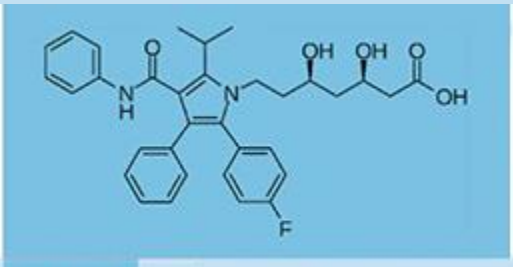
IAS STATIN NEWSLETTER



INTERNATIONAL ATHEROSCLEROSIS SOCIETY

A CURATED WEEKLY UPDATE OF ALL STATIN PUBLICATIONS

Update - Week 28, 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

The AHA COVID-19 CVD registry confirms mortality benefits of statins in CVD patients

The American Heart Association has set up the COVID-19 cardiovascular disease (CVD) Registry to evaluate the associations between statin use and outcomes. In this report, data collected in 104 US hospitals up to September 2020 was evaluated. In total, 10 541 COVID-19 patients were admitted with severe COVID-19 related complications. Prior to admission, statins were used by 4 449 (42%) of the patients. Only statins were used by 7%, and 35% used statins and anti-hypertensive drugs. Death or discharge to hospice was observed in 2 212 (21%) of the admitted patients. Patients who used statins with or without anti-hypertensive medication were shown to have a better chance of survival; death OR: 0.59 (0.50-0.69). This was after adjustments for demographic characteristics, insurance status, hospital site, and concurrent medications by logistic regression. A second analysis was based on propensity score matching. Statin use with or without anti-hypertensive medication was associated with a reduced mortality risk only in those with a history of CVD

or hypertension, OR: 0.68 (0.58-0.81). In patients without CVD or hypertension, mortality risk was reduced by 16%, but this difference was not statistically significant. The findings in this US registry support the use and initiation of statins prior to hospital admission in patients with CVD and or hypertension if indicated for underlying conditions.

Daniels LB, Ren J, Kumar K *et al.* Relation of prior statin and anti-hypertensive use to severity of disease among patients hospitalized with COVID-19: Findings from the American Heart Association's COVID-19 Cardiovascular Disease Registry. PLoS One 2021; 16:e0254635. http://www.ncbi.nlm.nih.gov/pubmed/?term=34264974

Managing dyslipidemia in patients with renal disease – Review

The global burden of chronic kidney disease (CKD) is growing at a rapid pace. CKD contributes to a great extent to CVD morbidity and mortality. Characteristic dyslipidemia in CKD patients consists of increased triglycerides, low HDL-c high LDL-c, and increased Lp(a). This comprehensive review gives a detailed overview of CKD-associated dyslipidemia, the metabolic background, the impact of different types and stages of renal disease, as well as reviewing current data on drugs that can be used to manage renal associated dyslipidemia. Novel lipid-lowering drugs targeting triglycerides, Lp(a), and more potent LDL-c lowering non-statin drugs are also discussed. In very advanced renal disease or when patients need dialysis, the most commonly used lipid-lowering drugs, statins, have shown no benefits. However, statins should be initiated in patients at any stage of CKD, except for dialysis, based on current evidence and guidelines. An alternative ASCVD pooled cohort risk equation has been developed that includes eGFR and microalbuminuria to aid clinicians when discussing statin initiation with patients. The authors provide strong and convincing arguments to initiate statins or alternative lipid-lowering drugs early in patients who develop CKD.

Thobani A, Jacobson TA. Dyslipidemia in Patients with Kidney Disease. Cardiol Clin 2021; 39:353-363. http://www.ncbi.nlm.nih.gov/pubmed/?term=34247749

Should we used clinical pharmacists to ensure guideline-based statin prescription?

