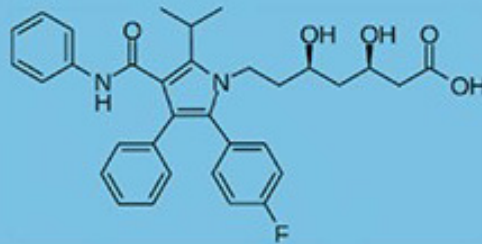


**IAS STATIN**  
NEWSLETTER**INTERNATIONAL**  
**ATHEROSCLEROSIS**  
SOCIETY

A CURATED WEEKLY UPDATE OF ALL STATIN PUBLICATIONS

Update - Week 05 &amp; 06, 2022



Curated by Peter Lansberg,  
a Dutch lipidologist and educator, and  
reviewed by prof. Philip Barter, Past President of the  
International Atherosclerosis Society.

The IAS statin literature update will keep you up-to-date with all recent statin publications, using a curated approach to select relevant articles.

## Key publications

### Preserving graft patency after CABG?

Coronary artery bypass graft (CABG) surgery is indicated for left main and three-vessel coronary stenosis. Although this is a successful and well-established procedure, recurrence of anginal complaints is common. Approximately 17% of patients with a CABG report shortness of breath after one year, increasing to >60% after 10 years. For the CAB procedure, the left internal mammary artery (LIMA) is the preferred graft to ensure prolonged patency; the main driving force for coronary graft stenosis is the progression of atherosclerosis. In this retrospective analysis of a single Beijing hospital, 618 patients with chest pain recurrence after a CABG using a LIMA graft were evaluated. All patients were hospitalized between 2010 and 2017. This study aimed to determine the impact of the standard AS risk factors and the use of statins on LIMA graft stenosis. In 161 of the patients, LIMA graft failure was observed, risk factors that increased this risk were post-operative smoking, OR:1.86 (1.26-2.78); CABG >10 years, OR: 2.24 (1.39-4.32); hyperglycemia without diabetes, OR: 2.44 (1.39-4.32). Protective factors were statin use, OR:0.28 (0.25-0.50), and LDL-c <1.8 mmol/L, OR: 0.27 (0.14-0.53); only 15% of the patients were able to reach the target LDL-c of <1.8 mmol/L. The data collected in this retrospective observational study provides insights into the importance of CV risk factor control to ensure the prolonged benefit of CABG using a LIMA graft. Due to the limitations of the observational design of this study, well designed prospective follow-up trials to confirm these findings are warranted.

Zuo HJ, Nan N, Yang HX *et al.* Impact of Conventional Cardiovascular Risk Factors on Left Internal Mammary Artery Graft Disease. *Frontiers in cardiovascular medicine* 2021; 8:705765. <http://www.ncbi.nlm.nih.gov/pubmed/?term=35096986>

## Is a “double hit” needed to trigger an increased CVD risk with high Lp(a)?

Lp(a) is the new kid on the block; while we have struggled with this lipoprotein for 60 years, new RNA-based treatments present us with realistic interventions to effectively reduce this lipid fraction. Although more evidence is surfacing that shows the impact of an increased plasma Lp(a) > 50 mg/dl, or >90 nmol/L on CVD risk, the observation that among those with high Lp(a), there are octogenarians or even older individuals that are seemingly unaffected is confusing. In this study 30 908 Chinese CAD patients treated with statins (2007 – 2018) were enrolled. Patients were categorized according to baseline LDL-c levels, at a cut-off of 70 and 100 mg/dl. The primary outcome was 5-year all-cause mortality. After a 5-year follow-up, 2 383 (7.7%) patients died. An increase Lp(a) of > 50 mg/dL was associated with an increased risk of dying, HR:1.9 (1.07-1.31). When comparing participants with an LDL-c <100 mg/dL to those with an LDL-c >100 mg/dL, and Lp(a) >50 mg/dL was associated with an increased mortality risk only in those with a baseline LDL-c >100 mg/d; HR:1.9 (1.04-1.36). Yao Y, Liu J, Wang B *et al.* Baseline Low-Density-Lipoprotein Cholesterol Modifies the Risk of All-Cause Death Associated With Elevated Lipoprotein(a) in Coronary Artery Disease Patients. *Frontiers in cardiovascular medicine* 2021; 8:817442. <http://www.ncbi.nlm.nih.gov/pubmed/?term=35097030>

