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EDITORIAL

The *EJHF* last Editor's legacy: how can a high impact factor be built?

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Abstract

The *European Journal of Heart Failure (EJHF)* has reached a high impact factor making it one of the most important cardiology journals. I discuss herein what could be the main causes of such high ranking. Publication of the European Society of Cardiology guidelines for the diagnosis and treatment of acute and chronic heart failure has had the most important role with a number of citations, which has been approximately 10 times that of the other most cited articles of the same year. Other position statements, reviews, design papers, and research articles about landmark topics have given major contributions. With respect to the different clinical presentations, articles about heart failure with preserved ejection fraction and about advanced heart failure have gained many citations. Epidemiology, biomarkers, medical treatment, and devices have attracted most of the interest.
In conclusion, being able to look ahead and to publish what is going to become important remains a major challenge. That of *EJHF* has been a success story, to date, and learning from the past may help to build upon this achievement.

Keywords *European Journal of Heart Failure*; Impact Factor; citations; ESC guidelines; clinical trial design papers; heart failure

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Anytime you start a new job, you are surrounded by people asking you to start something novel. You find plenty of people saying things such as 'Now, it's time for change', 'You must show that now it's you', 'No matter how, but you have to show that you take decisions' … This is not specific. This has happened to me every time. I think we are all spoiled by newspapers and magazines and the need of outstanding news almost every day. We are all expecting bombastic announcements. Then, very often it does not matter if they will be fulfilled or not.

In my case with *European Journal of Heart Failure* (*EJHF*), this is not happening and this has a simple cause. What I have inherited is a privilege, an honour, something to continue and, as many know, a lot of work. We know that it is more difficult to say good things than to criticize, but we can all just say good things about *EJHF*. Based on its impact factor, it is now the best journal about heart failure in the world, and the tenth ranked journal among all 125 cardiology journals in the Thomson Reuters Journal Citation Reports® (*Figure 1*).

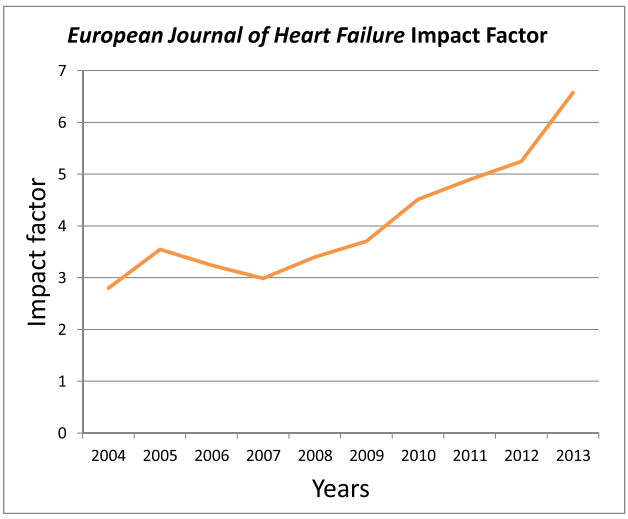
Hence, why not, for a young Editor-in-Chief like me, to try and see the reasons for this success, that is to say to study which were the articles that contributed most to such a high ranking for this journal? These articles are listed in the tables below, and a selection of them has been collected into a virtual issue of *EJHF* to celebrate the legacy of the previous Editor-in-Chief, Dirk van Veldhuisen. Talking about them and briefly summarizing their content will be a way to describe my highlights in heart failure over the last few years.

Why can I do this here and today? Am I celebrating something else in addition to *EJHF*? Yes, and these are Stefan Anker and *ESC Heart Failure* (*ESCHF*), the new open access journal having Stefan as Editor-in-Chief and Stephan von Haehling and Zoltan Papp as Deputy Editors. On their websites, *EJHF* and *ESCHF* are indicated as associated journals. Here I say that they really are. Articles rejected by *EJHF* can be transferred, upon the Authors' acceptance, to *ESCHF*. A few articles may be published simultaneously, and we have already had one.[1] The collaboration can then have many other aspects and here is Stefan's request to have me writing a comment about *EJHF*'s last years, a request that I am happy to try to fulfil.

