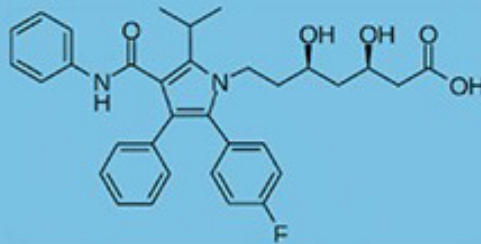


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**IAS STATIN**  
NEWSLETTER



 INTERNATIONAL  
ATHEROSCLEROSIS  
SOCIETY

A CURATED WEEKLY UPDATE OF ALL STATIN PUBLICATIONS

Update - Week 07 & 08, 2022



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

### Impact of low baseline LDL-c in CAD patients with or without statins on MACE

What is the impact of a baseline LDL-cholesterol  $<1.8$  mmol/L ( $7 < 0$  mg/dL) on subsequent major adverse cardiac and cerebral events (MACCE) when comparing patients that used statins to reach this level vs. patients with a naïve low LDL-c? 11 137 patients were admitted for coronary angiography in a large Beijing cardiac center between January 2013 and September 2019. Of these patients, 9339 were diagnosed with obstructive coronary artery disease (OCAD), and ultimately, 133 patients fit the inclusion criteria for this retrospective observational study. Patients with a low baseline LDL-c were subsequently grouped by having a statin prior to admission or not. Events were recorded during hospitalization and 25-months follow-up. Using a multivariable Cox regression statistical analysis, Statin users had a significantly lower risk for the composite MACCE, all-cause death, and cardiovascular death. After multivariable adjustment, non-prior statin therapy was independently associated with all-cause death HR: 2.09 (1.13-3.87,  $P = 0.019$ ) and cardiovascular death, HR: 2.28, (1.04-5.00,  $P = 0.04$ ). Benefits were pronounced in the subgroups aged  $\geq 65$  years and with hypertension. Although corrected for several variables, the study's observational design is prone to unknown confounding factors.

Zhang Y, Zhao X, Ding X *et al.* Association of Prior Statin Therapy With Cardiovascular Outcomes in Patients With Initial Diagnosis of OCAD and LDL-C Below

1.8 mmol/L. [Angiology\\_2022:33197221075861. http://www.ncbi.nlm.nih.gov/pubmed/?term=35191328](http://www.ncbi.nlm.nih.gov/pubmed/?term=35191328)

## Both “Lower” and “Longer” are important to for optimal LDL-c management

The Korean National Health Insurance Cohort (2007-2014) has evolved into an valuable source of clinical data for retrospective observational research. In this study, Korean patients with type-2 diabetes (DM2) were evaluated for MACE (ischemic heart disease, ischemic stroke, and cardiovascular death); comparing statin intensity, achieved LDL-c and statin therapy duration. Patients using moderate – high-intensity statins did better than patients treated with low-intensity statins, HR: 0.72 (P=0.027). Reaching lower LDL-c was also associated with improved outcomes. Notably, the duration of statin therapy was the most potent predictor of MACE. Patients using statins for  $\geq 18$  months compared to 3-6 months resulted in a MACE HR:0.70 (P=0.009). The proportion of explainable log-likelihood for MACE was most significant for statin duration (2.55), followed by achieved LDL-C level (2.18) and statin intensity (0.95). The findings of this analysis re-affirm the concepts of “lower is better” but even more so “longer is better.” Kim JY, Choi J, Kim SG, Kim NH. Relative contributions of statin intensity, achieved low-density lipoprotein cholesterol level, and statin therapy duration to cardiovascular risk reduction in patients with type 2 diabetes: population based cohort study. [Cardiovascular diabetology\\_2022; 21:28. http://www.ncbi.nlm.nih.gov/pubmed/?term=35193571](http://www.ncbi.nlm.nih.gov/pubmed/?term=35193571)

## A common problem that remains a challenge – Hypertriglyceridemia

Management of LDL-c has evolved significantly over the last ten years, providing health care providers with simple and effective treatment options that should enable most patients to and safely achieve guideline dictated LDL-c. Hypertriglyceridemia (HTG) is a common lipid disorder but with less clear guidelines and therapeutic options, challenging HCP’s understanding of managing patients presenting with this type of dyslipidemia. This concise and comprehensive review can help clinicians improve their knowledge on this complex topic. The article provides a stepwise, clinical approach to diagnosing and managing hypertriglyceridemia. The author presents three commonly encountered scenarios and discusses the needed steps for diagnosis for each case. Based on patient characteristics, management approaches both lifestyle-based and pharmacological options—a worthwhile time investment for those HCPs involved in lipid management.

