Statins use and new-onset atrial fibrillation

Chen-Sheng Chen [1,2,4], Hung-Yi Chen [1], Gwo-Ping Jong [3]
[1]School of Pharmacy, China Medical University
[2]Taichung City Pharmacists Association
[3]Chung Shan Medical University Hospital
[4]Taiwan Pharmacist Association

Background

Modern medical development has become more efficient. Hence many diseases are well controlled. However, some diseases still causes high mortality rate. For instance, atrial fibrillation (AF) often leads to stroke, heart failure, and sudden death. Therefore, it is beneficial to develop an effective prevention for AF.

Aims

To investigate relationship between statins and new-onset AF. Therefore, we hope to reduce morbidity and mortality of AF and its complications. So that it could enhance medication safety, and reduce hospitalization as well as overall medical expenditures.

Methods

This retrospective population-based cohort study was conducted to investigate the relationship between lipid-lowering therapy drugs and AF form National Health Insurance Research database (NHIRD) 2002-2013 in Taiwan. The patients were followed up for more than 180 days; and the tracking time was from January 1, 2004 to December 31, 2013. The COX model was used to calculate the relationship between seven types of statin and the incidence of AF. Statins include atorvastatin, lovastatin, pravastatin, rosuvastatin, simvastatin, pitavastatin as well as fluvastatin.

Results

A total of 64915 patients were included, of whom 4302 (6.6%) had the incidence of AF and with an average age of 66.1 years (Figure 1). However, the amounts of males(52.1%) were greater than the females(47.9%)(Figure 2~3). After the adjustment for age, sex, and risk factors, the patients who took rosuvastatin and pitavastatin had reduced incidence of AF, and patients took other statins were not significantly different from those took above statins. Drug-6(Rosuvastatin) hazard ratio 0.823 (95% CI =0.577-1.215 P=0.3217) no significant difference.(Figure 4) Drug-7(Pitavastatin) hazard ratio 0.071 (95% CI= 0.010-0.509 P=0.0085) had staticaly significant difference.(Figure 5)

