The best of the European Heart Journal: look back with pride

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Good, better, best

Who would not like to be good, preferably better or perfect? The rule applies to sports, business, and academia alike. Ratings are thus common practice in all areas: we are impressed by gold medalists and champions, AAA ratings for banks and businesses, and more recently also for entire states.

Competing with others has been a passion of humans throughout their existence: the Olympics, initiated by the Greeks and continued by the Romans, have been resurrected in modern times. We watch with passion competitions in all sorts of sports events and suffer and triumph with our idols. The events of the Fédération Internationale de Football Associations (FIFA)—be they European or World championships—are broadcast and watched by up to 3 billion people worldwide. We all eagerly follow the latest sports news with as much interest as the business reports of the day. In science, Nobel laureates are the ones that we admire—they are the key opinion leaders, innovators, and discoverers.

Be first!

Joe Kennedy, the father of the 35th President of the USA, told his sons: ‘Always come in first. Second place is failure.’ Indeed, in science this advice is as crucial as it is in politics: Who first discovered the HIV virus? Was it Gallo or Montagnier? Who won the race for the human genome project? Who performed the first percutaneous transluminal coronary angioplasty (PTCA)? Grünzig or Dotter? Ranking is important in science and medicine. To be first means to be the first to publish and the last to be remembered. Unpublished findings do not exist. A tragic example was Rosalind Franklin, the dark lady of DNA. In 1951 she was the first to discover the helical structure of DNA in her famous crystallographic experiments, but the findings did not leave her laboratory. When James Watson visited her laboratory on 30 January 1953, he saw her classical photograph 51, and soon thereafter announced in his local pub that he had discovered the secret of life. When Watson and Crick received the Nobel Prize in 1962 for their landmark paper published in *Nature*, the dark lady of DNA was not part of the team. She was just mentioned in the acknowledgments of their seminal publication: ‘We also have been stimulated by . . . the unpublished experimental results and ideas of . . . Dr. R. E. Franklin . . .’. Publish or perish is no legend, it is a reality for every scientist.

Excellence

However, there is more to it than just being first: the findings have to be important. But what is important? Important results have to be innovative and they are expected to influence or change practice in a respective field. How can we measure this objectively? Certainly, in the long run, the practical consequences of a discovery make it important: obviously, Robert Koch’s discovery of *Mycobacterium tuberculosis* set the stage for a remedy for a deadly disease that killed millions. Although Koch did not find a cure in his lifetime—in fact this was left to Selman Waksman and his colleague Albert Schatz—he is remembered as the true discoverer of tuberculosis. Similarly, ever since it turned out that Jonas Salk’s and later Albert Sabin’s vaccination led to the eradication of polio, the two scientists deserve the credit for a major contribution to medicine and public health. In cardiology, such examples would be the introduction of defibrillation by Paul M. Zoll (1911–1998), the discovery of statins by Akira Endo (1933) and of angiotensin-converting enzyme (ACE) inhibitors by Miguel Ondetti (1930–2004) and David Cushman (1939–2000), or the first coronary angioplasty by Andreas Grünzig in Zurich.

However, not all discoveries have such obvious practical implications or their impact will take more time to evolve. For instance, the discovery of nitric oxide by Robert Furchgott, later complemented by contributions of Salvador Moncada, Louis Ignarro, Ferid Murad, and Paul M. Vanhoutte, did not immediately translate into practical aspects of medicine; nevertheless it revolutionized our understanding of the cardiovascular system and of the action of inhibitors of the ACE/kinase II and phosphodiesterases.

Can we quantify quality?

Can we thus measure quality? Can excellence be expressed in crude numbers? The short answer is probably no—but, there is a but—we must have measures of it, otherwise we are lost in an ever-increasing
number of publications available today. At first glance, we might like a paper; we will find it interesting, but how should we assess its relevance? Good and certainly excellent papers will attract the attention of peers and readers. Every editor will hear the comments of the readers of his journal, but this is not objective enough. What really reflects impact is the fact that other physicians and scientist read and use the information provided. And this can be measured by the citation index: what is cited, is interesting. To cite, derived from the Latin word citare, means to call upon, to invite as a testimonial: who we cite has stimulated our thoughts or experiments; hence, they have contributed to the scientific process and the advancement of knowledge. As a consequence, the citation index has established itself as the most appropriate measure to assess the importance of publications.

