The Russian Society of Cardiology

Prof. Evgeny Shlyakhto discusses the history, achievements, and ongoing projects of the Russian Society of Cardiology

The Russian Society of Cardiology (RSC) is an all-Russian non-commercial association bringing together experts in cardiology and related disciplines. Currently, there are > 4500 physician members of the RSC.

Among the RSC members are internists, cardiovascular surgeons, endocrinologists, and other specialists interested in cardiovascular diseases. The RSC is developing interdisciplinary approaches and cooperation with related medical specialties. It supports and develops professional communication with the Russian Atherosclerosis Society, the Society of Cardiovascular Prevention and Rehabilitation, Arterial Hypertension Society, and others.

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Events

The Russian National Congress of Cardiology provides cardiologists from all over Russia with an opportunity to discuss important problems of cardiovascular science and clinical practice. Among the Congress speakers are prominent international experts, including Presidents of National Cardiac Societies and representatives of the European Society of Cardiology (ESC). In 2013, physicians from 38 countries took part in the Russian National Congress of Cardiology.

At the annual International Educational Forum ‘Russian Cardiovascular Days’ leading European and Russian experts present clinical cases and monitor interactive debates on new medical technologies and methods. In 2012, 6000–10 000 specialists were watching webcasts of the Forum educational sessions.

In addition, every year > 50 regional and national seminars, conferences, and scientific symposia are held under the auspices of the RSC.

History

The history of Russian cardiology started with the invention of an audible method of blood pressure measurement by N. S. Korotkov, which he announced on 7 November 1905, to the Medical-Surgical Academy in St Petersburg. Theorists and clinicians of atherosclerosis would insist that the works by N.N. Anichkov, published in 1910–12, determined the formation of cardiology as an area in national medicine. The patriarch of cardiology and first president of the International Society of Cardiology, Paul White, associated the beginning of Russian cardiology with the works of one of the founders of electrophysiology A.F. Samoylov. At the same time, in 1910, V.P. Obraztsov and N. D. Strazhesko described a clinical picture of myocardial infarction, and in 1912 N.N. Anichkov published the cholesterol theory of atherosclerosis pathogenesis. These works received international acclaim and became fundamental to the study of heart diseases.

The first professional organization of cardiologists in the USSR was set up in 1963. Gradually, cardiology science schools appeared in different regions of the country. By the 1970s, a large volume of knowledge about cardiovascular diseases had been accumulated and cardiology not only became an independent specialty, but also one of the priorities of national healthcare.

In 2013 the RSC celebrated its fiftieth anniversary. Since its establishment, the organization has changed its name several times, but has always aimed to fulfil its mission ‘to assist in the development of healthcare, science and clinical practice to reduce cardiovascular mortality’.

At present, the RSC consists of 29 sections and 3 working groups and has 43 representations in various Russian territories.
Publications

Russian Society of Cardiology publishes the ‘Russian Journal of Cardiology’ and newspaper ‘Cardiology Today’. Russian Journal of Cardiology is a scientific and practical peer-reviewed journal for cardiologists and internists that has been published since 1996.

The newspaper ‘Cardiology Today’ covers the most important research and social projects and events in different regions of Russia. It also provides a platform for discussion of problems and achievements of Russian cardiology.

Education and scientific research

Russian Society of Cardiology develops programmes for life-long medical education together with the Russian Ministry of Healthcare. The Society supports young researchers and holds events to improve the qualification of medical specialists.

Russian Society of Cardiology also provides grants for young cardiologists to give them an opportunity to take part in the European Congress of Cardiology and other Russian and international events. In addition, it encourages young specialists to participate in an international project ‘Cardiologists of the Future’.

Russian Society of Cardiology members can take part in distant educational programmes free of charge and receive the RSC certificate, which is included into the unified all-Russia database of certificates.

Russian Society of Cardiology plans to integrate its online programmes with the ESCeL educational web platform of the ESC.

The Society is closely linked to large research centres in Russia to realize the concept of integration between education and science on the basis of translational medicine.

International co-operation

Russian Society of Cardiology represents Russian Cardiology in the international arena, assisting in the development of international scientific contacts and the promotion of Russian Cardiology achievements.

Since 1993, RSC has been a constituent member of ESC. Since 1994, RSC has been registered in the World Heart Federation.

Russian Society of Cardiology aims to integrate into the European cardiovascular community and international scientific network. Among its goals are uniting the approaches of Russian and European cardiology societies, as well as joint scientific research and educational initiatives.

