Fractional flow reserve-guided PCI outperforms medical therapy alone in stable CAD

TREATMENT of patients with stable coronary artery disease (CAD) guided by fractional flow reserve (FFr) assessment reduces the risk of urgent revascularisation, according to findings from the FAME 2 trial reported yesterday in the Hot Line session. The all-comers study, published online by the NEJM, underlines the important role that FFr-guided therapy may have in improving outcomes for CAD patients.

While the outcome benefit of PCI is established in ACS, use in patients with stable CAD has been controversial. “In previous trials revascularisation has been guided by the angiographic appearance of the lesions,” said Bernard De Bruyne from the OLV Clinic in Aalst, Belgium, “but it’s likely that a sizeable proportion of patients had no or little ischemia.”

FFr is a pressure-wire based index used during coronary angiography to assess the potential of a coronary stenosis to induce myocardial ischemia. The FAME 2 trial compared clinical outcomes for FFr-guided PCI plus medical therapy with medical therapy alone in patients with stable coronary disease; 1220 patients found to have at least one functionally significant stenosis (FFr<0.80) were randomly assigned to one of the two arms. Additionally, 332 patients found to have stenoses with FFr of more than 0.80 (not inducing ischaemia) received medical therapy alone and were entered in a registry. The trial, which was conducted in 28 centres in Europe and North America, was halted early because of significant outcome differences.

For patients found to have significant stenosis with FFr, the primary endpoint (a composite of death, MI or urgent revascularisation) occurred in 4.3% of those in the PCI group versus 12.7% in the medical therapy group (HR 0.32; 95% CI 0.19-0.53; P<0.001).

The difference, said De Bruyne, was driven by lower rates of urgent revascularisation in the PCI group than in the medical-therapy group (0.7% vs 9.5%; P<0.001). When those in the stenosis group receiving PCI and medical therapy were compared with the registry patients on medical therapy alone, there was no difference found in outcome (p=0.61). But when those in the stenosis group receiving medical therapy alone were compared with the registry group, there was a significant difference in outcome.

Almost all centres in Europe offer FFR. But the real question is how often they use their capability to provide functional flow measurements. De Bruyne suggested that use is highly variable and dependent reimbursement systems. “But data from the FAME 1 study show that a technique that has proved beneficial for patients is actually cost saving,” he said.

Aspirin found redundant in PCI trial

THE DUAL therapy of clopidogrel and oral anticoagulants (OAC) in coronary stent patients causes less bleeding with no increased risk of stent thrombosis, stroke or MI than the triple therapy of aspirin, clopidogrel and OAC, according to the randomised WOEST study presented at a Hot Line session yesterday.

Commenting on the results, presenter Willem Dewilde said that WOEST was the first ever study to demonstrate that it was safe to omit aspirin in these patients, and that the results could have major treatment implications.

“This is an important finding with implications for future treatment and guidelines in a group of patients known to be at high risk of bleeding and thrombotic complications,” said Dewilde, from TweeSteden Hospital in the Netherlands. Session chairman Keith Fox from the University of Edinburgh added that the results could mean a reduction in the use of aspirin in PCI patients.

“There was very limited evidence prior to this study, and I...
How Japan’s 2011 earthquake spiked incidence of CVD

THE GREAT EAST Japan earthquake and tsunami of 11 March 2011 which killed nearly 16,000 people also triggered a sharp rise in the incidence of CVD. Hiroaki Shimokawa and colleagues from the Tohoku University Graduate School of Medicine at Sendai, Japan, investigated ambulance transport records made by doctors in Miyagi prefecture, close to the epicentre of the earthquake, and found that weekly occurrence of five conditions - heart failure (HF), acute coronary syndrome (ACS), stroke, cardiopulmonary arrest (CPA) and pneumonia - all significantly increased in the wake of the disaster.

Increases in CVD incidence after previous earthquakes have been reported before from Japan, China and the USA. However, Shimokawa told yesterday’s Hot Line session, these studies reported only the short term occurrence of individual CVD events and not mid-term effects on such a scale. His group examined all 124,152 ambulance transport records in the Miyagi prefecture dating from 11 February to 30 June for each year from 2008 to 2011. Incidence records from before, during and after the disaster were compared, the aftershocks counted and recorded according to a seismic intensity of 1 or greater.

Results showed that the weekly occurrence of CVDs were all significantly higher after the earthquake than in the previous three years. The occurrence of ACS and CPA showed a rapid increase followed by a sharp decline, whereas those of HF and pneumonia showed a prolonged increase for more than six weeks.

