





A CURATED WEEKLY OVERVIEW OF ALL STATIN PUBLICATIONS

Update week 05 & 06 - 2023

Dr. Peter Lansberg is a Dutch lipidologist, educator and innovator. He has been instrumental in setting up The Dutch National Lipid Clinic Network, the Dutch Lipid Clinic Criteria for Familial Hypercholesterolemia (FH), and the Dutch National FH screening program

The Statin Newsletter will keep you up-to-date with all recent statin <u>publications</u>. Based on a curated approach to select relevant articles.

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Key Publications

- 1. combining statin plus DAPT post ischemic stroke
- 2. Fenofibrate + statin benefits in diabetic patients with retinopathy
- 3. Statins in ACS patients with impaired renal function and
- 4. Polypill and cognitive -functional outcomes
- 5. Lack of statins post ischemic stroke patients

DAPT + rosuvastatin post ischemic stroke

This study aimed to investigate the safety and efficacy of short-term (7-day) Dual Antiplatelet Therapy (DAPT) combined with intensive rosuvastatin in patients with Acute Ischemic Stroke (AIS). The study enrolled patients with AIS and divided them into two groups: the control group received Single Antiplatelet Therapy (SAPT) plus rosuvastatin, while the study group received 7-day DAPT plus intensive rosuvastatin. The study found that short-term DAPT combined with intensive rosuvastatin was effective in reducing clinical symptoms and significantly reduced the risk of recurrent stroke in patients with mild-to-moderate AIS within 90 days, without increasing bleeding events, Statin-Induced Liver Injury (SILI), or Statin-Associated Myopathy (SAM). The study used generalized linear models to compare National Institute of Health Stroke Scale (NIHSS) scores between the two groups during the 21-day treatment and found that NIHSS scores in the study group decreased significantly compared to the control group. Cox regression models were used to compare recurrent ischemic stroke, bleeding events, SILI, and SAM between the two groups during the 90-day follow-up period. The results showed that the therapy of the study group reduced the risk of recurrent stroke by 65% compared to the control group, without increasing bleeding events, SILI, or SAM. No cases of SILI or SAM were found in either group. The study suggests that short-term DAPT combined with intensive rosuvastatin is an

ideal regimen for patients with mild-to-moderate AIS. The study attributed the efficacy of DAPT to its strong inhibition of platelet aggregation and thrombosis reduction, while the efficacy of rosuvastatin was attributed to its pleiotropic effects, including reducing endogenous cholesterol synthesis, improving endothelial function, and antioxidant and antithrombotic effects. The study also limited the therapy regimen to a 7-day course of DAPT to avoid bleeding events. Overall, the study suggests that short-term DAPT combined with intensive rosuvastatin is a promising therapy regimen for patients with mild-to-moderate AIS.

Safety and efficacy of short-term dual antiplatelet therapy combined with intensive rosuvastatin in acute ischemic stroke. <u>Clinics (Sao Paulo, Brazil)</u> 2023; 78:100171Deng T, He W, Yao X *et al.* http://www.ncbi.nlm.nih.gov/pubmed/?term=36738644

Statins + fenofibrate reduce retinopathy risk in diabetics

This propensity-matched cohort study aimed to investigate the association between the addition of fenofibrate to statin therapy and diabetic retinopathy progression in patients with type 2 diabetes and metabolic syndrome. Patients receiving statin therapy were matched 1:2 by propensity score into the statin plus fenofibrate group and the statin-only group. The primary outcome was a composite of diabetic retinopathy progression including vitreous hemorrhage, vitrectomy, laser photocoagulation, intravitreous injection therapy, and retinal detachment. The study found that the risk of diabetic retinopathy progression was significantly lower in the statin-plus-fenofibrate group than in the statin-only group, with benefits observed primarily among patients with pre-existing retinopathy. The statin plus fenofibrate group exhibited significantly lower risks of vitreous hemorrhage, laser photocoagulation, and intravitreous injection therapy than the statin-only group. However, the magnitude of fibrate-mediated benefits was numerically lower than that observed in previous randomized controlled trials, possibly due to differences in study design and patient characteristics. The study suggests that fenofibrate therapy may be a beneficial treatment option for preventing diabetic retinopathy progression in patients with type 2 diabetes and metabolic syndrome receiving statin therapy, especially among those with preexisting retinopathy. However, the study has limitations, including its retrospective design, lack of retinal imaging data, and potential for confounding variables. Further research is needed to validate the direct effect of fenofibrate on diabetic retinopathy and to clarify the conditions under which it may be most beneficial.