Russian Society of Cardiology participates in joint European research projects, works on registries of the most common cardiovascular diseases, and cooperates with the ESC in prevention and rehabilitation. Russian specialists regularly take part in Congresses and other events of the ESC, both as speakers and as part of the audience.

Development of National Guidelines

Russian Society of Cardiology is involved in the development of National and translation of European guidelines. Russian Society of Cardiology also works on introducing guidelines into clinical practice.

Russian Society of Cardiology takes part in the development and introduction of educational standards for cardiologists and related specialists, and develops protocols and standards for providing cardiovascular services in Russia.

Texts of approved guidelines are available on the RSC website: http://www.scardio.ru/rekomendacii/rekomendacii_rko/.

Social projects

Russian Society of Cardiology focuses on raising the awareness of a healthy lifestyle and providing information about cardiovascular prevention.

The all-Russia educational initiative ‘Healthy Hearts’ was jointly realized with public and political organizations. Educational seminars for cardiologists were held, and educational events and free preventive medical investigations for citizens were organized in 23 Russian cities.


The long-term educational initiative of the Russian Society of Cardiology is ‘Museum of Heart’. It combines education and entertainment, helps to teach heart anatomy in an easy way, and tells children and teenagers how to keep their hearts healthy. ‘Museum of Heart’ follows the tradition of interactive museums, which are popular in many countries. The objects on display can be touched and played with. Many objects have been developed specially for the Museum of Heart.

Evgeny Shlyakhto FESC FACC
Personal experiences of émigré cardiologist: Patrick T. Siegrist, MD

A Swiss cardiologist rises to the challenge in the land of the rising sun

Patrick Siegrist MD was born in Switzerland and qualified as a cardiologist at the University of Zurich. He is currently working in the Department of Advanced Cardiovascular Therapeutics at Osaka University, Japan, as a specially appointed fellow in interventional cardiology. His project areas include imaging-guided percutaneous coronary intervention and chronic total occlusion.

While many post-doctorates seek overseas fellowships, few will go as far as Siegrist to broaden their personal and professional horizons. Despite having no family or professional links to Japan, Siegrist had a fascination for the Japanese language and culture as a result of an earlier visit. He also knew that Japan had an abundance of world-renowned medical centres performing high-level research, as well as advanced medical engineering and device companies, making it an ideal place for an aspiring cardiologist.

Finding an opening was not easy, however, and Siegrist's early attempts to seek information were thwarted by a lack of language skills. 'When I started to search the internet, I realised I wouldn’t get very far because all the detailed information was in Japanese'. After quizzing friends and colleagues, he came across a Swiss radiologist who had completed a fellowship in Japan some years earlier. This fired his enthusiasm and he took advantage of the radiologist’s invitation to join him on a trip to Osaka. During the trip in October 2010, the two Swiss doctors visited Osaka University Hospital and made the acquaintance of interventional cardiology Prof. Shinsuke Nanto who proposed associate Prof. Satoru Sumitsuji—a very active interventional cardiologist specializing in complex percutaneous coronary intervention (PCI) and imaging guided PCI—as a mentor.

As the first overseas cardiologist to seek post-graduate interventional training at the University of Osaka, Siegrist faced a number of obstacles; not least, the fact that the Japanese system does not recognize foreign medical licences. With his mentor’s support he was able to obtain a temporary licence and move things forward. He was particularly enthusiastic about the University Hospital in Osaka, as it not only has a leading role in the development and implementation of complex cardiovascular interventions, but also contributes to high impact research. When Siegrist eventually accepted the ‘great honour’ of a special fellowship under the supervision of associate Prof. Sumitsuji, he looked forward to becoming integrated in clinical and academic work as well as building new networks with fellow professionals.

Having overcome immigration formalities, he was anxious to prepare himself to cope with the new language and culture and undertook a 3-month course in Japanese before taking up his position—a decision which proved wise. ‘Although the Japanese are very open and friendly, it is virtually impossible to establish yourself outside the major international cities without the help of English-speaking friends, co-workers and the university office for foreign student affairs. Basics such as finding a place to live, opening a bank account and dealing with immigration issues are only possible through the medium of Japanese’.

Initially, at work, he was able to use English and establish good working relationships with colleagues. Step-by-step he was introduced to the local style of PCI, which was quite different from what he learned in Switzerland. While the caseload was lighter than back home, cases were generally more complex and included the use of a number of different imaging methods for almost every patient. Pre-procedural CT scans are the norm with the intervention being planned accordingly and potential risks of plaque characteristics, calcification, occluded segments, etc. assessed. Furthermore, each PCI is guided by intravascular ultrasound.

