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Adipose tissue content of alpha-linolenic acid and the risk of ischemic stroke - A danish case-cohort study

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ing taken by 25.7% of patients with an indication; 47.3% of patients with MI or coronary revascularization were taking a statin compared with 40.4%, 33.8% and 18.9% with diabetes, LDL-C ≥190mg/dL and 10-year CVD risk ≥7.5% respectively (Table 1). In multivariable analysis and compared with patients with history of MI or coronary revascularization, those with diabetes, LDL-C ≥190 mg/dL, and 10-year CVD risk ≥7.5% were less likely to be taking a statin (prevalence ratio [95% confidence interval] 0.68 [0.58–0.79], 0.71 [0.50–1.01], and 0.39 [0.34–0.46], respectively). Among patients who had ever taken a statin, 27.7% had discontinued treatment before 2013: 23.6% with history of MI or coronary revascularization, 27.7% with diabetes, 30.9% with LDL-C ≥190 mg/dL and 27.9% of those with 10-year CVD risk ≥7.5%.

Statin use by CVD risk group

CVD risk group	Percentage of population	Percentage taking statins	PR for statin use (95% CI)
MI or coronary revascularization	2.4%	47.3%	1 (ref)
Diabetes	6.1%	40.4%	0.68 (0.58–0.79)
LDL-C ≥190 mg/dL	0.8%	33.8%	0.71 (0.50–1.01)
CVD risk ≥7.5%	21.9%	18.9%	0.39 (0.34–0.46)

PRs adjusted for age, sex, race, body mass index, glomerular filtration rate, protease inhibitors or cobicistat, CD4, plasma HIV-1 RNA, other lipid lowering therapy, and site.

Conclusions: A majority of HIV-infected patients with an indication for a statin were not taking this medication, partially resulting from a high rate of treatment discontinuation.

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Eligibility for PCSK9 inhibitors according to ESC/EAS and ACC recommendations after acute coronary syndromes

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Background: PCSK9 inhibitors have emerged as a promising treatment option for management of dyslipidemia. The European Society of Cardiology/European Atherosclerosis Society (ESC/EAS) and the American College of Cardiology (ACC) have issued recommendations regarding the use of PCSK9 inhibitors in selected patients. Treatment eligibility rates according to these recommendations in real-world clinical practice remain unknown.
Purpose: To assess in a contemporary, real-world setting the eligibility for PCSK9 inhibitors after acute coronary syndromes (ACS) according to ESC/EAS vs. ACC recommendations.
Methods: We analysed a prospective Swiss cohort of 2,023 patients hospitalized for ACS between 2009 and 2014. Patients received optimal secondary prevention treatment. One year after enrollment, eligibility for PCSK9 inhibitor treatment was defined according to the ESC/EAS vs. ACC criteria on the basis of on-treatment levels of low-density lipoprotein cholesterol (LDL-C); achieved reduction in LDL-C; and high-risk clinical characteristics (rapid disease progression or comorbidities). Familial hypercholesterolemia (FH) was defined using the Dutch Lipid Clinic Network criteria. Because treatment with ezetimibe on top of maximally tolerated statin is included in both the ESC/EAS and ACC eligibility algorithms, we modelled a fixed relative reduction of 24% in LDL-C levels at one year in all patients not treated with ezetimibe.
Results: At one year, 94.3% of patients were treated with statin (55.3% with high-intensity statin) and 5.8% with ezetimibe. Mean LDL-C levels were 2.19±0.86 mmol/l at one year, and 35.8% of patients had LDL-C levels <1.8 mmol/l. After simulating the LDL-C-lowering effect of ezetimibe, the proportion of patients who would be eligible for PCSK9 inhibitor treatment at one year was 2.7% according to ESC/EAS criteria vs. 13.4% based on ACC criteria. Respective rates without modelling the ezetimibe effect would be 10.6% vs. 31.4%. In multivariable analysis, predictors of treatment eligibility with PCSK9 inhibitors included probable/definite FH (OR 3.38, 95% CI 1.70–6.72 for ESC/EAC criteria and 3.99, 95% CI 2.82–5.64 for ACC criteria; p<0.001) and non-attendance to a cardiac rehabilitation program after hospital discharge (OR 0.31, 95% CI 0.16–0.60 for ESC/EAS criteria and OR 0.48, 95% CI 0.34–0.66 for ACC criteria; p<0.001).
Conclusions: In this sizable cohort of ACS patients receiving contemporary secondary-prevention treatment for one year, recommendations made by the ACC would lead to five times higher eligibility rates for PCSK9 inhibitor treatment compared with the ESC/EAS statement. Eligibility rates would increase substantially without the incremental LDL-C-lowering effect by ezetimibe. Coupled with findings of large outcomes trials, these observations may have implications for guiding clinical decision-making and enhancing cost-effectiveness analyses with regard to rational use of PCSK9 inhibitors.

