Far from feeling threatened by the advent of new technologies such as magnetic resonance imaging and computerised tomography, Dr Petros Nihoyannopoulos, professor of cardiology at Imperial College, London, United Kingdom, feels extremely confident about the ongoing role of echocardiography in cardiology; he believes it still has not peaked, despite having existed for more than 50 years. He says, "Over the past 5 years, we have seen an explosion of new echo technologies that put echocardiography into the uncharted territories of myocardial perfusion and deformation imaging. Using intravenous contrast agents, assessment of myocardial perfusion may be obtained at the same time as myocardial function, at a fraction of the cost of the more traditional nuclear techniques and without the high cost of radiation." An example of a contrast-enhanced echocardiogram is shown in the Figure. He continues, "Three-dimensional echocardiography is now a reality, producing some breath-taking pictures, both transthoracically and transoesophageally. That helps surgeons to have a much clearer view of the valve pathology so that they can apply the best surgical technique to repair it."

Echo represents the most established imaging modality—most, if not all, cardiac patients will have one at some stage. "The real concern," says Dr Nihoyannopoulos, "is how the other imaging modalities will integrate into diagnostic pathways for these patients, as they are expensive and largely overlap with what echocardiography and coronary angiography have been doing for many years." He adds that the specific role of these other modalities in European cardiology awaits determination. "These are new and exciting imaging modalities when performed by experts, but none has been truly validated with clinical outcomes."

Dr Nihoyannopoulos became president of the European Association of Echocardiography (EAE) in 2006. The association began in 2003 and stemmed from the European Working Group on Echocardiography of the European Society of Cardiology. It exists to promote excellence in clinical diagnosis, research, technical development, and education in cardiovascular ultrasound in Europe. The association has almost 1000 members, and its numbers are growing fast.

Dr Nihoyannopoulos discovered the diagnostic powers of echocardiography during his medical training, whilst on a 3-month elective in paediatric cardiology at the New York Hospital/Cornell University Medical College, New York, NY. On his return to medical school in Strasbourg, France, at the Université Louis Pasteur, he found an old, underused M-mode echocardiograph and decided to undertake his MD thesis on the M-mode diagnostic signs of pulmonary hypertension.
After qualifying in 1979, Dr Nihoyannopoulos went on to train in cardiology at the Hammersmith Hospital in London, United Kingdom. There, he began performing standardised echocardiographic examinations. He also introduced the idea of image storage and set up a database for all echocardiographic studies undertaken at the hospital. It became clear to him then that accurate imaging of the heart provided the key to determining the most appropriate therapeutic strategies, and that echocardiography could provide exactly this.

However, during his presidency of the EAE, which runs until the end of 2008, Dr Nihoyannopoulos hopes to find a niche for each imaging modality. He aims to establish diagnostic pathways and guidance on which imaging modality should be used to investigate specific problems in each cardiac condition.

The dialogue has already begun, with a fledgling council of cardiovascular imaging forming under the auspices of the European Society of Cardiology, where each modality has a stake. The council plans shortly to meet for the second time, and, as one of its first aims, it intends to undertake a survey of imaging departments across Europe to see how they operate, who operates them, and how examinations take place.

A pan-European accreditation programme for echocardiography represents a more immediate goal for Dr Nihoyannopoulos and the EAE. Using experience that he had gained from his work at the British Society of Echocardiography, which established a unified national training scheme in the discipline with an exit examination leading to voluntary accreditation in 1994, Dr Nihoyannopoulos introduced the concept of European accreditation to the EAE when he served as the organisation’s secretary. The first personal accreditation examinations took place in 2003. “Before that,” he says, “echo was a toy for many junior doctors who were largely self-trained. Today, we have European accreditation processes for transthoracic echocardiography, transoesophageal echocardiography, and for congenital heart disease.”

But Dr Nihoyannopoulos also stresses the importance of laboratory accreditation. Whereas some countries already have robust accreditation in place—for example, Italy, Romania, and the United Kingdom—most do not. “Echo is a laboratory-based investigation that needs certain minimum standards,” he explains, but it also requires higher standards for advanced laboratories that undertake research, development, and teaching, in addition to the day-to-day clinical routine. The past year has seen the publication of minimum and advanced laboratory standards. “Our publishing these standards should help to homogenise the quality of echocardiography across Europe,” he says.