The landmark article

It is clear from *Tables 1* and *2* that the landmark article published in EJHF in the last years was the 2012 European

Figure 1 The impact factor of *EJHF*.



Society of Cardiology (ESC) guidelines for the diagnosis and treatment of acute and chronic heart failure.[2] Looking at *Table 3*, showing the top 10 articles issued in 2012, these guidelines have almost 10 times the number of citations than the article which ranked second. These guidelines have set new standards for heart failure diagnosis and treatment. With respect to the classification and diagnosis of heart failure, the role of the left ventricular ejection fraction has been established as well as the practical use of biomarkers. New indications for aldosterone antagonists in patients with NYHA class II symptoms and for ivabradine for symptomatic patients with a heart rate ≥70/min have been established, whereas all the limitations and lack of evidence for the treatment of heart failure with preserved ejection fraction (HFpEF) and acute heart failure were shown. In addition, indications for treatment of co-morbidities, left ventricular assist device implantation and coronary revascularization in patients with heart failure have been thoroughly discussed.[2] Following the guidelines, many other articles have paved our advances in heart failure knowledge and some of them are discussed in the succeeding paragraphs.

The 10 most cited articles from *EJHF*

Table 1 lists the top 10 cited articles from *EJHF* overall. The concepts outlined previously are reinforced by this Table.

Table 1. List of the top 10 cited articles from EJHF*

Rank	Article title	Year	Times cited
1	Dickstein K, Cohen-Solal A, Filippatos G *et al.* ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure 2008: the task force for the diagnosis and treatment of acute and chronic heart failure 2008 of the European Society of Cardiology. Developed in collaboration with the Heart Failure Association of the ESC (HFA) and endorsed by the European Society of Intensive Care Medicine (ESICM) [3]	2008	896
2	McMurray JJV, Adamopoulos S, Anker SD *et al.* ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure 2012: the task force for the diagnosis and treatment of acute and chronic heart failure 2012 of the European Society of Cardiology. Developed in collaboration with the Heart Failure Association (HFA) of the ESC [2]	2012	486
3	Stewart S, MacIntyre K, Hole DJ *et al.* More 'malignant' than cancer? Five-year survival following a first admission for heart failure [6]	2001	408
4	Maisel A, Mueller C, Adams K *et al.* State of the art: using natriuretic peptide levels in clinical practice [4]	2008	260
5	Stewart S, Jenkins A, Buchan S *et al.* The current cost of heart failure to the National Health Service in the UK [7]	2002	237
6	Hall C. Essential biochemistry and physiology of (NT-pro)BNP [5]	2004	209
7	Cleland JGF, Daubert JC, Erdmann E; *et al.* The CARE-HF study (CArdiac REsynchronisation in Heart Failure study): rationale, design and end-points [10]	2001	198
8	Oldenburg O, Lamp B, Faber L, *et al.* Sleep-disordered breathing in patients with symptomatic heart failure: a contemporary study of prevalence in and characteristics of 700 patients[9]	2007	177
9	Cleland JGF, Freemantle N, Coletta AP *et al.* Clinical trials update from the American Heart Association: REPAIR-AMI, ASTAMI, JELIS, MEGA, REVIVE-II, SURVIVE, and PROACTIVE [10]	2006	177
10	Berry C, Murdoch DR, McMurray JJV Economics of chronic heart failure [8]	2001	170

*the number of citations is taken from ISI's Web of Science™ (accessed 18 March 2015)

