



Úvodník | Editorial

Czech contributions to European cardiology – The *European Heart Journal's* perspective

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A society with tradition

Even when looking from outside, cardiology has an impressive tradition in the Czech Republic. Indeed, the *Czech Society of Cardiology* was already founded on December 13, 1929, i.e. decades before Cardiology became a visible medical specialty in many other countries. As such the *Czech Society of Cardiology* is the second oldest in Europe, just after the *German Society of Cardiology* which was founded in 1927. Of note, the *European Society of Cardiology* was founded only after the Second World War, i.e. on September 2, 1950 after representatives from 14 countries, i.e. Belgium, Denmark, Finland, France, Greece, Italy, The Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom and Yugoslavia had prepared statutes and had elected a provisional Executive Committee that included C. Laubry (France) as Honorary President, Gustav Nylin (Sweden) as President, and D.E. Belford (UK), E. Coehlo (Portugal) and Jean Lenegre (France) as Vice-Presidents.

The first president of the *Czech Society of Cardiology*, acting from 1929–1938 for almost a decade, was Prof. Vaclav Libensky from Prague. In 1933, he organized the first international cardiology congress in Prague. As president, he was followed by 12 eminent Czech cardiologists (Table 1). Most recently, the society is led by Prof. Petr Widimsky (2011–2015), an internationally recognized interventional cardiologist. Of note, Pavel Lukl who presided the *Czech Society of Cardiology* from 1959–1971, was also president of the *European Society of Cardiology* from 1964–1968. Today, the *Czech Society of Cardiology* has 2271 members, 768 of whom are board certified cardiologists. Of

note, with 3500–4000 participants, the annual congress of the *Czech Society of Cardiology* is the largest national medical congress in the Czech Republic, again reflecting the importance of this medical specialty in the country.

The pioneers

Czech physicians contributed early on to modern cardiology. Indeed, Otto Klein (1881–1968) was as much a pioneer of his field as Werner Forssmann, André F. Cournand and Dickinson W. Richards [1,2]. Although forgotten by the Nobel Prize Committee, Otto Klein truly contributed to cardiology, particularly by his seminal paper published in 1930 on the determination of cardiac output using the Fick's principle [3]. At that time, science was dominated by Germany and hence it was natural that he published his work in the *Münchener Medizinische Wochenschrift* in German language. Although he confirmed and importantly expanded Werner Forssmann's work, he was ignored by cardiologists on the other side of the Atlantic and as a consequence also by the Nobel Prize Committee in 1956. Nevertheless, his seminal contribution was re-discovered thanks to the efforts of Shlomo Stern and Jiri Widimsky through their publications in *Cor Vasa* [4], the *European Heart Journal* [1] and later the *Journal of the American College of Cardiology* [2]. In the end, he became a prime example of the difference between impact and influence [5]. Although not cited initially due to the language and impact of the journal his work was published in (the *Münchener Medizinische Wochenschrift* currently has an impact factor of 0.528), he eventually got the recognition he deserved.

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Table 1 – Presidents of the Czech Society of Cardiology

Presidents of the Czech Society of Cardiology	Year
Vaclav Libensky	1929–1938
Klement Weber	1938–1942 and 1951–1955
Stanislav Mentl	1942–1946
Frantisek Herles	1946–1951
Vladimir Haviar	1955–1959
Pavel Lukl	1959–1971 and President of the ESC 1964–1968
Zdenek Reinis	1971–1981
Vladimir Dufek	1981–1990
Vladimir Stanek	1990–1995
Roman Cerbak	1995–1999
Jaromir Hradec	1999–2004
Michael Aschermann	2004–2008
Vaclav Chaloupka	2008–2011
Petr Widimsky	2011–2015

In 1938, due to the increasing oppression of the German Nazi regime that had taken over Czechoslovakia, Otto Klein, as a Jew, had to resign from his chair and soon thereafter had to leave his country as many other bright scientists. As a consequence, research and exchange between scientists and physicians became increasingly difficult during the war and remained so for those living behind the iron curtain for many years thereafter. Czechia was no exception, although it hosted one of the oldest universities, the Charles University in Prague.

