



Update - Week 31, 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

Managing lipids during pregnancy and breastfeeding

Pregnancy and ASCVD seems contradictory, women of childbearing age are not suspected to be at risk for CV complication during their pregnancy or when giving birth. For young women with Familial Hypercholesterolemia the situation is quite different. Reports of young women with a history of ASCVD complications before they became pregnant. In those with homozygous or with severe heterozygous FH this risk should be evaluated and managed. This concise review shares current understanding on the effects of dyslipidemia in pregnancy and the risk associated with very high levels of plasma LDL-cholesterol. Managing lipids during pregnancy and breastfeeding is discussed and suggestions are based on the latest American lipid management guidelines. The authors emphasize the importance of cross-collaboration between cardiologists, lipidologists and gynaecologists/obstetricians to address the complex care of women during this vulnerable period.

Thobani A, Hassen L, Mehta LS, Agarwala A. Management of Hypercholesterolemia in Pregnant Women with Atherosclerotic Cardiovascular Disease. Curr Atheroscler Rep 2021; 23:58. <http://www.ncbi.nlm.nih.gov/pubmed/?term=34345940>

Comparing atorvastatin vs. rosuvastatin in post ACS patients

Atorvastatin and rosuvastatin are both high intensity statins with comparable LDL-c lowering efficacy in the high dosage ranges. Very few studies have compared the two high intensity statins, one RCT (the SATURN trial) showed very similar imaging outcomes. In this retrospective observational study in Qatari ACS patients, rosuvastatin was compared to atorvastatin, 1- and 12-months after hospital discharge. The primary endpoint, a composite of CVD-associated death, non-fatal ACS, and non-fatal stroke, was observed with similar frequencies in both groups; 1.3% vs 1% with an aHR: .64 (0.55-4.94; p=0.379) after 1 month and 4.8% vs 3.5%, with an aHR:1.48 (0.82-2.67, p=0.199) after 12 months. Safety parameters were comparable in both groups with no statistically significant differences. Based on their findings the authors concluded that both atorvastatin and rosuvastatin had comparable safety and efficacy outcomes in post ACS patients.

Rahhal A, Khir F, Orabi B *et al.* A Comparative Study of High-intensity Rosuvastatin Versus Atorvastatin Therapy Post-acute Coronary Syndrome Using Real-world Data. Curr Probl Cardiol 2021:100956. <http://www.ncbi.nlm.nih.gov/pubmed/?term=34363847>

CHD free elderly (>70yrs) carry genetic variants associated with life-long lower LDL-c

Genetic variants associated with life-long lower plasma LDL c reductions can profoundly impact the development of ASCVD complications. In this study, PCSK9 and Apo B genetic variants were analyzed in patients >70years of age with no history of CHD events. Targeted sequencing was done in the 13 131 participants of the ASPirin in Reducing Events in the Elderly trial. 22 different loss of function variants in the PCSK9 and Apo B genes were discovered in 104 participants (1:126 patients). IN patients that carried the rare variants LDL-c was 19.4 mg (14.6%) lower compared to the non-carriers. This was adjusted for statin use. Statins were used by 16% of the carriers vs. 35% of the patients that did not carry the loss of function genetic variants. The PCSK9 R4SL variant was the most frequently observed, and patients with this genotype had on average a 15.5 mg (11.8%) Lower LDL-c in heterozygotes and 25.2 mg/dL (19.2%) in homozygotes (p<0.001). These findings suggest that genetic variants associated with lower plasma LDL-c are more frequently observed in CHD-free elderly individuals and confirm the by Mendelian

randomizations studies suggested protective effects of lifelong lower LDL-c on CHD outcomes.

Lacaze P, Riaz M, Sebra R *et al.* Protective lipid-lowering variants in healthy older individuals without coronary heart disease. *Open heart* 2021; 8.

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Updated meta-analysis of statins use in COVID-19 patients

In this updated meta-analysis and systematic review, the authors examine the effects of statins in clinical outcomes in patients infected with the SARS-CoV-2 virus. All major electronic databases (PubMed, Google Scholar, Scopus, and preprint servers) were queried up to June 3rd, 2021. The primary endpoints used for this meta-analysis were all-cause mortality and a composite endpoint of serious COVID-19 related complications. Included in the final analysis were 35 studies; 32 reported the outcome of all-cause mortality, and 15 reported the composite endpoint of severe COVID-19 illness. Statin use was associated with a significantly reduced risk of dying, HR: 0.70 (0.58-0.84), n= 21 127 and OR:0.63 (0.51-0.79) n=155 097. Serious COVID-19 related complications were observed less frequently in patients using statins vs. patients who were not on statins. OR: 0.80 (0.73-0.88) n=10 081. The authors suggested that their new findings do warrant large well designed clinical trials to investigate the benefits of statins in COVID-19 patients in order to provide the much-needed evidence that could prompt statins to be recommended for the prevention of life-threatening CoV-SARS-2 related complications. Kow CS, Hasan SS. The Association Between the Use of Statins and Clinical Outcomes in Patients with COVID-19: A Systematic Review and Meta-analysis. *Am J Cardiovasc Drugs* 2021:1-15. <http://www.ncbi.nlm.nih.gov/pubmed/?term=34341972>

Predictors of long term clinical outcomes in Hong Kong ischemic stroke patients

Family physicians play a leading role in the secondary prevention of stroke. In this retrospective, study data were collected in two major Hong Kong general outpatient clinics. Patients with a history of ischemic stroke (IS) and ≥ 2 outpatient visits during the recruitment period (1/1 -30/6 2010) were included and followed frequently until 31/12/2018. The primary outcome was a IS, TIA, or hemorrhagic stroke recurrence. The secondary outcomes were mortality and coronary artery disease (CAD). Included were 466 patients (mean age, 71.5 years). Over a median follow-up period of 8.7 years, 158 patients (33.9%) died. Eighty patients (17.2%) had a recurrent stroke, and 57 (12.2%) patients developed CAD. Age was an independent risk factor for recurrences and death. Statin use at

baseline was associated with a significant reduction of recurrent stroke, HR:0.476 (0.285-0.796; P=0.005. After adjusting for death as a competing risk factor, all-cause mortality risk was significantly lower in statin users, HR=0.61 (0.486-0.968, P=0.043). Other important predictors of survival were female sex, antiplatelet use, and higher diastolic blood pressure at baseline.

Han J, Choi YK, Leung WK *et al.* Long term clinical outcomes of patients with ischemic stroke in primary care - a 9-year retrospective study. BMC family practice 2021; 22:164. <http://www.ncbi.nlm.nih.gov/pubmed/?term=34364364>

Relevant publications

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2. Yuan Y, Wang W, Shang X *et al.* Association between statin use and the risks of glaucoma in Australia: a 10-year cohort study. Br J Ophthalmol 2021. <http://www.ncbi.nlm.nih.gov/pubmed/?term=34348924>
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Basic Science publications

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