Patrick Siegrist believes Osaka University Hospital is a good place for an interventional cardiologist as it focuses on image-guided PCI for complex interventions/CTO revascularizations (ante-grade and retrograde approaches). The success rate for chronic total occlusion (CTO) revascularization is globally and nationally very high.

Owing to Dr Sumitsuji, Siegrist also had the opportunity to visit many hospitals in Japan and abroad. He has also observed and assisted in numerous interesting and highly complex interventions and actively contributed to workshops at other centres as well as...
Echocardiographic assessment of the right ventricle

Which is the best echocardiographic method to assess right ventricular anatomy, function, and pathology?

Comprehensive evaluation of the right ventricle is critical, said Stamatios Lerakis, at the EuroEcho Imaging Conference, Atlanta, USA, December 2013. Right ventricular (RV) function is strongly associated with clinical outcomes in patients with heart failure and/or pulmonary vascular disease. The RV is a complex structure and comprehensive evaluation of the RV is critical.

Advances in echocardiography have resulted in the development of multiple techniques that improve the assessment of RV function. Today a variety of echocardiographic (echo) RV parameters can be measured routinely and can be used for diagnostic purposes, to decide about therapy and to follow the response or lack of response to therapy.

The right atrium is an important contributor to RV function and the right atrial area measured by echo can predict adverse outcomes in the setting of primary pulmonary hypertension.

Echographic evaluation of the morphology of the RV can provide significant clues about different pathological conditions such as idiopathic pulmonary hypertension, acute pulmonary embolism, and arrhythmogenic RV dysplasia. Just inspecting the morphology of the RV can assist in treating acutely critically ill patients. Changes in the shape of the left ventricle during the cardiac cycle seen on echo can also provide information about the haemodynamics in the right ventricle.

Two-dimensional and Doppler echo can be used to non-invasively determine systolic, mean, and diastolic pulmonary pressures as well as estimate the pulmonary vascular resistance with good correlation to measurements obtained invasively.

Parameters for quantitative assessment of overall systolic function include fractional area change, RV ejection fraction, and myocardial performance index.

Three-dimensional (3D) echo measurements of RV volumes and RV function correlate well with measurements obtained by cardiac magnetic resonance (CMR) imaging, which is considered the gold standard for the comprehensive evaluation of the RV.

Regional methods of the quantification of RV function include tricuspid annular plane systolic excursion and tissue Doppler imaging of the tricuspid annulus. Each of these techniques has its advantages and its limitations and both are associated with prognosis and should be followed on an individual basis to assess response or not to a particular therapy.

Strain and strain rate for the assessment of RV myocardial motion are currently available to image with echocardiography, using tissue Doppler and speckle-tracking techniques. These techniques can detect early RV problems that cannot be seen with the naked eye.

Similar to the evaluation of the diastolic performance of the left ventricle we can assess the diastolic function of the RV using the tricuspid inflow velocities and the tissue Doppler imaging information as well as the right atrial size and the inferior and superior vena cava flows.

Echocardiography is very valuable for the evaluation of complex congenital diseases that very often affect the right heart, which is beyond the scope of this article. But it should be mentioned that echocardiography is a very useful tool for the evaluation of isolated intra-cardiac shunts and for accurately determining pulmonary and systemic flows and the Qp/Qs ratio.

Exercise-induced pulmonary artery systolic pressure increase by means of stress Doppler echocardiography may suggest RV contractile reserve and a better prognosis in patients with severe pulmonary hypertension and right heart failure.

With the continued progress in technology, such as advancements in 3D echo imaging, and the further clinical application and validation of myocardial deformation techniques such as strain and strain rate, the assessment of the RV will continue to get better.

Because of its portability, echo will continue to be the main imaging modality for evaluating the RV and, now, there is no longer any reason for the RV to be the forgotten ventricle.

Jennifer Taylor MPhil
Controversies in acute cardiovascular care

Arguments for and against the statement ‘Dual antiplatelet therapy should be started in the ambulance for STEMI patients’

**Protagonist view: Kurt Huber (Austria)**

European Society of Cardiology (ESC) Guidelines of the last 3 years have dealt with the use of dual antiplatelet therapy in patients with acute coronary syndromes and in particular with STEMI. Thereby, the new P2Y12 inhibitors have been recommended as first-line therapy over clopidogrel in addition to aspirin and an anticoagulant (usually unfractionated heparin or the low–molecular-weight heparin enoxaparin).  