Addition of fenofibrate to statins is associated with risk reduction of diabetic retinopathy progression in patients with type 2 diabetes and metabolic syndrome: A propensity-matched cohort study. Diabetes Metab 2023; 49:101428Kim NH, Choi J, Kim YH et al. http://www.ncbi.nlm.nih.gov/pubmed/?term=36720383

ACS patients with impaired renal function and statin benefits

This study aimed to assess the optimal statin therapy intensity and its effect on long-term outcomes in patients with acute myocardial infarction (AMI) and impaired kidney function (IKF). Using data from over 8,000 patients who were prescribed statins after their first AMI in Sweden, this study evaluated the discontinuation during the first year after AMI and the long-term outcomes in patients receiving high versus low-moderate intensity statin treatment in relation to kidney function. The results showed that high-intensity statin treatment was associated with a lower risk of major adverse cardiovascular events (MACE), cardiovascular death, and all-cause mortality in patients with IKF. However, a significant number of patients discontinued statin therapy within the first year of treatment, which increased the risk of adverse outcomes. The study emphasized the importance of optimizing statin therapy in patients with AMI and IKF to improve long-term outcomes. Moreover, the findings provided useful insights for clinicians to manage patients with AMI and IKF, particularly in selecting the optimal intensity of statin therapy and promoting medication adherence to improve long-term outcomes.

Statin treatment intensity, discontinuation and long-term outcome in patients with acute myocardial infarction and impaired kidney function. <u>Journal of cardiovascular pharmacology</u> 2023; Khedri M, Szummer K, Lundman P *et al.* http://www.ncbi.nlm.nih.gov/pubmed/?term=36735336

Polypill effects on cognitive and functional outcomes

The International Polycap Study 3 (TIPS-3) investigated whether a polypill, aspirin, or a combination of both could reduce cognitive and functional decline in individuals with risk factors but no manifest cardiovascular disease. A total of 5713 individuals were randomly assigned to treatment groups, and 2098 people over 65 years old completed cognitive and functional assessments and were included in the analyses. During a five-year follow-up, the polypill, with or without aspirin, was not associated with reduced cognitive outcomes but was associated with reduced functional decline. The study concluded that simultaneous reductions in multiple vascular risk factors, such as the use of a polypill, might reduce cognitive decline. However, reduction in blood pressure and LDL-C by use of a polypill and/or aspirin in those over 65 years old in the TIPS-3 trial did not demonstrate a protective effect on cognitive decline compared with placebo. These interventions were associated with reduced functional decline during five years of follow-up. Larger studies with longer follow-up may be warranted to detect small changes in cognition that may still be relevant at a population level. Use of functional assessments may be a more sensitive outcome measure in international studies.

Effects of a Polypill, Aspirin, and the Combination of Both on Cognitive and Functional Outcomes: A Randomized Clinical Trial. <u>JAMA neurology_2023</u>; Bosch JJ, O'Donnell MJ, Gao P *et al.* http://www.ncbi.nlm.nih.gov/pubmed/?term=36716007

Real World evidence on lack of statin use in post stroke patients

This population-based study investigated the long-term impact of lack of statin therapy after ischemic stroke (IS) on adverse outcomes. Data from 59,588 IS patients admitted to 20 Finnish hospitals were combined from national registries on hospital admissions, mortality, cancer diagnoses, prescription medication purchases, and permissions for special reimbursements for medications. The study found that 27.1% of patients did not use statins within 90 days after discharge, with women and older patients using statins less frequently. Lack of statin therapy early after IS was associated with increased probability of all-cause death, cardiovascular death, and ischemic events. Additionally, the risk of death and major adverse cerebrovascular or cardiovascular events were increased in patients not using early statin without a clinical history of atherosclerotic cardiovascular disease. The risk of hemorrhagic stroke did not differ between statin users and nonusers.

These results indicate that use of statins might be beneficial in all IS patients regardless of IS subtype and underline the importance of measures to improve timely statin use after IS. The study highlights the poor adherence to statin treatment after IS, which remains a challenge for healthcare providers. Although overall adherence to statins seems relatively poor, the proportion of patients who did not use statins early after IS declined over time. The study has several strengths and limitations, including nationwide coverage of the population, full coverage of confounders, and lack of detailed clinical information.

Nevertheless, the study suggests that measures to improve timely statin use after IS are needed to reduce the risk of adverse long-term outcomes.

Lack of Statin Therapy and Outcomes After Ischemic Stroke: A Population-Based Study. Stroke 2023; Åivo J, Ruuskanen JO, Tornio A et al. http://www.ncbi.nlm.nih.gov/pubmed/?term=36748465

Relevant Publications

- Atorvastatin hypersensitivity reaction within 24 hours of first dose. <u>The American journal of emergency medicine</u> 2023; Pop M, Hayes C, Coggin T. http://www.ncbi.nlm.nih.gov/pubmed/?term=36774275
- Statin Use and Delirium Risk: An Updated Systematic Review and Meta-Analysis.
 <u>American journal of therapeutics</u> 2023; Chang YH, Wang JY, Peng TR et al.
 http://www.ncbi.nlm.nih.gov/pubmed/?term=36728521

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 Risk Perception and Lipid Goals? A Simulated Analysis of Real-life Data from
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- When economy meets physiopathology: A novel cost-effectiveness model finally considers the cumulative effect of LDL cholesterol burden. <u>Atherosclerosis</u> 2023; 367:34-36Carvalho LSF, Stephanus AD, Pfitzner MS. http://www.ncbi.nlm.nih.gov/pubmed/?term=36725420
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Basic Science

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