Cardiology practice today

Due to the separation of Eastern and Western Europe after the war, the *Czech Society of Cardiology* became an official member of the *European Society of Cardiology* only in 1968. Although this facilitated exchange somewhat, it remained difficult for Czech cardiologists to participate at meetings abroad and to exchange views and knowhow with their colleagues in the West or even publish their work in peer-reviewed journals. After the fall of the Berlin wall and the iron curtain that separated what truly belonged together, this changed rapidly and Cardiology developed impressively in the Czech Republic. Indeed, today there are 11 tertiary cardiac centres with both departments of cardiology and cardiac surgery as well as 1 pediatric cardiac centre. In addition, there are another 11 cardiology centres performing percutaneous interventions and electrophysiological procedures for arrhythmias without on-site surgery. Thus, in each of the 13 counties of the Czech Republic, i.e. regions with 0.3–1.2 million citizens, at least one cardiology centre is available, thus fully covering the needs of the 10.5 million inhabitants.

Of note and in contrast to many other countries, the Czech Republic successfully prevented an inflation of cardiology centres. Indeed, the Czech Ministry of Health,

health care insurance companies (payers), and the *Czech Society of Cardiology* jointly rejected applications of several other hospitals for accreditation in interventional cardiology. Since volume and outcome is closely linked in cardiology and cardiovascular surgery alike [6–8], this was a wise decision which so far was only followed by the French government [9]. In contrast to Switzerland, for instance, where one cardiology centre serves only 246,774 inhabitants, one Czech centre serves 477,273 inhabitants and 676,500 in the Netherlands [10].

This allowed for an increasingly evidence-based practice in cardiovascular medicine at high technical level. Indeed, the total number of cardiovascular procedures in the Czech Republic is impressive with 54,357 coronary angiographies, 22,072 percutaneous coronary interventions (PCI) – which relates to a ratio of 2.5 to 1 of diagnostic and PCI procedures. The number of CABG currently is 3930 which relates to a ratio of 1 to 4.5 compared to PCI. Given the recent evidence that CABG should more consistently be used particularly in 3-vessel disease [11,12], this possibly reflects a relative overuse of PCI as is still current clinical practice in many other countries.

Of note, with 6102 primary procedures for ST-segment elevation myocardial infarctions (STEMI) in the year 2011, the Czech Republic follows the most updated ESC Guidelines in the management of acute coronary syndromes [13,14]. As a consequence, thrombolysis for STEMI was almost abandoned.

Czech cardiologists at the ESC Annual Congress

The Annual Congress of the *European Society of Cardiology* is a true success story. Indeed, since the first congress in 1952 the number of participants as well as abstract submissions and sessions has increased steadily and reached its maximum last year with 32,000 attendees in Paris in 2011. In 2011 in Munich, the annual congress accommodated a total of 27,279 attendees. The largest number of delegates came from Germany, followed by France, Italy, Japan and the U.S. (Fig. 1). A total of 214 delegates came from the Czech Republic, which given its population is an underrepresentation compared to similar countries such as Switzerland (685), the Netherlands (660) and Greece (606).

Overall, of those attending the ESC congress in Munich, 21,440 actively participated in the scientific program as either physicians or scientists, 629 were active press delegates and 5210 were exhibitors. Of note, in 2011 a record number of abstracts (9614) were submitted and a little less than half of them (44%; 4203) were accepted for presentation or as posters. From 2007 to 2012 Czech cardiologists submitted a total of 553 abstracts, 173 of which were accepted (31%) which is a bit less than average.