Table 2. List of the top 10 cited articles published in 2011

Rank	Title	Number of cites
1	Franzen O, van der Heyden J, Baldus S *et al.* MitraClip ® therapy in patients with end-stage systolic heart failure[28]	88
2	Lam CSP, Donal E, Kraigher-Krainer E *et al.* Epidemiology and clinical course of heart failure with preserved ejection fraction[13]	85
3	Piepoli MF, Conraads V, Corra U *et al.* Exercise training in heart failure: from theory to practice. A consensus document of the Heart Failure Association and the European Association for Cardiovascular Prevention and Rehabilitation[14]	65
4f	Eschenhagen T, Force T, Ewer MS *et al.* Cardiovascular side effects of cancer therapies: a position statement from the Heart Failure Association of the European Society of Cardiology[15]	58
5	Krum H, Massie B, Abraham WT *et al.* Direct renin inhibition in addition to or as an alternative to angiotensin converting enzyme inhibition in patients with chronic systolic heart failure: rationale and design of the Aliskiren Trial to Minimize OutcomeS in Patients with HEart failuRE (ATMOSPHERE) study[21]	57
6	Maisel AS, Mueller C, Fitzgerald R *et al.* Prognostic utility of plasma neutrophil gelatinase-associated lipocalin in patients with acute heart failure: the NGAL EvaLuation Along with B-type NaTriuretic Peptide in acutely decompensated heart failure (GALLANT) trial[37]	55
7	Inglis SC, Clark RA, McAlister FA *et al.* Which components of heart failure programmes are effective? A systematic review and meta-analysis of the outcomes of structured telephone support or telemonitoring as the primary component of chronic heart failure management in 8323 patients: Abridged Cochrane Review[16]	52
8	Pascual-Figal DA, Manzano-Fernandez S, Boronat Miguel *et al.* Soluble ST2, high-sensitivity troponin T- and N-terminal pro-B-type natriuretic peptide: complementary role for risk stratification in acutely decompensated heart failure[38]	52
9	Gheorghiade Mihai, Albaghdadi M, Zannad F *et al.* Rationale and design of the multicentre, randomized, double-blind, placebo-controlled Aliskiren Trial on Acute Heart Failure Outcomes (ASTRONAUT)[22]	43
10	Lainscak M, Blue Lynda, Clark AL *et al.* Self-care management of heart failure: practical recommendations from the Patient Care Committee of the Heart Failure Association of the European Society of Cardiology[17]	42

The two most cited articles are the ESC guidelines for the diagnosis and treatment of acute and chronic heart failure.[2,3] Then, the article that ranks 4th is a state of the art paper regarding the use of natriuretic peptides[4] and that ranking 6th is a large review regarding the biochemistry and physiology of NT-proBNP.[5] Thus, large reviews regarding major topics are the best cited articles of *EJHF*. Their number of citations does not reach the stellar values of the guidelines but is, at least, comparable to it, at about one-third of what they have reached (*Table 1*).

At the 3rd, 5th, and 10th position of the list of the top 10 articles, we have papers regarding the epidemiology and, in two cases, the costs of heart failure.[6–8] The years in which they were published were the years in which the impact of heart failure was not so clear. Those articles and, I might say, *EJHF* itself helped to establish and make clear to the community the importance of this syndrome. The high impact of these articles further shows the importance of having articles based on topics that are broad enough, and likely to be cited in different papers.

Two other articles regard sleep-disordered breathing and cardiac resynchronization therapy (CRT). Sleep-disordered breathing, or sleep apnoea, is still an emerging aspect of heart failure with major trials regarding the potential benefits of its treatment still ongoing. This article showed its high prevalence in a large data base of 700 patients and was among the first to show its importance and relation with heart failure severity.[9] The paper that ranks 7th is a design paper regarding probably the most important trial with CRT, the CArdiac REsynchronisation in Heart Failure study.[10] This finding, that a design paper of a major trial can gather many citations, will be found also in the succeeding paragraphs, when we will consider each year's top 10 most cited articles.

Lastly, the 9th most cited article, comes from an early report of the clinical trials results presented at a recent meeting.[11] The number of citations that this article had was particularly impressive as some of the trials reported there were not published for many years.[12] However, all of this kind of articles, punctually issued by John Cleland after each of these major meetings, were highly cited and gave a major contribution to the initial rise in the impact factor of the journal. It has been discussed whether we should resume such an initiative, but the practice of early online publication of trials by major journals, including ours, has probably made such articles less useful.