The incidence of HF and CPA showed a second peak after the largest aftershock which occurred in April. Blood pressure was also significantly elevated after the earthquake (which measured 9.0 on the Richter scale). However, transport was disrupted following the tsunami and this interrupted delivery of medications.

“Tired together,” said Shimokawa, “we consider that discontinuation of drugs, activated sympathetic nervous system, rising blood pressure, and the increased occurrence of tachyarrhythmia and infections were all involved in the increased occurrence of cardiovascular events after the Great Earthquake of Japan.”

Study confirms diagnostic accuracy of combined CT angiography and perfusion

COMBINING non-invasive CT angiography (CTA) with myocardial perfusion imaging (CTP) has robust diagnostic accuracy for identifying patients with flow-limiting coronary stenoses in need of myocardial revascularisation, according to the CORE320 study presented yesterday.

Commenting on the findings, principal investigator Joao Lima, from the Johns Hopkins Hospital, Baltimore, USA, said: “We found the addition of CT myocardial perfusion to CT angiography allows clinicians to distinguish between anatomic and flow limiting stenoses in patients with suspected coronary disease.”

CORE320 was a prospective multicentre international trial which evaluated the diagnostic accuracy of combined non-invasive CTA and CTP as compared with invasive angiography (ICA) and single photon computed tomography myocardial perfusion imaging (SPECT-MPI).

Investigators enrolled patients at 16 centres in eight countries, and 381 participants successfully completed all imaging. The age range was between 45 and 85 years, and 60% were women.

Procedure had a history of risk factors for CAD - 34% were diabetic, 26% had a history of previous myocardial infarction, 29% had prior PCI, 78% were positive for hypertension, 68% were positive for dyslipidaemia, and 45% had a history of CAD.

The study design included four imaging components: CTA, stress CTP, ICA, and SPECT-MPI.

Aspirin in the WOEST trial

Continued from page 1

“Think the community will take this seriously,” said Fox. “Practice in cardiology has been so built around aspirin, that it’s taken some courage to do without it.”

Dewilde reaffirmed that long-term OAC is obligatory for the prevention of stroke in most patients with atrial fibrillation (AF) and with mechanical heart valves. More than 30% of these patients also have ischemic heart disease and require aspirin and clopidogrel for coronary stenting. Triple therapy (OAC, aspirin, clopidogrel) is recommended in the guidelines, said Dewilde, but often causes major bleeding complications and the frequent need to discontinue the aspirin and clopidogrel.

The aim of WOEST, he added, was to test the hypothesis that, in patients on OAC having PCI, clopidogrel alone was superior to the combination of aspirin and clopidogrel with respect to bleeding and thrombotic risk.

A total of 573 patients already treated with OAC for AF or mechanical valves and undergoing coronary stenting were randomised to two groups: additional clopidogrel only (double therapy group) or additional clopidogrel and aspirin (triple therapy).

Fifteen hospitals in the Netherlands and Belgium took part and each group was followed for one year.

Results showed that the dual therapy group had significantly less bleeding (19.5%) than the triple therapy group (44.9%), and a lower mortality rate (2.6% vs 6.4%).

In the dual therapy group, there was also no increase in the occurrence of MI (3.3%) and stent thrombosis (1.5%) compared with the triple therapy group (MI=4.7%, ST=3.2%), suggesting that the omission of aspirin does not compromise safety.
Update on AFib includes novel oral anticoagulants

P.E.Vandos
Heraklion University Hospital, Greece
ESC President
2012-2014

THERE ARE a number of important features to distinguish this focused update on atrial fibrillation (AF) from its 2010 predecessor. First, on stroke prevention, additional evidence has strengthened the use of the CHA2DS2-VASc score for the identification of “truly low-risk” patients without the need for any antithrombotic therapy, and of novel oral anticoagulant without the need for any antithrombotic

The most important addition on the pharmacological cardioversion of AF is the introduction of vernakalant, a new intravenous antiarrhythmic agent approved for cardioversion of AF of ≤7 days or ≤3 days after cardiac surgery. Vernakalant is contraindicated in hypotension <100 mm Hg, recent (<30 days) acute coronary syndrome, NYHA class III and IV heart failure, severe aortic stenosis, and QT interval prolongation (QTc >500 ms).

The guidelines also highlight the revised use of dronedarone as appropriate for maintaining sinus rhythm and reducing the need for cardiovascular hospitalisations in patients with paroxysmal or persistent AF (Class IIa A) and should not be used in permanent AF. Dronedarone is also contraindicated in heart failure patients.

Finally, the focused update upgrades the recommendation of catheter ablation for symptomatic paroxysmal AF in patients who have previously failed a trial of antiarrhythmic medication, to class I A.