Optimal lipid management in patients at risk for ASCVD complications needs to improve. Numerous registries and observational studies have repeatedly shown that larger numbers of patients are not reaching their guideline dictated LDL-c targets and failed to adhere to their prescribed medication. Different approaches are needed to address this challenge, and using clinical pharmacists is an attractive option. In this study, clinical pharmacists to improve the use of high or medium intensity statins in secondary prevention patients. Based on the US Medicare, Medicaid services criteria, 84 patients were identified for review and outreach. Out of these patients, 35 were eligible for statin therapy and contacted by

telephone; 22 (72,7%) patients agreed to start with statins, and 16 (45.7%) patients picked up their prescriptions within 10 days. An additional 4 of the 35 patients were eventually prescribed a statin; in total, 20 out of 35 (57.1%) of the patients started to use statins. The mean time spend per patient in this outreach program was 27.7 (+9 minutes) minutes. This pilot telephone-based outreach program shows that clinical pharmacists can have an active and successful role in ensuring that high CVD risk patients have access to appropriate statin therapy, with relatively minimal effort.

Cornelison P, Marrs JC, Anderson SL. Clinical Pharmacist Outreach to Increase Statin Use for Patients with Cardiovascular Disease in a Safety-Net Healthcare System. American health & drug benefits 2021; 14:63-69. http://www.ncbi.nlm.nih.gov/pubmed/?term=34267861

Meta-analysis evaluating the harms of statins in primary prevention

The benefits of statins to reduce ASCVD risk both in secondary and primary prevention have been firmly established. For secondary prevention, the benefits outweigh the harmful adverse events. In a primary prevention setting, this has been a controversial issue where claims that the benefits are insufficient compared to the harms and initiating patients on statins should not be done unless the patient is considered to have a substantially elevated CVD risk. This systematic review and meta-analysis aimed to evaluate the reported harms of statin in primary prevention randomized controlled studies. Primary outcomes were self-reported muscle symptoms, clinically confirmed muscle disorders, liver dysfunction, renal insufficiency, diabetes, and eye conditions. Secondary outcomes included myocardial infarction, stroke, and death from cardiovascular disease as measures of efficacy. In total, 62 trials (N=120 456) were included. The average follow-up time was 3.9 years. Statin used was associated with an increased risk of self-reported muscle symptoms (21 trials) OR: 1.06 (1.01 to 1.13). The absolute risk difference for statin uses was 15 (1 to 29). For liver dysfunction (21 trials), OR: 1.33 (1/12-1.58); difference absolute risk difference 8 (3 to 14). For renal insufficiency (8 trials),OR:1.14 (1.01 to 1.28); absolute risk difference 12 (1 to 24)), and eye conditions (6 trials), OR:1.23 (1.04 to 1.47); absolute risk difference 14 (2 to 29). Statins were not associated with clinically confirmed muscle disorders or diabetes. All individual statins, atorvastatin, lovastatin, and rosuvastatin, were associated with some adverse events, but few significant differences were found between types of statins. An Emax dose-response relationship was identified for the effect of atorvastatin on liver dysfunction, but the dose-response relationships for the other statins and adverse effects were inconclusive. The risk for adverse events associated with statin therapy was low and did not outweigh their CVD benefits. Tailoring the type or dosage of statins for safety reasons before initiating stating therapy in primary prevention is not supported by the data collected in this meta-analysis.

Cai T, Abel L, Langford O *et al.* Associations between statins and adverse events in primary

prevention of cardiovascular disease: systematic review with pairwise, network, and dose-response meta-analyses. Bmj 2021; 374:n1537.
http://www.ncbi.nlm.nih.gov/pubmed/?term=34261627