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More granularity: guidelines, position statements, reviews, and design papers still among the top 10 cited papers from the years 2011–2013

Tables 2–4 list the top 10 cited papers from the years 2011 to 2013. They allow us more granularity for understanding what makes the impact factor and, ultimately, the success of a journal.

Some findings simply reinforce what is shown by the overall analysis of the most cited papers. Guidelines, consensus statements, and position papers are extremely well cited and represent the backbone of the success of the journal. These articles comprised four,[13–17] two,[2,18] and two[19,20] of the top 10 most cited for the years 2011, 2012, and 2013, respectively.

It is rather impressive to realize how much design papers have contributed to the success of the journal. The results of major landmark trials are often published in the major impact journals. However, the design of such trials still has major interest, either before the trial is accomplished, as they anticipate what are expected as major findings, or when the major results and sub-studies are published. Hence, we have been pleased to find four articles based on trials' design among the 10 most cited articles from the last 3 years.[21–24]

What matters more: different clinical presentations, treatment, devices, biomarkers

HFpEF,[13,19,20,25,26] and advanced heart failure[27–31] are major areas of interest and research. We all hope that this will translate into meaningful progress in the treatment of these conditions.

Most cited articles often cover the treatment of heart failure. Articles related to medical treatment,[18,21–25,31–34] and devices,[28,29,35,36] had major interest. Biomarkers[19,37–42] and epidemiology[13,32,43,44] also represent a major area of research and interest for our journal with 7 and 4 articles, which have ranked among the top 10 most cited articles in their years.

Translational science[41,45,46] and disease management[14,16,17] had three articles each and cardiovascular imaging had two articles[26,47] among the top 10 most cited articles in any of these last years. No most cited article came from the basic research arena. These last results are particularly impressive if we consider that heart failure is a major aspect of basic science and cardiovascular imaging and that the journals focused on

Table 3. List of the top 10 cited articles published in 2012

Rank	Title	Number of cites
1	McMurray JJV, Adamopoulos S, Anker, SD *et al.* ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure 2012P: the task force for the diagnosis and treatment of acute and chronic heart failure 2012 of the European Society of Cardiology. Developed in collaboration with the Heart Failure Association (HFA) of the ESC [2]	486
2	Baldus S, Schillinger W, Franzen O *et al.* MitraClip therapy in daily clinical practice: initial results from the German transcatheter mitral valve interventions (TRAMI) registry [35]	47
3	Goren Y, Kushnir M, Zafrir B *et al.* Serum levels of microRNAs in patients with heart failure [39]	46
4	Lopez-Andres N, Rossignol PI, Iraqi W *et al.* Association of galectin-3 and fibrosis markers with long-term cardiovascular outcomes in patients with heart failure, left ventricular dysfunction, and dyssynchrony: insights from the CARE-HF (Cardiac Resynchronization in Heart Failure) trial [40]	34
5	Zimmet H, Porapakkham P, Porapakkham P *et al.* Short- and long-term outcomes of intracoronary and endogenously mobilized bone marrow stem cells in the treatment of ST-segment elevation myocardial infarction: a meta-analysis of randomized control trials [36]	33
5	McMurray JJV, Abraham WT, Dickstein K *et al.* Aliskiren, ALTITUDE, and the implications for ATMOSPHERE [23]	33
7	Ardehali H, Sabbah HN, Burke MA *et al.* Targeting myocardial substrate metabolism in heart failure: potential for new therapies [18]	29
8	van der Zwaag PA, van Rijsingen IAW, Asimaki A *et al.* Phospholamban R14del mutation in patients diagnosed with dilated cardiomyopathy or arrhythmogenic right ventricular cardiomyopathy: evidence supporting the concept of arrhythmogenic cardiomyopathy [45]	28
9	Gomez N, Touihri K, Matheeussen V *et al.* Dipeptidyl peptidase IV inhibition improves cardiorenal function in overpacing-induced heart failure [46]	27
10	Gotsman I, Shauer A, Zwas DR *et al.* Vitamin D deficiency is a predictor of reduced survival in patients with heart failure; vitamin D supplementation improves outcome[33]	25

