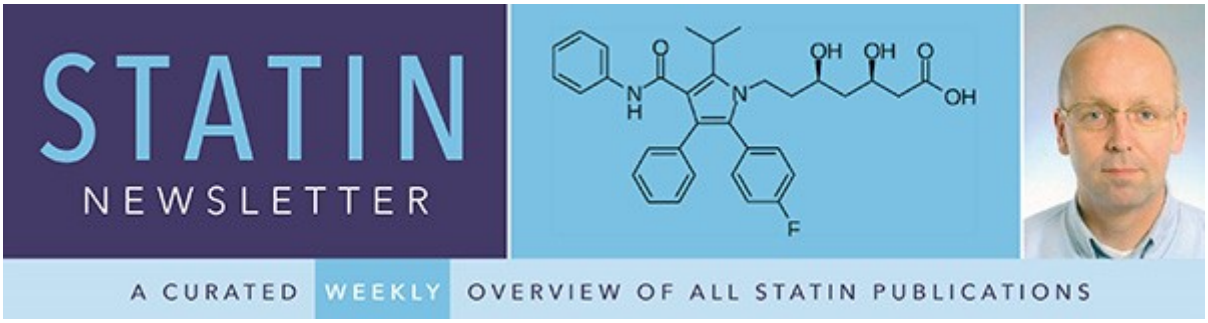

Update week 43 & 44 - 2022

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

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

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Key Publications

1. **Anti-inflammatory effect of statins in CKD patients - Meta-analysis**
2. **Beyond statins - a review**
3. **Is Coronary Artery Calcium Scoring the new standard in preventive care?**
4. **Can we afford current therapies for maximal LDL- c lowering?**
5. **Is the country we live an important factor when aiming to reduce ASCVD risk?**

Meta-analysis confirms the anti-inflammatory effects of statins

A meta-analysis of 25 randomized controlled trials with 7,921 participants has shown that statin therapy is associated with a decreased C-reactive protein (CRP) level (-2.06 mg/L; 95% CI: -2.85 to -1.27, p < 0:01) in patients with chronic kidney disease (CKD). Subgroup, sensitivity, and trim-and-fill analyses showed that the pooled results of CRP were stable. CRP is a marker of inflammation in CKD, and chronic inflammation is strongly associated with complications and progression of CKD. Statins are widely used in CKD and have shown many beneficial effects, including reducing inflammation and improving survival. The present study suggests that statins have anti-inflammatory effects in CKD and may be useful in improving complications, reducing mortality, and slowing the progression of CKD. Further research is needed to determine whether statins can be prescribed for the purpose of inhibiting inflammation in CKD.

Wang J, Chen Z, Qiu Y *et al.* Statins Have an Anti-Inflammation in CKD Patients: A Meta-Analysis of Randomized Trials. BioMed research international 2022; 2022:4842699. http://www.ncbi.nlm.nih.gov/pubmed/?term=36317110

Review on current lipid lowering options beyond statins

Hypercholesterolemia is a significant contributor to cardiovascular disease, which is the

leading cause of death worldwide. Statins are the most commonly prescribed drugs to lower cholesterol levels, but they are not effective or tolerated by all patients. Non-statin therapies, such as ezetimibe and PCSK9 monoclonal antibodies, have been developed in recent years as alternatives for these patients. However, a personalized approach is required to ensure that patients are receiving the most suitable treatment for their individual needs and to maximize adherence. Newer therapies are also being researched, including CETP inhibitors, lipoprotein(a)-lowering drugs, LDL apheresis, and gene therapy.
Danilov A, Frishman WH, Aronow WS. **Antihyperlipidemic Treatment Options in Statin Resistance and Intolerance.** Cardiology in review 2022. http://www.ncbi.nlm.nih.gov/pubmed/?term=36305712

Review on coronary artery calcium scoring

Coronary artery calcium (CAC) scoring is a reliable predictor of atherosclerotic cardiovascular disease (ASCVD) and a useful tool for guiding clinical decision-making for primary prevention in asymptomatic patients of all ages, genders, and racial groups. It has already been incorporated into clinical guidelines and is being integrated into standard clinical practice, and is expected to decrease healthcare spending and improve ASCVD outcomes. CAC testing offers a targeted approach to addressing the increasing burden of ASCVD on healthcare systems and society, and the measurement of CAC provides an additional layer of precision for preventative management. Future investigation into the impact of CAC scoring on ASCVD outcomes will further support its standardization as a valuable tool for preventative care.
Beverly J, Budoff MJ. **Use of Coronary Computed Tomography for Calcium Screening of Atherosclerosis.** Heart Int 2020; 14:76-79. http://www.ncbi.nlm.nih.gov/pubmed/?term=36276503

Were we live impacts CVD risk! SHARP study re-analysis

This study analyzed the survival and causes of death in participants enrolled in the Study of Heart and Renal Protection (SHARP), a randomized controlled trial, from Australia, Malaysia, and New Zealand. The SHARP trial compared the combination therapy of simvastatin and ezetimibe to placebo in patients with moderate to severe chronic kidney disease. The study included 1136 participants who were alive and eligible for extended follow-up at the end of SHARP, and data on significant medical events, hospital admissions, and requirement for kidney replacement therapy was collected. The primary outcome was all-cause mortality compared across the three countries. Results showed that the risk of death was higher for participants in Malaysia and New Zealand compared to Australia, and this variation was not explained by adjustment for kidney transplantation as a competing risk. This study highlights the differences in long-term mortality risk among participants from different countries and the feasibility and value of extended follow-up of participants in clinical trials.
Talbot B, Cass A, Walker R *et al.* **Comparing survival in patients with chronic kidney disease across three countries - Results from the study of heart and renal protection-extended review.** Nephrology (Carlton) 2023; 28:36-43. http://www.ncbi.nlm.nih.gov/pubmed/?term=36309984

The price of maximal LDL-c management – can we afford it?

This study found that a large proportion of cardiovascular high- and very-high-risk patients can reach recommended LDL-C targets with a stepwise approach of statins, ezetimibe, and bempedoic acid. The strategy of adding bempedoic acid before PCSK9i treatment significantly reduces drug costs and costs per prevented cardiovascular event, but prevents fewer events compared to a strategy of using PCSK9i treatment alone. The low rate of LDL-C target achievement in the observation period highlights the need for optimization of lipid-lowering strategies. In the simulation model, the addition of ezetimibe increased the proportion of patients with controlled LDL-C to 33%, and the addition of bempedoic acid further increased it to 62%. Two thirds of the population would require PCSK9i treatment on top of statin and ezetimibe treatment to achieve LDL-C goals. In the context CVD prevalence and incidence, the costs for adding PCSK9i as a standard add-on treatment regimen will have unprecedented impact on overall healthcare costs, making, not only efficacy, safety, cost-effectiveness but affordability an important key metric, even in high income countries.

Drug costs of bempedoic acid per 1 million patients/year (€) 278,791,304. Drug costs PCSK9i per 1 million patients/year (€) 2,167,299,455. Drug cost combined (€) 2,446,090,759.
Katzmann JL, Becker C, Bilitou A, Laufs U. **Simulation study on LDL cholesterol target attainment, treatment costs, and ASCVD events with bempedoic acid in patients at high and very-high cardiovascular risk.** PLoS One 2022; 17:e0276898. http://www.ncbi.nlm.nih.gov/pubmed/?term=36301892

Relevant Publications

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Basic Science

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