Prevention is better than cure—so the saying goes that is as important for cardiology as for everyday life. We are therefore proud to present an issue of the *European Heart Journal* on this topic. Indeed, we have taken this matter seriously in the past, for instance by publishing guidelines on cardiovascular disease prevention in clinical practice,1 on the management of dyslipidaemias,2 and on arterial hypertension,3 on diabetes, pre-diabetes, and cardiovascular disease.4 In this issue, we report on the most recent developments of preventive cardiology in 2014 as well as on the progress made in imaging, a specialty that is equally as important for prevention as for any other specialty of cardiology.

**The year in cardiology 2014: imaging** is a comprehensive summary by several experts in the field such as Oliver Gaemperli, Nina Ajmone Marsan, Victoria Delgado, and Jeroen J. Bax from Zurich and Leiden, respectively.5 Indeed, in 2014, many articles were published on the use of non-invasive cardiovascular imaging, including echocardiography, nuclear imaging, computed tomography (CT), and cardiac magnetic resonance (CMR) imaging. A selection of these is presented in this article. The focus is mainly on technical innovations and emerging applications in clinical cardiology in prevention and beyond.

This *Current Opinion* article is nicely complemented by another by G. De Backer, J.J.P. Kastelein, and U. Landmesser from Brussels, Amsterdam, and Berlin, respectively, *The year in cardiology 2014: prevention*.6 Indeed, knowledge alone is particularly futile without implementation in the field of prevention—only what really will be done, will have an impact on outcome. Fortunately, 2014 was a year during which great efforts were made to reduce the gap between evidence-based recommendations on the prevention of cardiovascular disease and daily practice. Practitioners require clear and practical guidance, applicable to the patients seen in their practice, and in accordance with national, cultural, and socio-economic aspects of their societies. In recent years and particularly during the past few months, new guidelines related to the prevention of cardiovascular disease have been presented in Europe and in the USA.7 A debate has emerged that focuses on the differences between these guidelines, differences that are mainly related to strategies and implementation, not to the scientific evidence. Insufficient attention has been given to the similarities between these guidelines. In this overview, the authors report on additional developments in the field of cardiovascular epidemiology and prevention published in the past year.

The issue itself presents four original articles on the subject. The first article by David Kandzari et al. entitled *Predictors of the blood pressure response in the Symplicity HTN-3 trial* gives important and truly novel insights into the impact of the number of ablations during percutaneous renal ablation procedures on the response of blood pressure at follow-up. The paper, accompanied by a thought-provoking *Editorial* by Felix Mahfoud and Thomas F. Lüscher,8 strongly suggests that if 12 or more ablations are performed properly in both renal arteries in patients with treatment-resistant hypertension, then a similar blood pressure reduction is obtained to that in the previous smaller, but also randomized, albeit not sham-controlled Symplicity HTN-2 trial, as discussed in a recent consensus paper discussed in the *European Heart Journal*.9 Caution must certainly be used in interpreting these data as this is an unspecified subanalysis. Nevertheless, these data will help to design new trials assessing the possible usefulness of renal nerve ablation in hypertension.

The second paper entitled *Prognostic impact of chronic nitrate therapy in patients with vasospastic angina: multicentre registry study of the Japanese coronary spasm association* by Jun Takahashi et al. from Japan reports on 1429 patients with vasospastic angina (VSA) with major adverse cardiac events (MACE) as the primary endpoint.10 Propensity score matching and a multivariable Cox proportional hazard model were used. A total of 49% of the patients were treated with nitrates. Calcium channel blockers were used in > 90% of patients. During 32 months, 5.9% of the patients reached the primary endpoint. The incidence of MACE was comparable between the patients with and without nitrates. Although nicorandil itself had a neutral prognostic effect on VSA, the multivariable Cox model revealed the potential harm of concomitant use of conventional nitrates and nicorandil, particularly when glycerin trinitrate and nicorandil were used simultaneously. Thus, chronic nitrate use did not improve the long-term prognosis of VSA patients when combined with calcium channel blockers. Furthermore, the VSA patients with multiple nitrates might have an increased risk for cardiac events.

Further, an increasing number of clinical studies highlight the importance of the inflammatory mediator prostaglandin F$_{2a}$ (PGF$_{2a}$). Prostaglandin F$_{2a}$ activity has been suggested to play pivotal roles in the development of cardiovascular diseases and cancer. However, whether systemic PGF$_{2a}$ concentrations may signal mortality is unknown. Thus, the third original research paper, *Prostaglandin F$_{2a}$ formation is associated with mortality in a Swedish community-based cohort of older males*, by Johanna Helmersson-Karlqvist et al.,12 determined urinary 15-keto-dihydro-PGF$_{2a}$ in a Swedish population of 670 men over a period of 9.7 years. In Cox regression models, urinary 15-keto-dihydro-PGF$_{2a}$ was associated with cardiovascular mortality independent of established cardiovascular risk factors.
risk factors including C-reactive protein. Of note, urinary 15-keto-dihydro-PGF2α was also independently associated with overall mortality. The combination of 15-keto-dihydro-PGF2α concentrations above the median and high serum high-sensitive C-reactive protein (>3 mg/L) was independently associated with a two-fold increased risk of cancer and total mortality. The authors therefore conclude that the inflammatory mediator PGF2α predicts total and cardiovascular mortality over a period of 10 years. The results are in line with the emerging evidence of the importance of the inflammatory mediator PGF2α in fatal cardiovascular disease.

The fourth paper, entitled ‘T1 mapping and survival in systemic light-chain amyloidosis’, by Sanjay M. Banypersad et al. assessed the prognostic value of imaging, specifically the myocardial pre-contrast T1 and extracellular volume (ECV) in systemic amyloid light-chain (AL) amyloidosis using CMR T1 mapping. To that end, 100 patients and 54 healthy controls underwent CMR and T1 mapping pre- and post-contrast. Myocardial ECV was calculated at contrast equilibrium (ECVi) and 15 min post-bolus (ECVb). Patients were followed up for 23 months. Mean ECVi was raised in amyloid, as was ECVb, and native pre-contrast T1 compared with healthy volunteers. All three correlated with pre-test probability of cardiac involvement, cardiac biomarkers, and systolic and diastolic dysfunction. During follow-up, 25 deaths occurred. An ECVi of >0.45 carried a hazard ratio (HR) for death of 3.84 as did ECV after primed infusion and ECVb. However, isolated post-contrast T1 was non-predictive. In Cox regression models, ECVi was independently predictive of mortality (HR ¼ 4.41) after adjusting for EE, ejection fraction, diastolic dysfunction grade, and NT-proBNP. Thus, it appears that myocardial ECV and pre-contrast T1 are biomarkers for AL cardiac amyloid and they predict mortality in systemic amyloidosis.

We hope that this issue of the European Heart Journal will update our readers on prevention and imaging and provide new insights into some novel aspects of these fields.

References


