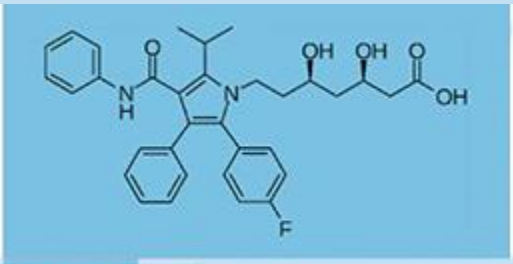
IAS STATIN NEWSLETTER



INTERNATIONAL ATHEROSCLEROSIS SOCIETY

A CURATED WEEKLY UPDATE OF ALL STATIN PUBLICATIONS

Update - Week 07, 2021

**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

Impact of stopping statins on plaque changes

To evaluate statin adherence on plaque changes, 100 consecutive patients were divided into three groups and followed for one year. Group A (N=29) continued using statins, group B (N=39) used statin intermittently, and group C discontinued statins (N=32). All patients underwent coronary angiography (CAG) at baseline and after one-year CAG. Patient characteristics were not significantly different at baseline. The most severe plaques were analyzed for volume change and rate of progression/regression. Only those that used statins continuously showed significant plaque regression (P<0.001). The observed changes correlated with plasma LDL-c levels, but only in the patients that were statin adherent.; R=0.362; P=0.13). Patients that used statins intermittently or stopped using statins failed to show regression. Instead, coronary plaque volume increased. There were no differences in adverse cardiovascular events between the three groups, but the small sample size lacked sufficient power to evaluate endpoint differences; however, a trend towards increased events in groups B and C was noted. These findings emphasize the importance of statin adherence in high CVD risk patients with manifest

coronary artery atherosclerosis.

Wu X, Liu XB, Liu T *et al.* **Effects of different statins application methods on plaques in patients with coronary atherosclerosis.** World journal of clinical cases 2021; 9:812-821. http://www.ncbi.nlm.nih.gov/pubmed/?term=33585627

Risk of ICH reduced in patient that used antiplatelets or statins - ARIC study

The bleeding risk associated with commonly used medication for ASCVD was assessed in the ARIC (Atherosclerosis Risk in Communities) study participants. Individual patient data were collected in 4 US communities between 1987 and 1989, with follow-up information from 2011 to 2013. Brain MRI imaging was performed in 1942 ARIC participants, allowing them to detect intracerebral hemorrhages (ICH) as well as cerebral microbleeds (CMB). The time-varying use of antiplatelets, anticoagulants, and statins was evaluated to determine their impact on ICH and CMB. ICH was observed in 130 ARIC participants; risk for this complication was significantly lower in patients that were taken antiplatelet drugs; HR: 0.53 (0.30-0.92). This was also noted for statin used; HR:0.13 (0.05-0.34). For CMB, no association with the use of antiplatelets, anticoagulants, and statins was detected. These findings suggest different risk profiles for bleeding risk exist and need to be managed with different strategies. The ARIC study findings provide the support that statin use is associated with reduced ICH risk; based on the observational design of this analysis, confirmation in well-designed prospective follow-up studies remains detrimental to solidify this evidence.

Sharma R, Matsushita K, Wu A *et al.* **Common Medications and Intracerebral Hemorrhage: The ARIC Study.** J Am Heart Assoc 2021; 10:e014270. http://www.ncbi.nlm.nih.gov/pubmed/?term=33586464

Statin and aspirin use in elderly patients - NHANES data

Reducing CVD risk is not a one-size-fits-all. This National Health and Nutrition Examination Survey (NHANES) evaluated adults aged 50 years and older. Those patients that used aspirin or statins were divided into primary prevention and secondary prevention categories. Eligibility for primary prevention therapy increased with age, from 31.8% age 50-54 to 52.0% age 75 and older. For secondary prevention, a similar trend was noted, 2.7% for those aged 50-54 years to 21.1% in patients 75 years or older. The use of low-dose aspirin increased with age as well (P<0.001); 45.3% of those > 75 years used daily aspirin for primary prevention purposes. Statins were used more frequently by elderly patients as well (P<0.001), and in a secondary prevention setting, 56.4% of patients 75 years and older used statins. The authors concluded that despite the evidence of a lack of benefit, many patients >75 years of age continued to use aspirin for preventing a first ASCVD event. In contrast, despite the well-established benefit of statins in secondary prevention in elderly (> 75 years) patients, almost half of those were not taking statins. Education of both healthcare providers and older adults is warranted to ensure the appropriate use of both aspirin and statins.