Like any measure of quality, the citation index also has been criticized. And rightly so; it certainly is biased by fashion, the paradigms of the decade, and other factors as well—but what can be said about the citation index, Churchill said about democracy:8 ‘It has been said that democracy is the worst form of government except all the others that have been tried.’

The best

Not only authors, but every editor is eager to know the fate of his publications. Did he select the best papers submitted? In most high impact journals, the acceptance rate has dropped to demotivatingly low numbers: most publish between 10% and 15% of the submitted manuscripts. The European Heart Journal currently accepts 12% of the papers it receives. However, this was not always the case in its history: early on the journal received a low number of papers and was forced to accept most of the submissions.10 On the 30th birthday of the journal, the situation was completely different:11 with some 3500 submissions and an impact factor > 10, the European Heart Journal made it to centre stage and was in a position to select what its editors considered the best. Furthermore, the newly introduced manuscript transfer system allowed for publications of more specialized studies in the subspecialty journals of the ESC journal family (Figures 1 and 2).

But was it truly the best? Obviously, no one is perfect; and reviewers and editors are not perfect either. Certainly, most editors try their best to follow the principles of good publishing practice,12,13 and most medical and scientific societies have published rules of proper scientific conduct, among them the European Society of Cardiology14 and the International Committee of Medical Journal Editors,15 but this is not enough. Novel information not only has to be obtained properly, it must also be interesting and relevant.

Recently, Winnik et al. analysed the characteristics of abstracts submitted to the Annual Congress of the European Society of Cardiology and the publications that followed their presentation;16 interestingly, abstracts most likely to be accepted for the programme were those covering basic science, those reporting on >100 patients, and particularly those describing the results of randomized trials. Thus, the best evidence attracts the greatest attention, and will be later published and cited (Table 1).
From knowledge to practice: the guidelines

Scientific journals publish not only original research papers, but also editorials, review articles, and guidelines. The latter put novel information in the context of what we know today and provide recommendations on its clinical use. As most physicians see patients, it is not surprising that publications that affect their daily work are cited the most, i.e. large randomized trials, reviews, and particularly guidelines.

The European Heart Journal has published a large number of guidelines since the new editors took over in 2009 and even more in the last 5 years (Table 2). With 252 citations and some 28 600 cumulative downloads, the best cited were the ‘Guidelines for the diagnosis and treatment of pulmonary hypertension’ under the chairmanship of Nazzareno Galie. On a similar topic, a meta-analysis of randomized controlled trials in pulmonary arterial hypertension by the same author also attracted 114 citations, suggesting that meta-analyses—as in other journals—are highly read and cited. The second most cited guideline in 2009 was the ‘Guidelines for the diagnosis and management of syncope’ with 130 citations and some 21 800 downloads. Also highly cited were the ‘Guidelines for pre-operative cardiac risk assessment and perioperative cardiac management in non-cardiac surgery’ with 127 citations and some 17 200 downloads, and the ‘Guidelines for prevention, diagnosis, and treatment of infective endocarditis’ with 119 citations and an impressive 48 500 downloads.

In general, publications need time to be read and to be cited; this is also why guidelines published in later years receive fewer citations than those published earlier. However, the topic also determines the attention they receive. Indeed, both the ‘Guidelines for the management of atrial fibrillation’ chaired by John A. Camm and the ‘Guidelines on myocardial revascularization’ run by William Wijns and Philippe Kohl received 203 and 188 citations, respectively, since their publication in 2010 and were downloaded 17 800 and 10 000 times, respectively. In contrast, so far the ‘Guidelines on device therapy in heart failure’ and the ‘Guidelines on the management of grown-up congenital heart disease’ have received far fewer citations, i.e. 44 and 28, respectively (downloads 3130 and 4402, respectively). On the other hand, a working group statement on the ‘Diagnosis of arrhythmogenic right ventricular cardiomyopathy/dysplasia’ was mentioned 31 times in the literature in spite of the fact that it viewed a very rare disease.

In 2011, the European Heart Journal published four guidelines, i.e. the ‘ESC/EAS Guidelines for the management of dyslipidaemias’, the ‘ESC Guidelines on the diagnosis and treatment of peripheral artery disease’, the ‘ESC Guidelines for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation’, and the ‘ESC Guidelines on the management of cardiovascular diseases during pregnancy’. For all these most recent documents there has obviously not been enough time to judge their impact. Given their practical importance, however, it is likely that they will receive appropriate attention.