The pre-hospital use of these agents has not been specifically addressed, but the guidelines recommend starting dual antiplatelet therapy as soon as possible, which offers in theory the opportunity to initiate a combined antiplatelet strategy before arrival at the hospital. Clinical evidence for such a strategy, however, exists only from few trials with relatively low-patient numbers that are summarized in a recent meta-analysis, and has so far not been investigated in a prospective randomized controlled fashion.

Recently, it has been shown in observational studies and in the mentioned meta-analysis (including RCTs, observational analyses of RCTs, as well as observational studies) in STEMI patients, that pre-treatment with clopidogrel is beneficial in comparison with clopidogrel use in hospital only in terms of a reduction of major ischaemic coronary events, but that there is usually no benefit with respect to all-cause mortality (as an exception there was a mortality benefit for pre-treatment, see the study of Döerler et al. or major bleeding.

No data exist for prasugrel with respect to pre-hospital use although many STEMI networks recommend the pre-hospital use of prasugrel. In contrast, ticagrelor is currently investigated in the prospective controlled prospective ATLANTIC trial with respect to its early pre-hospital vs. its in-hospital use. Outcome data are expected at the ESC annual meeting in Barcelona 2014 at the earliest.

Until then and because of current knowledge, a pre-hospital start of P2Y12 inhibitors in STEMI patients is furthermore recommended, whereby the choice of the respective agent (best data exist for clopidogrel at the moment) should be at the discretion of the respective networks.

**Contra view: Stefano De Servi (Italy)**

Although guidelines recommend the use of P2Y12 inhibitors in ST-elevation myocardial infarction (STEMI) patients, the exact time of administration remains unknown. This is due to the lack of specific large randomized trials, particularly in patients treated with primary percutaneous coronary intervention (PCI).

A recent meta-analysis shows that pre-treatment with clopidogrel improves outcome in STEMI patients. However, the great majority of patients included was randomized in the Clarity-PCI trial, in which all patients undergoing PCI had been treated with fibrinolysis at a median of 3 days before coronary interventions.

In the primary PCI setting, two relatively small trials have failed to show any advantage from an early administration of clopidogrel both in terms of the initial coronary patency rate and in signs of effective myocardial reperfusion (assessed as ST-segment resolution or the myocardial blush grade after mechanical recanalization).

An additional rationale for early administration of clopidogrel is the slow onset of action of this drug that may expose patients to the risk of acute stent thrombosis. However, the new potent P2Y12 receptor antagonists have a faster anti-aggregating effect than clopidogrel and very few acute stent thromboses have been observed following their use in STEMI patients undergoing primary PCI.

Although early, in-ambulance administration of dual antiplatelet therapy is an attractive hypothesis, there is no demonstration so far that this strategy would lead to a better myocardial reperfusion than giving these drugs at the time of primary PCI.

*Jennifer Taylor MPhil*

**References**


**Book Review**

**Heart Failure: Second Edition**

Marc J. Semigran and Jordan T. Shin (Editors)

CRC: Press


Hardcover

Pages: 648

The prevalence of heart failure is increasing, thereby representing a major healthcare challenge. In spite of the considerable advances in pharmacology and device therapy, mortality and morbidity due to heart failure remain high. Therefore, further promotion of education and research on this timely topic is needed.

*Heart Failure: Second Edition* consists of 26 chapters, each providing a comprehensive review of a relevant aspect of heart failure, written by renowned experts in the field. As the title implies, the editors aim to cover the whole spectrum of heart failure—from embryology to palliative care—with a special focus on basic physiological and molecular principles.

The first part of the book covers issues such as available animal models of heart failure, which may not only address scientifically interested clinicians but also basic scientists. In the second part, pathophysiological mechanisms are discussed, followed by part III focusing on epidemiology, diagnosis, and monitoring of heart failure. Chapters on treatment strategies form the fourth part of the book, while part V provides an outlook on the promising approach of gene therapy.

As an excellent feature, all chapters offer numerous references (even >300 in some cases), giving the reader the opportunity to further delve into the topic. In view of the fact that the book has a certain scientific complexion, it might have been interesting to include additional chapters on the future of heart failure treatment such as implantable haemodynamic sensors and other devices. The broad spectrum and the complexity of certain topics make this book a stimulating read which would be even more appealing if the figures were slightly more consistent and didactic.

Finally, *Heart Failure: Second Edition*, edited by Marc J. Semigran and Jordan T. Shin, is a book for clinicians and scientists who not only seek recommendations on heart failure treatment but also look for deeper insights into the molecular mechanisms and the pathophysiology of this challenging syndrome.

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