Association of statin use and outcomes in elderly with multiple risk factors: insight from the CORE registry Thailand

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Introduction: Statin is recommended by for lipid management in adults aged between 40 and 75 years old at risk for atherosclerotic cardiovascular disease (ASCVD). The evidence from meta-analysis suggested that the benefit of statin for primary prevention in the elderly was less robust than in the non-elderly. A dedicated randomized controlled trial of primary prevention with a statin in the elderly is currently ongoing. We aimed to study the association of statin use as a primary prevention for ASCVD on major adverse cardiac events in the elderly versus non-elderly in the Cohort Of patients with a high Risk of cardiovascular Events (CORE).

Method: The CORE registry was a nationwide study enrolling patients with established ASCVD or those with multiple risk factors (MRFs) between April 2011 and March 2014 in 25 hospitals. Patients with MRFs were included in the present analysis. Patients were stratified according to age and the status of statin use. The Elderly was defined as age over 75 years old. Any type and intensity of statin at baseline were counted as statin use.

The primary outcome was the major adverse cardiac events (MACE), defined as the composite of all-cause death, stroke, or myocardial infarction. The association between statin use and outcomes was assessed overall and in the two groups of elderly versus non-elderly in the adjusted Cox regression models. Factors associated with both likelihood of statin use, and outcomes were used as adjusted variables.

Results: Of the 4,529 patients in the study, 729 patients were elderly (16.1%). The proportion of females was 57%, with a mean age of 65.6 years. The rate of statin use at baseline was similar between the elderly (84.9%) and non-elderly (83.6%) (p 0.41). The average follow-up time was 45.3 months. Statin use was associated with a significantly lower risk of MACE at five years. The incidence of MACE was highest in the elderly without statin use and lowest in non-elderly with statin use. Statin use at baseline was associated with a lower risk of MACE in both the elderly and non-elderly (p interaction 0.29). The risk of heart failure (HF) in the elderly treated with a statin was significantly lower than elderly without statin use (adjusted HR 0.37, 95%CI 0.14-0.96), while the risk of HF was similar between non-elderly with or without statin (adjusted HR 0.58, 95%CI 0.30-1.15). Statin use was associated with a lower risk of peripheral arterial disease in the elderly (adjusted HR 0.07, 95% 0.01-0.73) but not in the non-elderly (adjusted HR 0.57, 95%CI 0.18-1.82). There was a trend toward lower risk of stroke, MI, or PAD in the elderly treated with statin than those without statin use (adjusted HR 0.48, 95% 0.22-1.07).

Conclusion: Statin use was associated with a significantly lower risk of MACE, HF, and PAD in the elderly with multiple risk factors of ASCVD in the CORE registry.

MACE according to statin and age group
Outcomes according to statin and elderly