Original research

What really matters in science, however, are original research papers. The European Heart Journal has received an increasing number of submissions in this category since its inception. Today, ~3600 manuscripts are evaluated every year and most of them are original research papers. Due the clinical importance of the subject, a large proportion of manuscripts are related to acute coronary syndromes (ACS) and coronary artery disease in general, but valvular heart disease has also become an important topic.

Acute coronary syndromes

With 46 citations since 2010, a report on ‘Reperfusion therapy for ST-elevation myocardial infarction in Europe’ has attracted considerable attention. Petr Widimsky et al. showed that today most northern, western, and central European countries use percutaneous coronary intervention (PCI) for the majority of their ST-elevation myocardial infarction (STEMI) patients, leading to an in-hospital mortality of 2.7–8%, compared with thrombolysis with a figure of 3.5–14%. Thrombectomy is a more recent technique to improve reperfusion in STEMI patients. In a study involving 2686 patients enrolled in 11 trials, Burzotta et al. showed that this technique significantly improved outcome in STEMI patients undergoing PCI and that its effects were particularly pronounced in those receiving manual thrombectomy and glycoprotein inhibitors. A systematic review by Sjauw et al. investigated the usefulness of intra-aortic balloon pump therapy in STEMI. In their study, which has been cited 71 times since its publication, the authors found that randomized data do not support the use of the aortic balloon pump adjunctive to acute PCI (unlike those treated with thrombolysis) in STEMI. This study challenged the guideline recommendations and called for future larger randomized trials in this field.

A similar number of citations were received by the CHARISMA study. Huikuri et al. reported in 5869 consecutive patients that fatal or near fatal arrhythmias can be predicted by many risk-stratifying methods, but in particular by heart rate variability and reduced ejection fraction after an acute myocardial infarction.
Antithrombotic therapy, drug resistance, and bleeding have become important determinants of clinical outcome after ACS. Indeed, the European Heart Journal has recently published one of many Focus Issues (Table 3) on antiplatelet therapy discussing bleeding and antithrombotic efficacy. A study of a real-world Austrian multicentre registry involving ~6000 patients by Dörler et al. found that clopidogrel pre-treatment is associated with reduced in-hospital mortality in STEMI treated with PCI.35 These results were confirmed in the same issue by another large observational study by Koul et al. reflecting real-life practice in STEMI patients with paroxysmal atrial fibrillation: a prospective observational single centre study.37 In a meta-analysis of 34 studies, Nijjer et al. investigated the safety of clopidogrel being continued until the time of coronary artery bypass grafting in patients with ACS. The authors recommend, based on their findings, to go ahead with urgent surgery in patients on clopidogrel without delay. Nevertheless, large randomized trials would be required to substantiate this recommendation, particularly since a highly cited risk model from the ACUITY trial by Mehran et al. again demonstrated that major bleeds after myocardial infarction are a major determinant of 1-year mortality.38

**Coronary artery disease**

Clopidogrel resistance remained a hotly debated issue in the Journal, in patients both with acute and with stable coronary artery disease. Indeed, in a paper cited 47 times, Varenhorst et al. established that genetic variation of CYP2C19 affects both pharmacokinetic and pharmacodynamic responses to clopidogrel, but not to prasugrel in aspirin-treated patients with coronary artery disease.39 Of note, Sibbing et al. could not confirm an association of paraxoxonase-1 Q192R genotypes with the response of platelets to clopidogrel and the risk of stent thrombosis suggested by a paper published in Nature Medicine by Bouman et al. in a much larger cohort of >1500 patients undergoing coronary stenting.41 On the other
hand, the same authors found in a paper cited >100 times that the cytochrome P450 2C19 loss-of-function polymorphism significantly increased the risk of stent thrombosis. Thus, the clinical usefulness of genotyping when using clopidogrel remains controversial, as outlined earlier in a comprehensive and highly cited position paper of the Working Group on Thrombosis of the European Society of Cardiology, although certain mutations may indeed be relevant. On the other hand, it became quite clear thanks to a careful meta-analysis by Hassan et al. that late stent malapposition is strongly increased after drug-eluting stent implantation and associated with late and very late stent thrombosis. These findings raised interest in novel imaging techniques such as optical coherence tomography (OCT), among others, to assess stent endothelialization and apposition. Of note, Barlis et al. reported a substudy from the LEADERS trial using OCT to assess strut coverage by tissue. At 9 months follow-up, re-endothelialization appeared more complete in patients allocated to a biolimus-eluting stent compared with a sirolimus-eluting stent. As incomplete endothelialization has been associated with late stent thrombosis, these findings are clinically important.