Table 4. List of the top 10 cited articles published in 2013

Rank	Title	Number of cites
1	Abudiab MM, Redfield MM, Melenovsky V *et al.* Cardiac output response to exercise in relation to metabolic demand in heart failure with preserved ejection fraction [26]	17
1	Yamamoto K, Origasa H, Hori M Effects of carvedilol on heart failure with preserved ejection fraction: the Japanese Diastolic Heart Failure Study (J-DHF) [25]	17
3	Maggioni AP, Anker SD, Dahlstrom U *et al.* Are hospitalized or ambulatory patients with heart failure treated in accordance with European Society of Cardiology guidelines? Evidence from 12,440 patients of the ESC Heart Failure Long-Term Registry [32]	15
3	Ghio S, Temporelli PL, Klersy C *et al.* Prognostic relevance of a non-invasive evaluation of right ventricular function and pulmonary artery pressure in patients with chronic heart failure [47]	15
5	Dickinson BA, Semus HM, Montgomery RL *et al.* Plasma microRNAs serve as biomarkers of therapeutic efficacy and disease progression in hypertension-induced heart failure [41]	13
5	Maggioni AP, Dahlstrom U, Filippatos G *et al.* EURObservational Research Programme: regional differences and 1-year follow-up results of the Heart Failure Pilot Survey (ESC-HF Pilot) [43]	13
7	McMurray JJV, Packer M, Desai AS *et al.* Dual angiotensin receptor and neprilysin inhibition as an alternative to angiotensin-converting enzyme inhibition in patients with chronic systolic heart failure: rationale for and design of the Prospective comparison of ARNI with ACEI to Determine Impact on Global Mortality and morbidity in Heart Failure trial (PARADIGM-HF) [24]	12
8	Chan MMY, Lam CSP How do patients with heart failure with preserved ejection fraction die? [20]	11
8	Gheorghiade M, Patel K, Filippatos G *et al.* Effect of oral digoxin in high-risk heart failure patients: a pre-specified subgroup analysis of the DIG trial[31]	11
10	Neuss M, Schau T, Schoepp M *et al.* Patient selection criteria and midterm clinical outcome for MitraClip therapy in patients with severe mitral regurgitation and severe congestive heart failure [29]	9
10	Sarma S, Mentz RJ, Kwasny MJ *et al.* Association between diabetes mellitus and post-discharge outcomes in patients hospitalized with heart failure: findings from the EVEREST trial [30]	9
10	Cheng JM, Akkerhuis KM, Battes LC *et al.* Biomarkers of heart failure with normal ejection fraction: a systematic review[19]	9
10	Zarrinkoub R, Wettermark B, Wandell P *et al.* The epidemiology of heart failure, based on data for 2.1 million inhabitants in Sweden[44]	9
10	van Spaendonck-Zwarts KY, van Rijsingen IAW, van den Berg MP *et al.* Genetic analysis in 418 index patients with idiopathic dilated cardiomyopathy: overview of 10 years' experience[48]	9
10	Anand IS, Rector TS, Kuskowski M *et al.* Baseline and serial measurements of galectin-3 in patients with heart failure: relationship to prognosis and effect of treatment with valsartan in the Val-HeFT[42]	9
10	Husebye T, Eritsland J, Muller C *et al.* Levosimendan in acute heart failure following primary percutaneous coronary intervention-treated acute ST-elevation myocardial infarction. Results from the LEAF trial: a randomized, placebo-controlled study[34]	9

these topics rank among the most cited cardiology journals. More simply, it may be that *EJHF* receives less interesting articles about basic science or imaging and, thus, these articles are also less likely to be cited. Any journal must find its main topics and concentrate on them.

In conclusion, being able to look ahead and to publish what is going to become important remains a major challenge. That of *EJHF* has been a success story, to date, and learning from the past may help to build upon this achievement.

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Conflict of Interest

Marco Metra is Editor-in-Chief of the *European Journal of Heart Failure*, which is also a journal of the Heart Failure Association of the European Society of Cardiology.

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