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### Adipose tissue content of alpha-linolenic acid and the risk of ischemic stroke - A danish case-cohort study

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Introduction: The plant-derived omega-3 fatty acid alpha-linolenic acid (ALA) has been associated with potential anti-atherosclerotic properties and has been suggested as a major explanation behind the beneficial effect of the Mediterranean diet in the prevention of coronary heart disease. However, limited evidence exists whether ALA is associated with a lower risk of ischemic stroke.
Purpose: The objective was to investigate the association between adipose tissue content of ALA as an objective long-term biomarker of intake of ALA and the risk of ischemic stroke.
Methods: A total of 57,053 participants aged 50–64 years of age were enrolled between 1993–97 into the Danish Diet, Cancer and Health Cohort. Potential cases were identified through the nationwide Danish National Patient Register and subsequently validated. Baseline adipose tissue content of ALA was determined with the use of gas chromatography in all incident cases and in a random sex-stratified sample of the total cohort (n=3500). Statistical analyses were performed using sex-stratified weighed Cox proportional hazard regression adjusted for established ischemic stroke risk factors. ALA was included as a continuous and a categorical variable, respectively.
Results: During a median of 13.5 years of follow up, we identified 1894 cases of ischemic stroke. After appropriate exclusions, we had 1735 cases for analysis. Multivariate analyses that were conducted using restricted cubic splines and adjustment for established ischemic stroke risk factors showed a U-shaped association between adipose tissue content of ALA and the risk of ischemic stroke, but this association was not statistically significant (Figure). In analyses of adipose tissue content of ALA expressed in quintiles, the hazard ratios in the second (0.95; 95% CI: 0.78, 1.16), third (0.86; 95% CI: 0.70, 1.06), fourth (0.93 95% CI: 0.76, 1.14) and fifth quintile (1.01 95% CI: 0.82, 1.23) also revealed a U-shaped association, but the hazard ratios were not statistically significant.
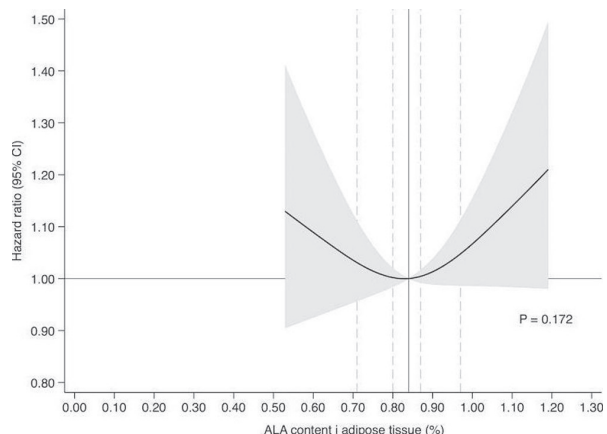
Conclusion: We observed a U-shaped association between adipose tissue content of ALA and the risk of ischemic stroke, but the association was not statistically significant.

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Low density lipoprotein cholesterol levels at first follow-up after acute myocardial infarction predicts recurrent atherosclerotic cardiovascular disease events poorly

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Background: Low density lipoprotein cholesterol (LDL-C) lowering with high dose statin therapy is a cornerstone in secondary prevention post-myocardial infarction (MI) with a treatment goal of <1.8 mmol/L. LDL-C is an established risk factor for atherosclerotic cardiovascular disease (ASCVD) in the general population, but the significance of LDL-C for ASCVD risk in post-MI patients remains unclear and the current LDL-C goal for treatment is based on circumstantial evidence.