

# A Voice for Europe's Arrhythmia Patients

In 2013, the European Heart Rhythm Association (EHRA) celebrates its 10th anniversary with one of its founding members as President, Professor Angelo Auricchio, MD, PhD. Italian-born, Auricchio is director of the clinical electrophysiology (EP) unit at the Fondazione Cardiocentro Ticino, in Lugano, Switzerland. His interest in EP stems from his university studies and led to his election as President of EHRA. Heartbeat spoke to him in Lugano to discuss EHRA, EP, and the treatment of arrhythmic patients in Europe.

By Claudia Flisi  
Photos: Claudio Bader

**Since 2013 marks the EHRA's 10th anniversary, please tell us something about this organization and your involvement in it.**

The EHRA started with the merger of two European Society of Cardiology (ESC) working groups: one focused on arrhythmia, the other on cardiac pacing, in which I was involved at the time. The two groups came together in 2003, creating a single, strong scientific entity advocating the best treatment of arrhythmia patients in Europe and advancing the fight against sudden cardiac death (SCD). Since then, the EHRA has been a great success story. Its undisputed leading role at European and international level is

demonstrated by the steady growth of membership, by the high quality of much diversified educational portfolio, and last but not least, by its increasing ability to lobby national governments and EU institutions to tackle inequalities in access to proven, life-saving, and affordable therapies.

My personal involvement in the EHRA goes back to 2005, when I have been asked to chair the Scientific Initiatives Committee; subsequently, I have been requested to chair the Scientific Documents Committee, and finally in 2009 I joined the EHRA Executive Board as President-Elect. Since 2011 I have the honor and privilege of serving as President of

the Association. My mandate runs out in June 2013 during the EHRA 2013 congress; however, I will continue to support the EHRA Executive Board in my capacity as Past-President until June 2015.

**When did you start working in EP?**

My interest in electrophysiology began in 1985, as I was finishing my university studies in Italy and becoming ever more interested in EP. Pacemaker implantations were already available, but most treatment of arrhythmias was based on pharmacology. Only a few centers were working on catheter ablation; one of the largest of these was in Hannover, Germany. I went there, not speaking a word



Professor Angelo Auricchio's presidency overlaps with the 10th anniversary of EHRA.

of German, and spent around three-and-a-half years working on this treatment. Around 1989 and 1990, I was involved in a project concerning the hemodynamic effect of arrhythmic conditions and pacemaker therapies. The outcome of this project represented the physiopathological basis for a breakthrough therapy – cardiac resynchronization therapy – for patients with advanced heart failure and ventricular dyssynchrony. At that point, I was viewed as one of the European fathers of such therapy. Since then, most of my pre-clinical and clinical research activity has been devoted to the investigation of the effect of cardiac resynchronization therapy (CRT) and in establishing

CRT as standard therapy for heart failure patients. More recently, I have been completing the pre-clinical and clinical experience by using computer modeling and simulation to understand patient-specific substrate and to improve outcome.

**What is the role of EP within clinical cardiology? Why is it such a rapidly growing field?**

Electrophysiology is playing a progressively greater role in clinical cardiology. Its growth is the result of a combination of factors: First, as the population is getting older and the number of people over 65 years of age is increasing, atrial fibrillation, heart failure and ventricular arrhythmias

are becoming more frequent. All of these diseases can be very effectively treated by electrophysiologists.

The inability of antiarrhythmic drugs to satisfactorily control patient symptoms and the frequency of arrhythmia recurrence created the need to look for alternative non-pharmacological treatments. A breakthrough came in the early 1990s with the ability to cure some arrhythmias, such as Wolff-Parkinson-White, atrioventricular node reentrant tachycardia, and cavo-tricuspidal isthmus-dependent atrial flutter, using radiofrequency catheter ablation. Since then, catheter ablation has been applied to treat nearly all known cardiac arrhythmias.

A further breakthrough came in the late 1990s: the ability to treat heart failure in a way, and with an effectiveness, that had previously not been possible with drugs alone. With resynchronization therapy, a device implanted by electrophysiologists, heart failure patients were able to leave the hospital and enjoy life again after implantation.

Last but not least is the implantable cardioverter defibrillator (ICD). In the mid-1990s, several large, randomized controlled trials definitely proved that ICD was the most effective treatment for those patients who are at high risk of dying suddenly.

**One major undertaking of the EHRA is its annual publication of the White Book, describing the current status of major treatments of heart rhythm disorders in ESC member countries. This covers treatments such as Implantable Pulse Generators (IPGs), Implantable Cardioverter-Defibrillators (ICDs), Cardiac Resynchronization Therapy (CRT), and Catheter Ablation Procedures. What made you decide to undertake such a huge project?**

The White Book project began in 2008, thanks to Professor Panos Vardas, the current President of the ESC. At that time, he was President of the EHRA. He wanted to have an understanding of what was being done in the electrical treatment of arrhythmias in Europe. His starting point was sending a series of questionnaires to working groups at the national level. These included questions on EP procedures, infrastructure, guidelines, and training. They were also a means of identifying gaps between countries. The EHRA then compiled this information into a monograph. Today, this annual effort is supported by the healthcare industry. One of the things I asked myself when I began my term as President was, "Can we use this data to look at trends?" This prompted us to generate a document, supported by Siemens and Biotronik, that examines the use of cardiac implantable electronic devices and availability of EP infrastruc-

ture in the ESC member countries. It is a snapshot of data, but also a trend analysis and identification of treatment gaps. This is the very first time we have something like this at the EU level. Both the WHO and the European Union are now using our report. When I visited Siemens headquarters in July 2011, in my capacity as EHRA President, I presented our educational program, our activities, and also our White Book. Tom Miller, then CEO of the Customer Solutions Division at Siemens Healthcare, was very impressed by all of them.