Some of the issues laboratory accreditation will tackle include optimal space, the duration of echo examinations, the quality of reports, image storage, and quality control in general. The first laboratories are likely to receive accreditation next year. Dr Nihoyannopoulos admits that introducing accreditation has caused some controversy, but he says that his colleagues have now accepted it, and he has no doubt that it will guarantee quality for patients and also for teaching and research. Indeed, other subspecialties, such as electrophysiology, have followed the EAE’s lead and are introducing their own accreditation programmes.

Dr Nihoyannopoulos sums up his enthusiasm for his speciality: “Echocardiography is so much more than just a sophisticated imaging technique. It has become an integral part of the routine assessment of the cardiac patient, because of the enormous amount of information that it provides, unparalleled by any other imaging methods, at a fraction of the cost. We are living in a cost-minded society now, with the cost of health care ever increasing. Echocardiography will be used to better assess which patients can benefit from some of the very expensive treatments that are now available.” He concludes, “It is, however, important to identify diagnostic pathways so that information is not duplicated unnecessarily and is obtained in the most cost-effective way.”

Monika Polak is a freelance medical writer.

References


The opinions expressed in Circulation: European Perspectives in Cardiology are not necessarily those of the editors or of the American Heart Association.
The golden days for Greece as a country with a low risk of heart disease, second only to Japan, have long passed. Yet, this has been a difficult message to get across to Greek doctors, let alone the country’s population of 10.7 million. Dr George K. Andrikopoulos, special science advisor to the Hellenic Heart Foundation, says, “Many physicians and most of the population still think cardiovascular disease is a problem of northern Europe and not of Greece.” He explains, “The fact is, we did not pay enough attention to cardiovascular prevention during the 1970s. Now, our cardiovascular risk is higher than in Italy, France, and Spain. The incidence of myocardial infarction is still increasing in Greece, while it is decreasing or stabilising in other European countries.”

Dr Andrikopoulos stresses, “Unless serious preventive measures are undertaken on a nationwide scale, mortality and morbidity from cardiovascular diseases, as well as associated socioeconomic costs, will rise in the coming decades. This prediction is despite the advances in therapy for cardiovascular disease and the fact that the majority of the population has access to adequate health services.”

In addition to working with the Hellenic Heart Foundation, Dr Andrikopoulos practises as a consultant cardiologist at Evangelismos Hospital, Athens, Greece. He also serves as president of the Working Group of Prevention of the Hellenic Cardiology Society.

Figure 1 shows the current prevalence of major cardiovascular disease risk factors in Greece, with data drawn from the ATTICA study, which involved a population of 3042 people. Attica is a province of Greece that includes the capital city of Athens. Figure 2 displays data from a large-scale prevention programme organised by the Hellenic Heart Foundation, with a population of 29,519. That population had a prevalence of diabetes mellitus of 9.4%. Furthermore, in the Hellenic Infarction Observation Study, a countrywide registry of patients who have had acute myocardial infarction, 31% of that population had diabetes mellitus. Dr Andrikopoulos comments, “We found, surprisingly, that one third of the post–myocardial infarction population is diabetic—it is one of the highest rates in the industrialised world.”

The Foundation

Pavlos K. Toutouzas, MD, FESC, established the Hellenic Heart Foundation in 1991; he still serves as director of the foundation. Its main support comes through donations from members and friends. Dr Toutouzas has served as professor of cardiology of Athens University and director of the cardiac department of Hippokration Hospital in Athens for 19 years. He is now emeritus professor of Athens University.

A cardiologist may have created the organisation, but its power comes not only from the medical profession but also from the members and friends of the foundation who support and finance its activities.

As a main objective, the foundation works to prevent cardiovascular diseases at the population level through education campaigns. The foundation provides scholarships to young...
cardiologists, and it organises lecturers and meetings that aim to improve prevention and management of cardiovascular diseases. One such meeting, the 21st International Congress on Clinical Cardiology, took place in April 2006 and drew 1000 general practitioners and cardiologists.