Subramanian S. Approach to the Patient with Moderate Hypertriglyceridemia. [J Clin Endocrinol Metab\\_2022. http://www.ncbi.nlm.nih.gov/pubmed/?term=35184196](http://www.ncbi.nlm.nih.gov/pubmed/?term=35184196)

## Meta-analysis on benefits and harms of statin used prior to thrombolysis for ischemic stroke

Thrombolysis is now considered the preferred treatment option for patients presenting with an acute ischemic stroke. This meta-analysis examined the benefits and safety of having statins “on board” before thrombolysis. Out of 87 published trials were eligible for this meta-analysis. Included in these studies were 10 344 patients. Two thousand forty-eight patients used statins and 8296 without a statin. Evaluated were clinical recovery <24 hrs, OR: 1.82 (1.49-2.21); excellent recovery, OR: 1.03 (0.80-1.12); favorable outcome, OR: 0.99 (0.85-1.16); intracranial hemorrhage (ICH), OR: 1.16b(0.97-1.40); and for symptomatic ICH (sICH), OR: 1.40 (1.02-1.92). The authors concluded that based on the findings of this meta-analysis, ischemic stroke patients receiving thrombolysis pretreatment statins were related to a better clinical recovery and lower short-term mortality. Pretreatment statins had no significant relationship with mRS at 90 days and ICH. Pretreatment high dose statins may be related to an increased risk for sICH, but this relationship needs further investigation.

Cui C, Li Q, Li C *et al.* Statin pretreatment combined with intravenous thrombolysis for ischemic stroke patients: A meta-analysis. Journal of clinical neuroscience : official journal of the Neurosurgical Society of Australasia 2022; 98:142-148. <http://www.ncbi.nlm.nih.gov/pubmed/?term=35180504>

## Statin use in low- and middle income countries – WHO targets not reached

Statins provided patients at risk for ASCVD protective benefits for future CV events. They are part of all national and international guidelines for CVD risk management but implementing those guidelines remains a challenge. In developed economies, prescribing statins to eligible patients has improved greatly; however, implementing new guidelines dictated LDL- targets remains unsatisfactory. This report explored the use of statins in 41 low-income and middle-income countries. Targets set by the WHO aim for at least 50% of eligible patients to be using statins. Using representative health surveys of 41 countries (2013 – 2019) included individual-level data of 116 449 non-pregnant individuals aged 40-69 years. Of those, 9229 had a history of CVD (7.9%). Furthermore, 8453 persons without a history of CVD (9.7%) were eligible for a statin based on a 10-year CV risk > 20%. Statins were used by 8.0% of those individuals categorized as high-risk primary prevention and by 21.9% of the secondary prevention patients. Not a single country or region achieved the WHO target of prescribing statins to at least 50% of the eligible individuals. Lower healthcare spending was associated with less statin use. Higher statin use was observed in women for primary prevention, RR 1.83 (1.22-2.76); older persons (60-69 year), in primary prevention RR: 1.86 (1.04-3.33) and secondary prevention (50-59 years), RR: 1.71 (1.35-2.18), (60-69 years) RR:2.09 (1.65-2.65); education (primary prevention), RR: 1.61 (1.09-2.37), and secondary prevention, RR: 1.28 (0.97-1.69); living in urban areas (secondary prevention only), RR: 0.82 (0.66-1.00). These results emphasize the need for projects directed at scaling up statin use in low and middle-income countries.

Marcus ME, Manne-Goehler J, Theilmann M *et al.* Use of statins for the prevention of cardiovascular disease in 41 low-income and middle-income countries: a cross-sectional study of nationally representative, individual-level data. The Lancet. Global health 2022; 10:e369-e379. <http://www.ncbi.nlm.nih.gov/pubmed/?term=35180420>

Raal FJ, Mohamed F. Statins: are they appropriate for all patients? The Lancet. Global health 2022; 10:e305-e306. <http://www.ncbi.nlm.nih.gov/pubmed/?term=35180403>

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## Basic Science publications

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