## RA patients benefit from statins despite an increased risk of developing DM2

Patients affected with rheumatoid arthritis have an increased ASCVD risk as well. In this retrospective analysis of the UK Clinical Practice Research Datalink (CPRD), a propensity score-matched analysis was performed, comparing each patient using a statin (N=1768) with two patients not using statins (N+ 3528). Patients were followed until the occurrence of a composite endpoint (myocardial infarction, stroke, hospitalized heart failure or CVD-mortality, all-cause mortality, and incident T2DM. Comparing the statin initiators with patients not starting statins, 340 CVD (3.0/100 PY vs. 2.7/100 PY) and 62 vs. 525 deaths (2.8/100 PY vs. 4.1/100 PY) occurred, respectively. Incident T2DM was noted in 128 of 3608 statin initiators (3.0/100 PY) and 518 of 7208 non-users (2.0/100 PY). Patients using a statin had a 32% lower risk for CVD, HR:0.68 (0.51- 0.90); a lower risk of all-cause mortality of 54%, HR:0.46 (0.35-0.60), and There is a 33% increased risk for developing DM2, HR:1.33 (1.09- 1.63) risks. The number needed to treat/harm to prevent a CVD, all-cause mortality, or cause T2DM in 1-year was 102, 42, 127, respectively.

Ozen G, Dell'Aniello S, Pedro S *et al.* Reduction of Cardiovascular Disease and Mortality versus Risk of New Onset Diabetes with Statin Use in Patients with Rheumatoid Arthritis. *Arthritis care & research* 2022. <http://www.ncbi.nlm.nih.gov/pubmed/?term=35119769>

## Can statins prevent pacing induced cardiomyopathy?

Patients with an atrioventricular block (AVB) are managed with pacemaker implantation. Pacing induced cardiomyopathy (PICM) is observed in 10-20% of pacemaker treated AVB. Statins might reverse lipid accumulation in the cardiomyocytes, preserve LV function, and improve the clinical outcomes of patients with AVB requiring long-term RV pacing. The authors examined the effects of atorvastatin in rat ventricular myocytes, pigs randomized to right ventricular pacing + atorvastatin or no statins, and a sham arm. They also enrolled 1717 AVB patients that were managed with a pacemaker and compared the effects of statins on cardiovascular death or heart failure hospitalization. Lipid accumulations were

significantly reduced by atorvastatin in the rat model. Left ventricular ejection fraction (LVEF) was significantly reduced in the AVB pig pacing group compared to the pigs treated with atorvastatin. Both lipid accumulation and fibronectin expression were also lessened in the atorvastatin-treated group. Patients receiving statins had a significantly reduced risk for cardiovascular death, HR:0.69(0.56-0.84) and heart failure hospitalizations, HR:0.45 (0.30-0.67). Patients using statins had a better LVEF as well.

Lin YS, Lip GYH, Ho WC *et al.* Statins to prevent pacing-induced cardiomyopathy: Evidence from the bench applied to clinical studies. Heart rhythm 2022. <http://www.ncbi.nlm.nih.gov/pubmed/?term=35108621>

### Statins an opportunity for primary prevention in Elderly patients?

Data collected in the Korean National Health Insurance Corporation-Senior Cohort between 2002 to 2015 was used to evaluate the impact of statins in elderly (>75 years) Koreans. Patients not previously diagnosed with cardiovascular disease and using statins (N=685) were pair-matched with statin non-users (N=1370). The follow-up duration was 8.7 years; primary endpoints were mortality and MACE. Statin users were less likely to die compared to no-statin users, HR:0.97 (p=0.71) for low-intensity statin users and HR:0.80 (P<0.002). The risk for MACE in statins users was 1.10 (p=0.39) in the low-intensity statin users and 1.29 (P=0.001) in the moderate-intensity users; this risk disappeared after 5-years in the moderate-intensity statin users. The risk for NODM was increased in the moderate-intensity statin users compared to those not taking statins, HR:1.50( P<0.001) for up to three years. However, this risk disappeared after 5-years, HR: 0.90 (p=0.52). The authors concluded that moderate strength statins use for 5 or more years in elderly Korean patients was associated with a low risk for all-cause mortality and supports that the use of statins is safe and tolerable.

Kim S, Choi H, Won CW. Moderate-intensity statin use for primary prevention for more than 5 years is associated with decreased all-cause mortality in 75 years and older. Archives of gerontology and geriatrics 2022; 100:104644. <http://www.ncbi.nlm.nih.gov/pubmed/?term=35121242>

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