Key success factors when submitting to the ESC congress

Recently, Winnik et al. [15] analysed over 1000 abstracts submitted to the Annual Congress of the *European So-*

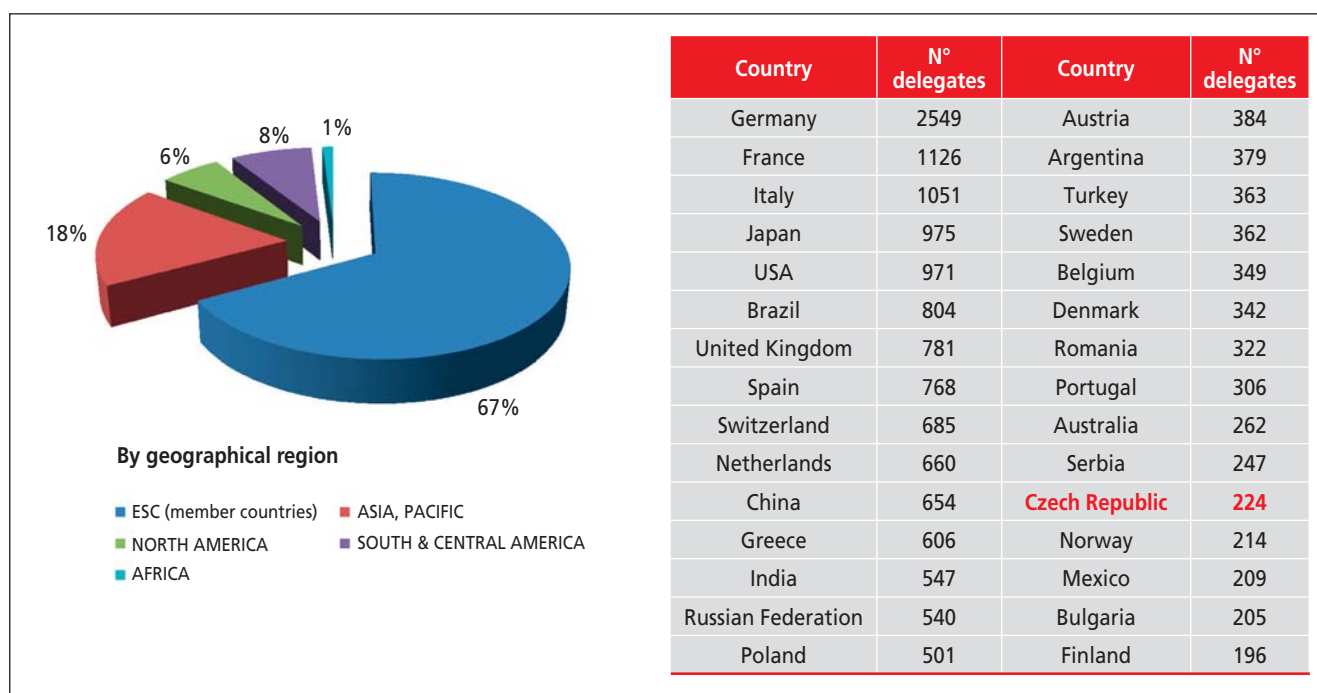


Fig. 1 – Participants at the Annual Congress of the *European Society of Cardiology* 2012 in Munich from 139 countries.

ciety of Cardiology and analysed key success factors of acceptance and future publication over a 4-year period. Of note, the congress programme committee accepted primarily abstracts on basic science, those reporting on 100 patients or more and studies with a prospective and/randomized design. Interestingly, these predictors differed from those anticipating full-text publication which included academic affiliation and gender. The single parameter predicting high citation rates was a randomized study design. Of note, the publication rate of accepted abstracts was 38%, whereas only 24% of rejected ones were published. Furthermore, among the abstracts that were eventually published, those accepted at the ESC congress received more citation than rejected ones.

Czech cardiologists and the *European Heart Journal*

It took the *European Society of Cardiology* 30 years to start their own journal. Indeed, the *European Heart Journal* was launched only in 1980 under the leadership of Desmond Julian followed by Henry Kulbertus, Kim Fox, and Frans van der Werf [16]. Under current leadership with a novel strategy [17], the *European Heart Journal* has grown impressively with currently 3800 submissions per year and an impact factor of close to 10.5. As a consequence the acceptance rate of original research articles has dropped to 11%. However, the current editor-in-chief introduced the manuscript transfer system which allows to transfer excellent manuscripts that are either too specialized and/or just did not make the priority required to the ESC journal family which currently contains 11 products (Fig. 2). The manuscript transfer system allows

authors to resubmit their work in a revised version based on the initial reviews obtained by the *European Heart Journal* to one of the subspecialty journal, provided its editors agreed to the transfer. Typically, around 600 manuscripts are transferred in a year from the main to the subspecialty journals.