The debate as to whether and in which patients coronary stenting is equal or non-inferior compared with bypass surgery is ongoing, even after the introduction of drug-eluting stents. In this context, the 3-year outcome of the SYNTAX trial was of importance. Kappetein et al. reported that after 3 years, major adverse cardiac events remained higher with stenting than with bypass surgery. However, in patients with less complex disease, i.e. low SYNTAX scores, PCI is an acceptable revascularization strategy. Tardiff et al. reminded our readers that drugs should not be forgotten as a treatment strategy in patients with stable coronary artery disease. In his well cited study of almost 900 patients

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<td>Title</td>
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<tr>
<td>2011</td>
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<td>2011</td>
<td>Acute Coronary Syndromes (ACS) in patients presenting without persistent ST-segment elevation (Management of)</td>
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<th>Table 3</th>
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<td>2012</td>
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already on beta-blockers, the novel I-recurrent inhibitor ivabradine showed excellent symptomatic efficacy.\textsuperscript{49} Besides drugs improving symptoms, those improving remodelling and, in turn, outcome are important. With renin inhibitors, a third generation of drugs became available for medical treatment of patients after ACS. Scott Solomon reported a double-blind randomized trial in 820 patients demonstrating that adding the renin inhibitor aliskiren on top of standard therapy disappointingly did not result in a further attenuation of left ventricular remodelling.\textsuperscript{50} Thus, it appears that with inhibition of the renin–angiotensin system, we became available for medical treatment of patients after ACS. Scott Solomon reported a double-blind randomized trial in 820 patients demonstrating that adding the renin inhibitor aliskiren on top of standard therapy disappointingly did not result in a further attenuation of left ventricular remodelling.\textsuperscript{50} Thus, it appears that with inhibition of the renin–angiotensin system, we

**Valvular heart disease**

Currently, management of valvular heart disease is one of the most innovative areas of cardiovascular medicine. Since the development of transapical and transfemoral aortic valve stenting, reviewed by the pioneers of the field, John Webb and Alain Cribier,\textsuperscript{51} this technique has become widely used. The *European Heart Journal* thus dedicated a Focus Issue to this topic (Table 3).\textsuperscript{52} Importantly, a consensus report from the valve academic research consortium (VARC) was part of this issue\textsuperscript{53} which should permit comparison of the results of clinical trials in this area. Many registries have been established to study the outcome of real-world patients treated with this novel technology, among them the large French registry with 244 patients and the well cited German registry with close to 700 patients confirming the satisfactory results obtained in randomized trials, among them the European PARTNERS trial.\textsuperscript{54,55,56} It is quite impressive to see European researchers leading this novel area and the largest registries being published in the *European Heart Journal*. For the selection of patients for transcatheter or surgical procedures, the EuroSCORE has been commonly used. In this context, a paper by Osswald et al. is of importance, showing that this score overestimates the surgical 30-day mortality risk of patients with aortic stenosis.\textsuperscript{57} As such, it comes as no surprise that this paper was cited 56 times in the scientific literature. An important risk in patients undergoing catheter-based aortic valve stenting is acute kidney failure. Bagur et al. investigated >200 patients and found an incidence of acute kidney injury of almost 12%, with 1.4% undergoing haemodialysis. Of interest, the incidence of acute kidney failure was lower in those undergoing stenting compared with those operated on conventionally.\textsuperscript{58} The MitraClip was another important development in the percutaneous treatment of patients with valvular heart disease. This percutaneous technique, again suitable for patients at high risk for surgery, has been introduced in clinical development in Europe and a first series of 51 patients published in the *European Heart Journal*.\textsuperscript{59} Franzen et al. for the first time reported that with this less invasive technique, clinical and echocardiographic improvement can be achieved in these high risk patients.