Atorvastatin first choice to reduce CSDH volume

Management of chronic subdural hematoma (CSDH) aims to reduce the risk of surgery for recurrence, reduce hematoma volume and improve recovery. This meta-analysis evaluated the effects of different pharmacological regimens. In total, 12 trials (N= 2098) were included in the analysis. The risk for recurrence surgery was reduced both by dexamethasone and atorvastatin, RR: 0.38 (0.22-0.630 and RR: 0.45 (0.24-0.81). Atorvastatin was seen as the most effective drug to reduce hematoma volume, MD: -7.44 (-9.49 to -5.43) compared to placebo and MD:-14.09 (-23,35 to -4.82) compared to goreisan. Tranexamic acid was superior to goreisan, MD: 12.07 (-21.86 to -2.29). No differences for good recovery were discernible for the evaluated treatments compared to placebo. Noteworthy is the increased mortality observed with dexamethasone, RR: 1.96 (1.20-3.38). Based on findings in this meta-analysis, dexamethasone was the most effective drug to reduce the risk for recurrence surgery; however, the risk for side effects and increased mortality requires careful attention. For reduction of hematoma, volume atorvastatin was considered the most effective drug. Wang X, Song J, He Q, You C. Pharmacological Treatment in the Management of Chronic Subdural Hematoma. Frontiers in aging neuroscience 2021; 13:684501.
http://www.ncbi.nlm.nih.gov/pubmed/?term=34276343

Relevant publications

1. Yu AS, Liang B, Yang ST *et al.* Statin use and survival among ESKD patients hospitalized with sepsis. Clinical kidney journal 2021; 14:1710-1712.
   http://www.ncbi.nlm.nih.gov/pubmed/?term=34276978
2. Yetmar ZA, Chesdachai S, Kashour T *et al.* Prior Statin Use and Risk of Mortality and Severe Disease From Coronavirus Disease 2019: A Systematic Review and Meta-analysis. Open Forum Infect Dis 2021; 8:ofab284.
   http://www.ncbi.nlm.nih.gov/pubmed/?term=34258316
3. Wu H, Sharaf M, Shalansky K, Zalunardo N. Evaluation of Statin Use and Prescribing in Patients with Chronic Kidney Disease Not Receiving Treatment with Kidney Transplant or Dialysis. The Canadian journal of hospital pharmacy 2021; 74:219-226. http://www.ncbi.nlm.nih.gov/pubmed/?term=34248162
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   http://www.ncbi.nlm.nih.gov/pubmed/?term=34265321

5. Vogt NM, Hunt JFV, Ma Y *et al.* Effects of simvastatin on white matter integrity in healthy middle-aged adults. Annals of clinical and translational neurology 2021; 8:1656-1667. http://www.ncbi.nlm.nih.gov/pubmed/?term=34275209
6. Tunbridge MJ, Jardine AG. Atherosclerotic Vascular Disease Associated with Chronic Kidney Disease. Cardiol Clin 2021; 39:403-414. http://www.ncbi.nlm.nih.gov/pubmed/?term=34247753
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8. Patel J, Pallazola VA, Dudum R *et al.* Assessment of Coronary Artery Calcium Scoring to Guide Statin Therapy Allocation According to Risk-Enhancing Factors: The Multi-Ethnic Study of Atherosclerosis. JAMA cardiology 2021. http://www.ncbi.nlm.nih.gov/pubmed/?term=34259820
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10. Yetmar ZA, Chesdachai S, Kashour T *et al.* Prior Statin Use and Risk of Mortality and Severe Disease From Coronavirus Disease 2019: A Systematic Review and Meta-analysis. Open Forum Infect Dis 2021; 8:ofab284. http://www.ncbi.nlm.nih.gov/pubmed/?term=34258316
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14. Moctezuma-Velazquez C, Abraldes JG. Statins and Liver Cancer in Cirrhosis: The Most Relevant Questions Are Still Unanswered. Am J Gastroenterol 2021. http://www.ncbi.nlm.nih.gov/pubmed/?term=34279010
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Basic Science publications

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Materials. Materials (Basel, Switzerland) 2021; 14. http://www.ncbi.nlm.nih.gov/pubmed/?term=34279277

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