

Editors' Picks for 2014 and a Look into the Future

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Received: January 27, 2015 / Published online: March 13, 2015

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Keywords: PCSK9 inhibitor; Low-density lipoprotein cholesterol; Ezetimibe; Statin therapy; Angiotensin receptor blocker; LCZ696; Valsartan/sacubitril; Enalapril; Transcatheter aortic valve implantation; Antiplatelet therapy

The year 2014 brought a large number of important advances to cardiovascular medicine that are likely to impact the field for many years, if not decades [1]. Herein are our thoughts on the top stories in 2014 and what is likely to remain hot in 2015.

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In the field of lipids, several studies with proprotein convertase subtilisin kexin 9 (PCSK9) inhibitors demonstrated their potent effects to lower low-density-lipoprotein cholesterol (LDL-C) in a wide variety of patients. In addition to reducing LDL-C by 50% or more, PCSK9 inhibitors have favorable effects on apolipoprotein-B, lipoprotein (a), and triglycerides. Although much less potent than the PCSK9 inhibitors, the cholesterol absorption inhibitor ezetimibe became the first non-statin to demonstrate a reduction in cardiovascular events on top of background statin therapy. In the IMPROVE IT trial (ClinicalTrials.gov NCT 00202878), the addition of ezetimibe to statin therapy decreased average LDL from 69.5 to 53.7 mg/dl and reduced cardiovascular events, without any safety concerns. Although the benefits were relatively modest (10% reduction in cardiovascular death, myocardial infarction (MI), or stroke), this proof of principle bodes well for PCSK9 inhibitors and other drugs in development that lower LDL-C by other mechanisms.

In the field of heart failure, a novel approach that combined an angiotensin receptor blocker and a neprilysin inhibitor (LCZ696, valsartan/

sacubitril) demonstrated a 20% reduction in hospitalization for heart failure or cardiovascular mortality as compared to enalapril alone. This landmark study demonstrated that dual-acting neurohormonal inhibition further reduced clinical events beyond that obtained with a single inhibitor of the renin-angiotensin system, which had been the gold standard for over 2 decades.

In the world of interventional cardiology three developments stand out in 2014. An implantable loop recorder was six times more likely than conventional monitoring to pick up atrial fibrillation (the majority of episodes were asymptomatic) among patients who recently had an ischemic stroke of unknown etiology, while a second study confirmed the benefit of continued long-term monitoring for arrhythmia after a cryptogenic cerebrovascular event. Defying what had been long-standing conventional wisdom, percutaneous coronary intervention (PCI) of “non-culprit” stable lesions in addition to immediate PCI of the infarct-related lesion was shown in two small studies to improve long-term outcomes. These findings resulted in a 180° turn in PCI guidelines and was rapidly incorporated into clinical practice, however the results of a larger trial are eagerly awaited to support this turn. Lastly, the DAPT (ClinicalTrials.gov NCT01106534) trial showed that extended therapy with two oral antiplatelet drugs beyond the usual 12 months post stenting was associated with reduction in very late stent thrombosis and recurrent myocardial infarction, albeit with an increase in bleeding.

Looking ahead to 2015, we anticipate a similar number of breakthroughs. Ongoing studies with 3 PCSK9 inhibitors will likely continue to bang a steady and increasingly louder drumbeat. We will learn more about extended duration of dual antiplatelet therapy

with ticagrelor + aspirin when the PEGASUS-TIMI 54 (ClinicalTrials.gov NCT01225562) trial reports this spring. Several drugs targeting different mechanisms to treat diabetes are being studied and hold promise to be the first since metformin to reduce cardiovascular events. Ongoing research with percutaneous approaches for treating valvular disease and renovascular hypertension are also likely to make big news in 2015, whether the results are favorable or not. In patients with aortic stenosis the interventional approach (TAVI) is likely to become the standard of care, not only in patients with high surgical risk but in patients with intermediate risk as well.

Given the enormous number of analyses that clinical studies and databases generate, a wide variety of opportunities to publish the results is required. We hope that many of you will not only look at *Cardiology and Therapy* to learn about these advances, but also encourage you to submit your best work to the journal for consideration.

ACKNOWLEDGMENTS

No funding or sponsorship was received for the publication of this article. All named authors meet the International Committee of Medical Journal Editors (ICMJE) criteria for authorship for this manuscript, take responsibility for the integrity of the work as a whole, and have given final approval for the version to be published.

Conflict of Interest. Robert Guigliano declares that in the past 12 months he has received clinical trials/research support from Amgen and Merck; has received honoraria for CME lectures from Amgen, Daiichi-Sankyo, Merck; and has received consultancy fees from Amgen, Daiichi-Sankyo, GlaxoSmithKline,

Lexicon Merck, Portola, Pfizer. Uwe Zeymer declares that he has received research funding from Eli Lilly, Daiichi Sankyo, and Sanofi; has received speakers honoraria from AstraZeneca, Daiichi Sankyo, Eli Lilly, and Sanofi; and has served on the advisory board of AstraZeneca, Daiichi Sankyo, Lilly, and The Medicines Company. Ian Menown declares that he has received grants to institution, honoraria and/or conference sponsorship from Boston Scientific, Sanofi Aventis, Biosensors, Merilife, Orbus Neich, Menarini, AstraZeneca, Bayer, Boehringer Ingelheim, Daiichi Sankyo, Lilly, Bristol Myers Squibb, Pfizer.

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