**Heart failure**

Heart failure is another highly innovative subject of cardiovascular medicine. Heart failure may be a consequence of valvular heart disease, but often it is due to ischaemic heart disease or unknown causes with either impaired or preserved left ventricular function.\textsuperscript{60} Both conditions may, in turn, lead to valvular heart disease, mitral regurgitation in particular. Pacing devices have revolutionized the management of such patients, as outlined in detail in a review by Singh and Gras\textsuperscript{61} for adults and by Van der Hulst et al.\textsuperscript{62} for paediatric patients and those with congenital heart disease.\textsuperscript{62} Besides neurohumoral activation, central haemodynamics, such as central systolic blood pressure and central augmentation index, have also emerged as important prognostic factors of outcome and mortality in subjects with normal left ventricular function or heart failure.\textsuperscript{63} The interplay of the heart and the kidney appears particularly important in such patients, as outlined by a highly cited report from the consensus conference of the acute dialysis quality initiative (ADQI).\textsuperscript{64} Although the activation of the renin–angiotensin and of the sympathetic nervous system has been well characterized in heart failure, the role of the vug has been neglected. A highly cited open-label phase II study on chronic vagus nerve stimulation by De Ferrari et al.\textsuperscript{65} is of interest, showing improvements in New York Heart Association (NYHA) class, 6 min walk test, left ventricular ejection fraction, and systolic volumes up to 1 year.\textsuperscript{65}

**Stem cell therapy**

Rejuvenation of the body has been a dream of mankind every since their existence. Unlike the zebra fish, salamanders, and other amphibians, humans are unable to regrow tissue of lost extremities or organs. Indeed, after prolonged ischaemia of the heart muscle, scar formation rather than regeneration of muscle tissue ensues, with severe consequences for organ function and clinical outcome. The discovery of progenitor and stem cells in our body potentially able to regenerate various tissues has raised great hope also in cardiovascular medicine.\textsuperscript{66} The REGENT trial by Tandera et al.\textsuperscript{67} was cited >80 times, although it found that in ACS with impaired left ventricular ejection fraction, treatment with bone marrow-derived CD34+CXCR4+ cells did not improve pump function or volumes. The Dutch HEBE trial by Hirsch et al.\textsuperscript{68} was recently published and has hence received just a handful of citations, but it confirmed the neutral results of the REGENT trial in 200 ACS patients. Thus, the effectiveness of cell therapy in cardiac patients remains uncertain. Stem cells can also be used for the investigation of drugs and the characterization of novel mutants of channelopathies in patients with congenital arrhythmias, among others. Indeed, Matsa et al.\textsuperscript{69} using skin fibroblasts of a patient with KCNH2 G1681A mutation, encoding a I\textsubscript{to}, potassium ion channel reprogrammed to human induced pluripotent stem cells showed that this approach can be used to test drugs potentially suitable for a specific condition, a novel form of personalized medicine.\textsuperscript{69}

**Arrhythmias**

The field of arrhythmias has been recently dominated by atrial fibrillation. Indeed, marked progress has been made in the management of this increasingly prevalent disease by the introduction of pulmonary vein isolation using ablation catheters as well as novel anticoagulants.\textsuperscript{70} Of note, in a prospective study involving 153 patients O’Neill et al. showed that with catheter ablation of persistent atrial fibrillation with termination of the arrhythmia as an endpoint (involving a second procedure in 79 patients), sinus rhythm was maintained in 95% up to 32 months in those with a successful
procedure. Whether this procedure will eventually also improve clinical outcome awaits the results of large ongoing trials. In the meantime, the technique has been refined, particularly with the introduction of novel cryoballoons allowing electrical isolation of pulmonary veins with a lower incidence of phrenic nerve palsy.

**Imaging**

In the past, several papers dealing with new imaging techniques, in particular cardiac computed tomography (CT), were among the most highly cited, for instance one by Husmann et al. on low-dose CT published in 2008. With the technique becoming part of clinical routine, fewer innovative papers in this area have been published, although hybrid imaging and plaque imaging remain an area of great potential. Nevertheless, Stephan Achenbach’s study on coronary CT with a dose even below 1 mS using prospectively electrocardiogram (ECG)-triggered high-pitch acquisition was one of the best cited imaging papers, with 79 citations in the literature.

Nuclear imaging remains a mainstay in the diagnosis of coronary artery disease, particularly in the USA. Sabatine et al. reporting on a well cited substudy of the TIMI 35 trial showed that transient stress test-induced ischaemia during nuclear perfusion imaging is associated with an increase in circulating troponin, suggesting that ischaemia leads to a continuous myocyte loss. This finding has been put into a broader context by a review by Stefan Agewall to- gether with Hugo Katus, who pioneered the troponin test, showing that troponin elevations occur in coronary and in non-coronary disease and predict outcome in all, even in stable conditions.