The foundation plans to establish a cardiovascular research centre focused on prevention of cardiovascular disease, and it has already purchased a large area of land outside of Athens for the laboratory. Dr Andrikopoulos says, “We have not yet been able to start building the facilities. This is partly for financial reasons and partly because of the inflexible laws that regulate the activities of nongovernmental organisations in our country.”

Prevention Programmes
Every year, the foundation performs a large-scale prevention programme, and will generally examine about 10 000 to 15 000 people every year from all over the country. During the past 3 years, the foundation has managed to increase awareness of the public towards cardiovascular risk by these activities. For instance, during “cholesterol month” in 2005 and 2006, a total of 30 000 people in several cities in Greece had their cholesterol levels measured. They received instructions on the target levels that would reduce their cardiovascular risk.

“The results of this study came as a shock to the investigators,” says Dr Andrikopoulos. “The cardiovascular risk profile of this large cohort of citizens aged 15 to 94 years was surprisingly unfavourable, and our results were presented in a series of meetings with the press as well as at scientific congresses.”

He explains that the results seemed striking because, for the first time, they demonstrated that obesity and lack of physical activity are tending towards epidemic proportions in Greece. “It was found that 19% of the population are obese, 42% are overweight, and 58% have a sedentary lifestyle.” Moreover, the population did not perceive themselves as at risk, he says (Figure 3). “Surprisingly, only a small proportion of the population believes that these factors pose a risk for cardiovascular health. Indeed, 74% of the overweight individuals who had a body mass index greater than 27 kg/m² were convinced that they did not have excess body weight. These data reveal not only the magnitude of the problem, but also the lack of awareness of our population towards the role of the cardio-metabolic risk factors.”

Health Authorities and Cardiovascular Prevention
Dr Andrikopoulos feels that health authorities have failed for many years to develop and implement programmes on anti-smoking and on cardiovascular prevention. He says, “All governments during the last 2 decades have put a lot of money into organising the national health system, but they did not invest enough money in prevention, because they were all so influenced by the false perception of the low vascular risk of our population.”

Until recently, antismoking campaigns in Greece have not been enthusiastically pursued. Of possible relevance, 2 of Greece’s largest industries—namely, tobacco processing and tourism—depend on tobacco or on the freedom to smoke. Dr Andrikopoulos points out, “Greece is a tourist destination,
and in such a country it is quite difficult to take really strict measures against tobacco.” However, he reports significant recent progress: “Using the example of Italy, where they made a really good job of their antismoking campaign, we have started to lobby in our parliament for smoke-free environments in Greece. We hope that our ministry of health will adopt some measures towards achieving this in the near future.”

Mediterranean Diet Abandoned

Family life and dietary patterns have changed in Greece, and the population has all but abandoned the once-traditional Mediterranean diet. Dr Andrikopoulos says that the foundation organised 2 press campaigns last year to emphasise that whereas northern European countries try to mimic the Mediterranean diet, southern European countries are abandoning it. “For a significant proportion of our population, the easiest way to eat is to abandon the Mediterranean diet, for both financial and for social reasons. Fruit has become expensive in the last few years in Greece, whereas fast food is very cheap and easy to find. Almost all women in Greece now work, so they don’t have the time to prepare the well-known traditional meals we used to have. I think these are the 2 most important reasons why we have moved away from the Mediterranean diet,” he explains.

The foundation, as a member of the European Heart Network, has fully supported that organisation’s measures to reform European Union agricultural policy, to encourage wider availability of cheaper fruit in Europe (Figure 4).

Obesity

Obesity is a major risk factor for cardiovascular disease, and Greece ranks in the top 5 European countries for rates of adult obesity and in the top 3 for obesity in children. A sedentary lifestyle can persist in a city like Athens, where, for safety reasons, children now cannot walk to school.

Also, the many hills and lack of cycling paths make cycling an unattractive option for transport. Dr Andrikopoulos summarises the difficulties. “The city is not friendly for walking, because of the heavy traffic. It is not the kind of safe city that we used to have 10 or 15 years ago, where you could leave your door unlocked. This makes it even more difficult to allow your children to walk to school.”