Over the last 5 years, i.e. since 2007, Czech cardiologists and cardiovascular scientists have submitted 107 papers to the *European Heart Journal*, mostly *Cardiovascular Flashlights*, but also clinical papers, editorials, current opinions and review articles. Overall the Czech Republic is thus in the middle field of sub-

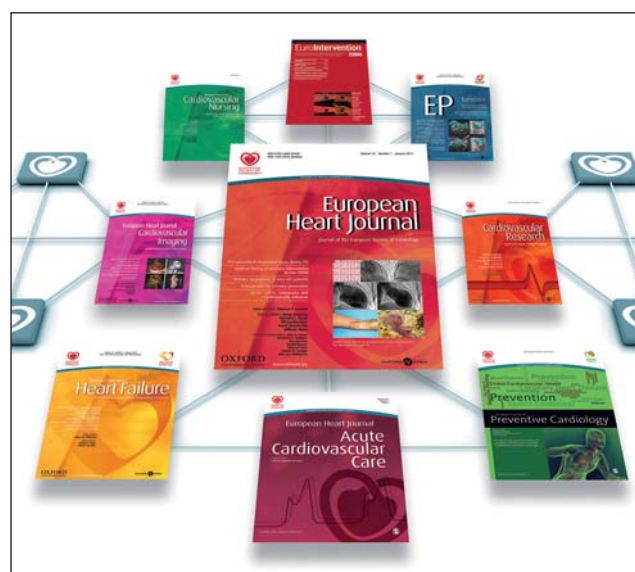


Fig. 2 – The ESC journal family.

mitting countries worldwide; indeed, countries of similar size submit around 60 to 80 papers per year. Of note, the overall acceptance rate was 16.3% which is above average of the current acceptance rate for all manuscript which currently is 11%. Among the different types of articles, acceptance rate was slightly higher for *Cardiovascular Flashlights* (16.7%) than for original articles (16.1%).

A major criterion for the level of interest a publication attracts, is its citation index [18]. For a journal this determines the impact factor and for an author his personal influence within the scientific process. Within the last 5 years, the best cited original research article published by a Czech cardiologist was “Reperfusion therapy for ST-elevation acute myocardial infarction in Europe. Description of the current situation in 30 countries” by Petr Widimsky and coworkers (cited 63 times) followed by another article from the same author on “Clopidogrel pretreatment instable angina: for all patients > 6 hours before elective coronary angiography or only for angiographically selected patients a few minutes before PCI? A randomized multicenter trial PRAGUE-8” (cited 34 times). Indeed, the entire PRAGUE trial family is a success story with 29 papers published and overall cited 940 times in the entire scientific literature.

Perspectives

Thus, looking at it from the outside, the Czech Republic has developed modern cardiology in an impressive manner at the clinical level. At the academic level, the country is productive, but it certainly could – in the tradition of Otto Klein – improve its contributions in clinical, but particularly in basic science further both in terms of absolute number of abstracts and manuscripts submitted as well as acceptance and citations.

How could this be achieved? Good publishing requires an innovative idea, proper design and methodology, appropriate statistics and stringency in writing [19,20]. This requires an academic environment and an optimal research training. With the current economization of medicine and austerity programmes of many governments, this is not always easy to maintain. Here, the *European Society of Cardiology* has an important role with its educational products, i.e. the main and subspecialty congresses and the ESC Textbooks [21], the ESC journal family and their initiatives for the young, i.e. *The Cardiologists of Tomorrow* and the ESC fellowships. Indeed, academic exchange is crucial for the scientific productivity of a country and this should certainly be used much more often in order to open perspectives for the next generation and to nourish running projects upon their return to their home country. What’s valid in politics is also true in European medicine and science: *L’union fait la force!*

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