Rhee TG, Kumar M, Ross JS, Coll PP. **Age-Related Trajectories of Cardiovascular Risk and Use of Aspirin and Statin Among U.S. Adults Aged 50 or Older, 2011-2018.** J Am Geriatr Soc 2021. http://www.ncbi.nlm.nih.gov/pubmed/?term=33598936

Managing ASCVD recurrences warrants strict LDL-c control

Recurrences of ASCVD events are undervalued in terms of the urgency of risk factor management. In this real-world analysis of a Finnish hospital health registry, patients admitted for an ASCVD event (2004 -2016) were monitored for consecutive cardiovascular events or cardiovascular death, low-density lipoprotein cholesterol, and statin purchases. Duration for subsequent events and factors that predicted a recurrence were evaluated. The interindividual variation for ASCVD recurrences was considerable; each additional event was associated with increased risk. The median time for a recurrence decreased from 7 to 1 year when comparing the 2nd and 5th events. Event rates swelled from 12/100 patient-years to 43/100 patients-years. The most vulnerable period was the first year after a subsequent ASCVD event. An increased risk was noted in patients that did not use the appropriate statin or statin dosage. A target LDL-c <1.8 mmol/L was reached by 18% of the patients in the year following the ASCVD event. High-intensity statins, six months post-event, were used by 22% of the participants. The authors concluded that event rates are not stable over time but increase 1.2-1.9-fold per consecutive event. A more intensive multifactorial strategy is warranted to address insufficient LDL-c control reflecting inadequate dosing and statin potency.

Lassenius MI, Toppila I, Bergius S *et al.* **Cardiovascular event rates increase after each recurrence and associate with poor statin adherence.** Eur J Prev Cardiol 2020. http://www.ncbi.nlm.nih.gov/pubmed/?term=33611439

Real world data on lipid management of European ACS patients

How well are lipids managed in European ACS patients? Using an online questionnaire, data of 2775 ACS patients (acute and follow-up patients) from 7 European countries were collected. Lipid measurements were performed in 91% of hospitalized ACS patients. Lipid-lowering drugs were used by 93% of the admitted patients, high-intensity statins in only 63% (at discharge). During the first follow-up visit and LDL-c < 70 mg/dl was observed in 22.4%, and 41% of the patients used the same lipid-lowering prescribed at discharge. At the second follow-up visit, no significant change was observed. In patients with =2 follow-up visits, the percentage of patients who reached an LDL-c goal of <70 mg/dL increased from 9% to 37%. An LDL-c goal of < 100mg/dL was reached by 23% and 72% respectively. Of 2775 admitted ACS patients, 44 (1.6%) were diagnosed with familial hypercholesterolemia (FH); only 499 (18%) of all ACS patients were screened for FH. In this contemporary cohort of very high-risk ACS patients, lipid management remained inadequate in the majority of patients. Efforts to improve Guideline dictated standards of lipid management are urgently warranted.

Landmesser U, Pirillo A, Farnier M *et al.* **Lipid-lowering therapy and low-density lipoprotein cholesterol goal achievement in patients with acute coronary syndromes: The**

ACS patient pathway project. Atherosclerosis. Supplements 2020; 42:e49-e58. http://www.ncbi.nlm.nih.gov/pubmed/?term=33589224

Relevant publications

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2. Zou P, Li H, Cai J *et al.* Statins can benefit patients with primary membranous nephropathy on venous thromboembolism. Ren Fail 2021; 43:302-306. http://www.ncbi.nlm.nih.gov/pubmed/?term=33583321
3. Zemedikun DT, Gokhale K, Chandan JS *et al.* Type 2 diabetes mellitus, glycaemic control, associated therapies and risk of rheumatoid arthritis: a retrospective cohort study. Rheumatology (Oxford) 2021. http://www.ncbi.nlm.nih.gov/pubmed/?term=33590842
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6. Wang D, Wang H, Xu M *et al.* The effect of atorvastatin on recurrence of chronic subdural hematoma after novel YL-1 puncture needle surgery. Clin Neurol Neurosurg 2021; 202:106548. http://www.ncbi.nlm.nih.gov/pubmed/?term=33609954
7. Turongkaravee S, Jittikoon J, Lukkunaprasit T *et al.* A systematic review and meta-analysis of genotype-based and individualized data analysis of SLCO1B1 gene and statin-induced myopathy. Pharmacogenomics J 2021. http://www.ncbi.nlm.nih.gov/pubmed/?term=33608664
8. Terce-o M, Remollo S, Silva Y *et al.* Effect of combined acetylsalicylic acid and statins treatment on intracranial aneurysm rupture. PLoS One 2021; 16:e0247153. http://www.ncbi.nlm.nih.gov/pubmed/?term=33600491
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and meta-analysis. Pharmacological reports : PR 2021:1-12. http://www.ncbi.nlm.nih.gov/pubmed/?term=33608850
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Basic Science publications

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This activity is supported by an educational grant from Viatris.
- P.J. Lansberg