Dr Andrikopoulos has recently published an article in Heart and Vessels, the Hellenic Heart Foundation’s official journal, which has a readership of 7500 doctors in Greece, and also in Rhythms of the Heart, another foundation publication that is distributed to more than 14,000 families. The article emphasises the importance of tackling childhood obesity. In his article, Dr Andrikopoulos suggests that the paradigm of the city of Chicago, Ill, could serve as a model in the crowded Greek cities. “In Chicago, although the city is not safe for children to walk to school by themselves, the authorities have organised the Walking School Bus program. This provides supervision so that children can walk to school together.” Similar methods, he suggests, can have great value for increasing regular exercise in Greek children.

Dr Andrikopoulos feels adamant that action must come now. “This is only one of many possible ways to fight the accumulation of cardiometabolic risk factors in our population. However, regardless of the means to achieve our goals, we strongly believe that prevention of cardiovascular diseases should begin during childhood. If we fail to act now, we will pay the human and financial cost of our inaction for yet another generation.”

Robert Short is a freelance medical journalist.

References


Figure 4. The European Union’s common agricultural policy has led to protest and the dumping of fruit. Prices are kept artificially high, discouraging the population from eating the produce.
European Meetings Update

December 2007–April 2008

2–4 December
Innovations in Cardiovascular Interventions
Tel Aviv, Israel
For further information, contact
Team5@congress.co.il

3–4 December
2nd Cardiac Safety Conference
Prague, Czech Republic
For further information, contact
tatjana.topalovic@diaeurope.org

5–8 December
EUROECHO 2007
Lisbon, Portugal
For further information, visit
www.euroecho.org

6–8 December
National Congress of the Tunisian Society of Cardiology and Cardiovascular Surgery
Tunis, Tunisia
For further details, contact
youssef.benameur@rns.tn

7–9 December
National Meeting of the Algerian Society of Cardiology
Algiers, Algeria
For further details, contact
algeriancardio@hotmail.com

8 December
Annual Meeting of the Albanian Society of Cardiology
Tirana, Albania
For further details, visit
eldabajraktari@yahoo.com

15–18 December
68th National Congress of the Italian Society of Cardiology
Rome, Italy
For further details, visit
segreteriascientifica@sicardologia.it

16–19 January
Annual Meeting of the French Society of Cardiology
Paris, France
For further details, contact
barbarabuffa@cardio-sfc.org

23–26 January
Rome Cardiology Forum 2008: An Update Meeting of the European Society of Cardiology
Rome, Italy
For further details, contact
cristiana.tugnoli@devitalservice.com

31 January–2 February
27th Annual Scientific Meeting of the Belgian Society of Cardiology
Brussels, Belgium
For further details, contact
secretariat@bvc-sbc.be

2–3 February
21st International Meeting “Cardiology Today” of the Cyprus Society of Cardiology
Nicosia, Cyprus
For further details, contact
synedrio@topkinisis.com

21–23 March
The 4th International Annual Meeting of the Libyan Cardiac Society
Benghazi, Libyan Arab Jamahiriya
For further details, contact
cardiolibya@yahoo.com

27 March 2008–29 March
74th Annual Meeting of the German Cardiac Society
Mannheim, Germany
For further details, contact
kongress@dgk.org

27–30 March
PCICS Europe 2008 - European Symposium of the Pediatric Cardiac Intensive Care Society
Monte Carlo, Monaco
For further details, contact
pcics@kenes.com

9–10 April
55th Annual Congress of the Israel Heart Society in association with the Israel Society of Cardiothoracic Surgery
Tel-Aviv, Israel
For further details, contact
team1@congress.co.il

17–18 April
Spring Meeting of the Netherlands Society of Cardiology
Amsterdam, the Netherlands
For further details, contact
bureau@nvvc.nl

20–23 April
XXIX Annual Congress of the Portuguese Society of Cardiology
Vilamoura, Portugal
For further details, contact
secretariado@mail.spc.pt

23–25 April
Annual Meeting of the Swedish Society of Cardiology
Malmö, Sweden
For further details, contact
per.tornvall@karolinska.se

26–29 April
The 77th European Atherosclerosis Society Congress
Istanbul, Turkey
For further details, contact
eas2008@kenes.com

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