**Prevention**

Prevention is better than treatment—no one would disagree. Indeed, most of our patients are seen at the end stage of the disease process where many aspects of the derangements cannot be fully reversed. To account for the importance of this subject, the European Heart Journal has this year devoted a Focus Issue on Prevention, with reviews on fish oil, and nutrition and reports on sedentary behaviour from INTERHEART, among others (Table 3). The findings of INTERHEART confirmed an earlier well cited study on sedentary time and cardiovascular biomarkers from the large NHANES 2003–2006 study on ~5000 individuals. Thus, it is well documented now that sedentary behaviour unfavourably affects HDL-cholesterol and triglycerides, C-reactive protein and insulin resistance, and increases the risk of myocardial infarction.

The best cited prevention paper with 58 citations was one from the Framingham study on the association of pericardial fat, intrathoracic fat, and visceral abdominal fat with cardiovascular disease burden. Although visceral abdominal fat is known to be a risk factor, pericardial fat has not been investigated yet. Interestingly, pericardial fat is as predictive as visceral abdominal fat.

Similarly cited were recommendations for interpretation of 12-lead ECGs in the athlete of the Sections of Sports Cardiology of the European Association of Cardiovascular Prevention and Rehabilitation. Indeed, sudden death in competitive athletes is a rare but particularly tragic event. For every ECG abnormality, the position paper focused on the ensuing clinical work-up required.

The role of chronic inflammation in atherosclerosis has raised great interest in prevention as well, and, indeed, within the Focus Issue on Prevention, an editorial by Eugene Braunwald and a paper by Peter Sever on C-reactive protein in the ASCOT trial tried to settle some controversial issues. In this context, a highly cited paper on severe psoriasis and cardiovascular risk is of interest, linking this chronic inflammatory disease involving the skin and joints with increased cardiovascular mortality above and beyond that explained by traditional risk factors.

Attempts to increase HDL-cholesterol therefore are highly welcomed as a novel therapeutic strategy. Unfortunately, the first cholesterol ester protein inhibitor (CETP) torcetrapib increased rather than decreased mortality, most probably due to its off-target effects on endothelial nitric oxide synthase (eNOS), endothelin-1, aldosterone, and blood pressure. Well cited studies on the novel CETP inhibitor dalcetrapib published in the European Heart Journal then showed that novel molecules effectively increase HDL-cholesterol, but unlike torcetrapib do not increase blood pressure; however, an improvement of endothelial function could not be documented during chronic therapy with dalcetrapib. The latter finding is the more disconcerting, as a well cited study by Rubinstein et al. on the assessment of endothelial function by non-invasive peripheral arterial tonometry again documented in 270 patients followed over 7 years that endothelial dysfunction is associated with a higher event rate. Thus, it remains unclear until large outcome trials become available whether novel CETP inhibitors will or will not become an effective remedy for patients with low HDL-cholesterol as pointed out by John Chapman et al.

Rather, the European Atherosclerosis Society Consensus Panel suggested that in patients with cardiometabolic abnormalities at LDL-cholesterol goal, elevated levels of triglyceride-rich lipoproteins might represent a promising therapeutic target, although trials with fibrates and niacin were not convincing, particularly recent trials.

Homocysteine is an even more controversial risk factor, particularly since large folate fortification trials were neutral. In a highly cited review article, Antoniades et al. provided molecular explanations for why this approach to lower homocysteine might not work. A previously hardly recognized risk factor that attracted a lot of press coverage upon its publication in the European Heart Journal is sleep duration. Interestingly, Cappuccio et al. showed that both short and long duration of sleep are predictors of cardiovascular outcome.

**And the rest?**

It is obvious that there are fields of cardiology with less impact in the scientific literature. This is not necessarily related to a minor scientific quality. Indeed, the size of the scientific community determines the potential citation index to a large extent. Thus, clinical researchers focusing their activities on rare diseases get fewer citations. This is particularly true for congenital heart disease and cardiomyopathies. This is a real problem as the fight for higher and higher impact factors is creating a bias among editors to accept primarily papers with a high citation potential.

To counterbalance these biases, the European Heart Journal devoted an entire issue to hypertrophic cardiomyopathy (Table 3). In particular, an in-depth discussion on the...
management of obstruction in these patients appeared mandatory, the more that randomized trials are missing.

An even smaller scientific community is that dealing with congenital heart disease. Although the European Heart Journal published a guideline on the management of these patients, relatively few original research papers could be accepted. This is in part related to the lack of international registries allowing for studies in large patient cohorts with outcome data. Further, very few randomized trials have been performed in this area. There are, however, several initiatives to create national and international registries on congenital heart disease; thus, it is hoped that in the future more papers of importance dealing with this subject will appear in the scientific literature.

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