb ischemia, Overall survival, Amputation, Freedom from revascularization.

Materials and methods: From March 2004 to June 2011, 812 patients (with 812 first EVT) were enrolled (n=643). In this retrospective study, CLI patients in whom statin treatment could be given before EVT for de novo isolated below-the-knee lesion were included. The American Heart Association and the National Cholesterol Education Program have identical risk reduction guidelines for PAD and coronary artery disease (CAD), with goal LDL cholesterol <100 mg/dl in these high risk patients, irrespective to age, gender, smokers, or diabetes mellitus.

Methods

1. Overall survival. 2. Amputation-free survival (AFS). 3. Cardiovascular death. 4. Limb salvage rate. 5. Freedom from repeat revascularization. 6. Major adverse limb event (MALE: any repeat revascularization for limb and major amputation [defined as above the-ankle amputation]).

Outcome measures

884 consecutive patients (1058 limbs) with CLI underwent EVT for the de novo isolated below-the-knee lesions (March 2004 to June 2011)

812 patients (with 812 first-treated limbs) were enrolled

Overall survival

Amputation - free survival

Freedom from repeat revascularization

Freedom from cardiovascular death

Limb salvage rate

Freedom from MALE

Subanalysis (ambulatory patients)

Outcome measures

Statin group Control group

Outcome measures

Statin group Control group

Overall survival

127 (15.1) 237 (34.3)
P Adjusted P

AFS

103 (87.3) 296 (76.5)
P Adjusted P

Freedom from MAE

103 (87.3) 296 (76.5)
P Adjusted P

In this retrospective study, CLI patients in whom statin treatment could be given before EVT for isolated BTK disease could be continued after the procedure experienced better overall survival and amputation-free survival rates than those in whom statin treatment could not or was not given.