*"We want to offer the best education to European physicians."*

**Could you elaborate on the importance of your educational and training programs?**

Education is one of our key activities. We want to offer the best education to European physicians and we want to offer a diversified portfolio, which covers the needs of general practitioners with interest in arrhythmias, cardiologists, young electrophysiologists, experienced operators, and allied professionals. The EHRA wants to provide its youngest colleagues, the next generation of electrophysiologists, with class-leading educational courses and theoretical knowledge as well as training opportunities throughout the EHRA Fellowship Training Program. The EHRA selects, on a very competitive basis, the fellows who most merit, and choose the centers where they will work. They receive one- or two-year educational grants. In addition to help from the industry, Siemens also provided generous support. This year was a record, with 80 fellows applying for the grants. However, we could only accept about one quarter of them. The majority of applicants came from countries in Eastern Europe.

**Where else do you offer general education programs?**

We offer a variety of educational programs in a range of locations. These include the European Heart House, in Southern France (ESC headquarters); Vienna, which offers the easiest access for applicants from Eastern Europe; as well as Alexandria, Egypt, for North African physicians. This year, 2013 is the first year in which we are also offering programs in Russian, held in Vienna. We know that many doctors face a language barrier, so we organized this two-day course and are promoting it with a website, also in Russian.

Since 2010, the EHRA made a strategic decision to move closer to doctors in their own locations, not just offering courses but also significantly increasing its remote learning educational platform by launching the EHRA/ESC eLearning (ESCeL) platform and webinars. Both of these educational products have been a great success, demonstrated by the several hundred participants attending each of our webinars, and by the large number of visits to the EHRA/ESCeL platform.

**What is the Eastern Countries Initiative?**

Our research tells us that electrophysiological procedures including device implant rates vary significantly across Europe. It is an issue that cannot be addressed in the same way in every country. In Eastern-European countries, lack of infrastructure and appropriate training is one problem; and lack of awareness about therapies for arrhythmic disorders is another. Let me give you some examples. In Bosnia and Armenia, there is a huge lack of state-of-the-art diagnostic equipment and modern treatment capabilities. The situation is slightly better in Belarus and Ukraine; although in these countries the gap between its healthcare infrastructure and that of the EU is large. In these countries there is the additional need of better trained electrophysiologists and allied professionals, but more importantly the need of a better reimbursement for

electrophysiological procedures. Finally, nearly all of these countries lack a more effective patient referral and awareness about non-pharmacological therapies of arrhythmic disorders and the effectiveness of these therapies compared to traditional drug therapy. This is where we can step in. As the EHRA, we can talk to health ministers and local authorities alike. We attempt to raise their awareness of the problems, and to offer solutions. We try to advise them of the importance to allocate proper budget to building infrastructure, to quantify the need of human resource allocation, to set sufficient budget for education and training of professionals, and to consider public awareness activities.

#### How are training and infrastructure related?

The lack of proper infrastructure is a key obstacle to accessing healthcare. The efficient use of that infrastructure is a further consideration. Indeed, it does not matter how many Ferraris you have in your garage, you have to know how to drive them. In the case of EP, it is not only the number of centers that is important, it is also the training of the doctors, nurses, and technicians who work in them. You also need high-tech equipment that can help you accomplish what you need to do. Indeed, a regular driver's license is not

enough to drive a Formula One Ferrari. You also need to gain the appropriate racing license. Today, EP is very high tech. It requires EP labs with advanced cardiac imaging, interventional angiography, but also magnetic resonance and computed tomography imaging, and a high level of image and system integration, as well as trained staff to operate the equipment and infrastructure. Our fellowship program and providing training in different locations are some responses to these challenges.

#### What are the greatest challenges for EHRA?

In the current economic climate, affordability, and sustainability of arrhythmia treatments are key. While we see growth in the technologies that support our work and significant innovations in medical devices, the economic situation in Europe means that the already underfunded electrophysiological activities will be in more jeopardy in the near future. Access to healthcare and proven therapies will certainly worsen. The use of cardiac ablation therapy or implantable electronic devices indeed has significant upfront costs; however, the benefits of such treatments would become clearly apparent after several years. Here, we have a disconnection between the medium-to-long-term healthcare benefit and the view of decision-makers or healthcare managers,

whose time horizons are on the short term. This is our greatest challenge to overcome. This is where the EHRA is working its hardest, continuing our fight against the general misperception about high treatment cost of arrhythmias. The EHRA will continue to promote the use of proven, cost-effective life-saving therapies or treatments, which improve the quality of life of arrhythmic patients, and discourage the inappropriate use of therapies.

Another great challenge is the large diversity of healthcare systems in Europe. The EHRA will work in reducing inequality to access to healthcare and in defining the minimum standard in the treatment of arrhythmias in European countries. These are very ambitious goals, which may need a length of time and hard work.

#### What is important for the EP lab of the future? How will it look?

We need better imaging and medical technologies that improve procedural planning, enable us to deliver patient- and substrate-specific treatment, provide better outcome and larger outcome consistency across population, allow significantly reduce procedural time, and show greater consistency in investigational time independently of operator experience without adding significant cost to the procedure. In this ideal scenario, computer modeling and patient-specific computer simulation may play a major future role in the understanding of the mechanism involved in the to-be-treated arrhythmic disorder and in virtually testing different treatments. Along this line, the use of the EP equivalent of a flight simulator may be a very welcomed innovation.

**Author:** Based in Italy, Claudia Flisi writes about science, technology, business, and culture for the International Herald Tribune, various airline magazines, and many publications in English, Italian, and French.



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