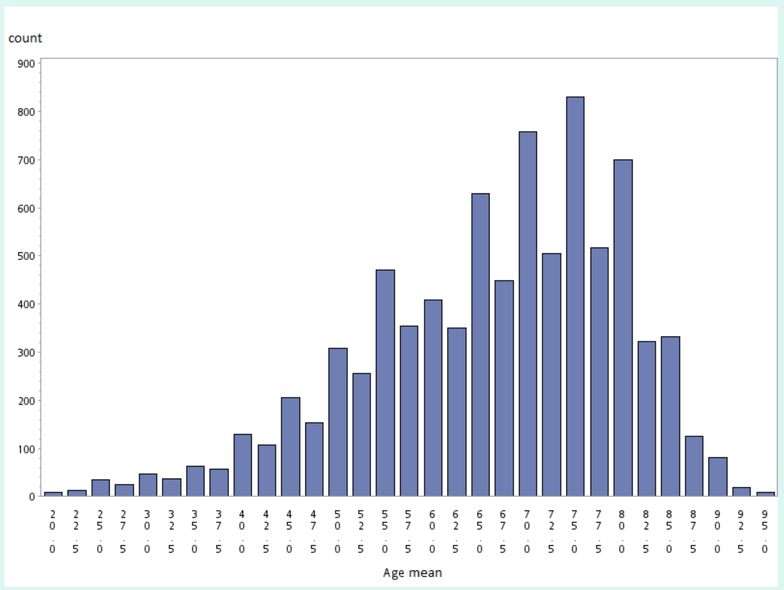

Figure 1. Patients with AF distributed by age

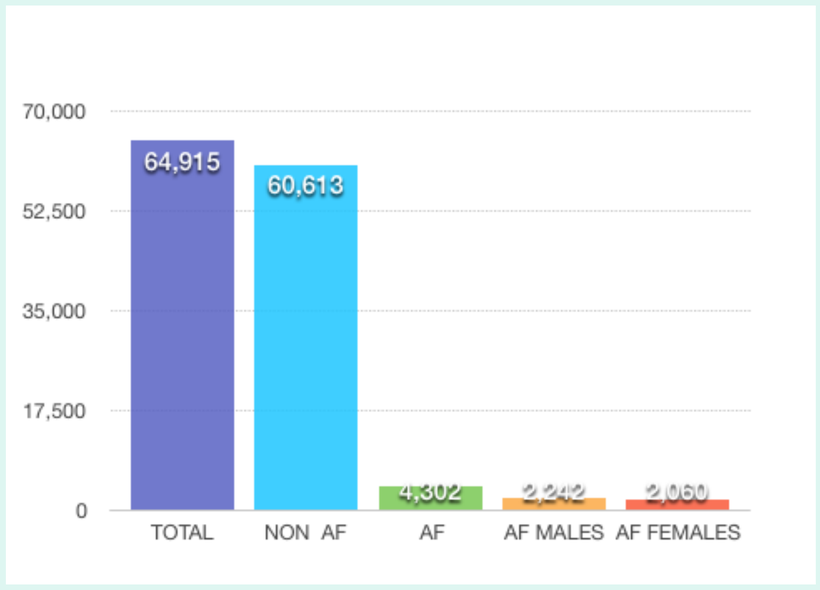

Figure 2. Baseline characteristics of all patients

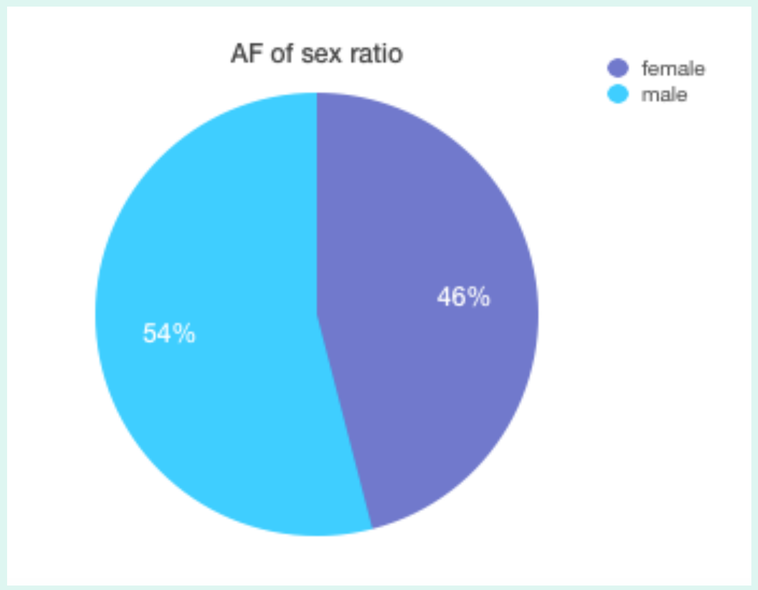

Figure 3. The ratio AF(Atrial fibrillation) of males and females

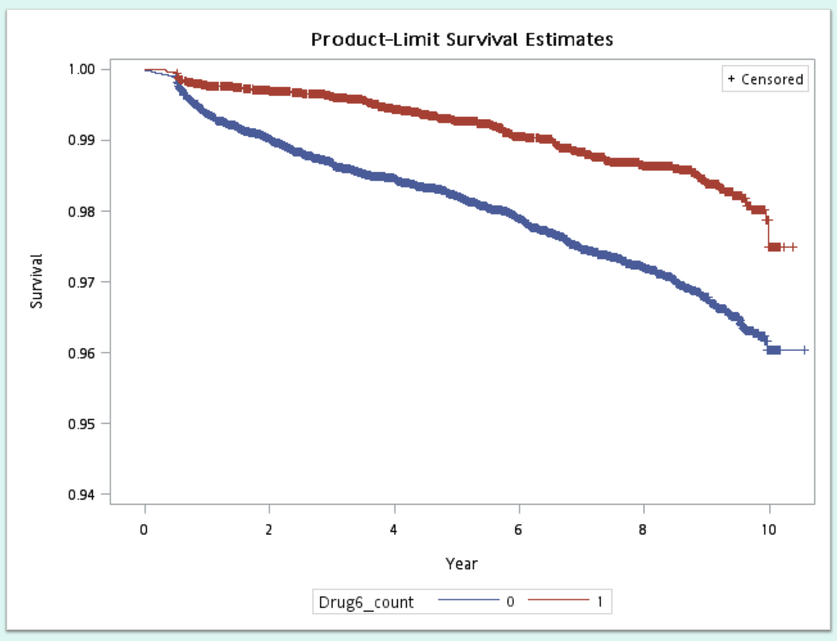

Figure 4. Rosuvastatin has no significance difference hazard ratio 0.823 (95% CI=0.577-1.215) P=0.3217

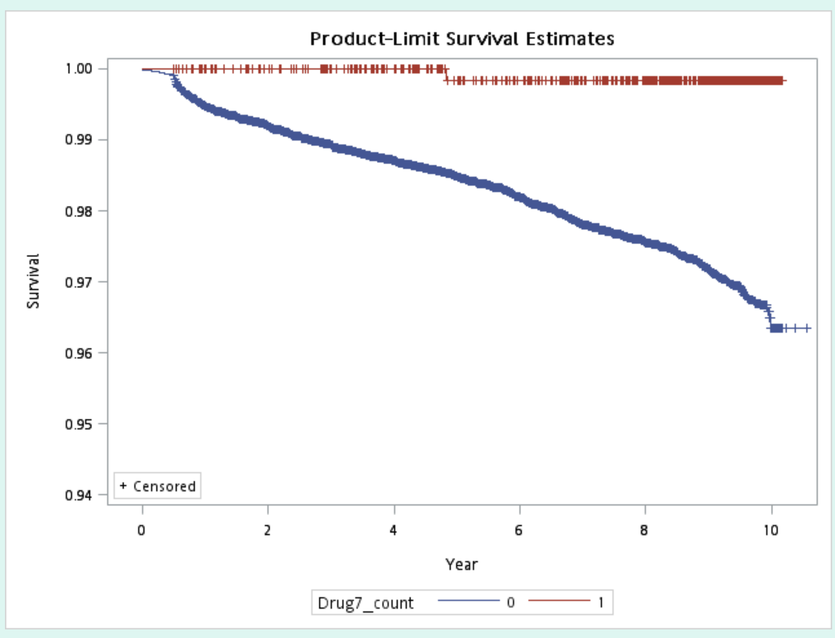

Figure 5. Pitavastatin has significance difference hazard ratio 0.071 (95% CI 0.010-0.509) P=0.0085

Conclusions

We found rosuvastatin and pitavastatin might prevent atrial fibrillation, but only pitavastatin had a staticaly significant effect.