The 2012 focused update on AF has set new standards of clinical excellence and their implementation is expected to have a major impact in reducing the complications of this arrhythmia.

New prevention guidelines deliver emphatic message

By Per Anton Simonsen
Ostlandske Hjertesenter
Chair ESC Council of Cardiology Practice

The 2012 focused update on cardiovascular prevention from the Fifth Joint Task Force are the result of two years of work hard work from a broad group representing nine different societies: ESC, EAS, ISBM, ESO, ESH, EASD, ESCG, IDF-Europe, and EHN. The text was finally released at the Europrevent Congress in May and is now available online and with paginated reference in the EJH.

Compared to the 2007 version, the new guidelines are shorter and more concise. Furthermore, they add to the well-known ESC-recommended method a parallel classification GRADE, which allows downgrading of evidence considered biase, inconsistent, or imprecise, or upgrading of observational data if bias is unlikely, and findings are consistent and precise. This is helpful in assessing evidence for cardiovascular disease prevention where randomised clinical trials of health behaviours are difficult to conduct and interpret.

One key message is that atherosclerotic cardiovascular disease remains the greatest cause of death and morbidity worldwide, but is in principle preventable.

Although the rate of CVD mortality is changing in some countries, it remains high and is on the rise in many others. Prevention works: in countries with declining rates, more than 50% of the reductions seen in CVD mortality relates to changes in risk factors, and 40% to improved treatments.

The guideline is organised around five topics - what cardiovascular disease prevention is, why prevention is needed, who should benefit from it, how it can be used, and where should programmes be offered. Each of these five main sections begins with summaries and key messages.

The well-known SCORE system is kept but further refined with emphasis on HDL-cholesterol and relative risk as outlined in last year’s lipid guideline.

Bringing together all knowledge – from lipids, blood pressure, subclinical disease, organ damage – four classes of CVD risk are defined: very high, high, moderate, and low. Strong recommendations are given with respect to hypolipidemic medications, diet, smoking, exercise and behavioural risk factors. The guidelines make very enjoyable reading and should be read by all health providers caring for cardiovascular patients.
AMI registry studies show dramatic decline in stroke and mortality rates

A STUDY described at an ESC press briefing yesterday showed that the incidence of stroke following AMI has declined markedly over the past ten years.

Ischaemic stroke is known to be an important complication of AMI, with inflammation, thrombocyte activation and other prothrombotic mechanisms all playing an important role in pathogenesis, according to investigator Anders Ulvenstam from Umea University, Sweden. But what has not been known is whether the introduction of new treatments over the last decade have resulted in reduced incidence.

Ulvenstam and colleagues used the national registers to identify AMI and stroke patients, and then merged the two to identify overlaps. Results showed a relative risk reduction of 21% for stroke occurring within one year of AMI when the years 2007-2008 were compared with the years 1998-2000 (p<0.001). “Even the years 2007-2008 were compared with 1998-2000, the reduction of stroke incidence was still highly significant (p<0.001),” said Ulvenstam.

Similarly, early mortality in the first 30 days following AMI has decreased dramatically over the past 15 years, according to a study comparing four French AMI surveys undertaken in 1995, 2000, 2005 and 2010. Between 60 and 80% of French hospitals participated in the surveys.

Results showed that between 1995 and 2010 30-day mortality rates dropped from 12.8 to 4.0%. Use of PCI increased from 12.5 to 71% in non-STEMI and from 19.5 to 89% in STEMI. Furthermore, in STEMI use of reperfusion treatment increased from 49 to 78%, primary PCI from 12 to 63%, and fibrinolysis decreased from 37 to 14%. Overall use of antplatelets increased from 91 to 97%, use of beta-blockers from 64 to 81%, statins from 14 to 90% and ACE inhibitors from 46 to 60%.

“The overall reduction in early mortality of 68% is nothing short of spectacular,” said investigator Nicolas Danchin. The improvements, he explained, parallel contemporary changes in patient management, including widespread use of coronary angiography, reperfusion therapy and earlier use of recommended medications. “It shows the impact that new management strategies can have.”

Platelet function measurements have suggested that 25-30% of patients treated with clopidogrel do not achieve expected level of platelet inhibition. Such non-response has been attributed to extensive hepatic metabolism, drug-drug interactions, and polymorphisms of metabolising enzymes, with additional contributions from BMI, diabetes and renal failure.

All 798 patients in the MADONNA study, performed at the Medical University of Vienna, had functional platelet testing allowing classification as responders or non-responders.

Patients were then allocated to the guided group (n=403) where clopidogrel non-responders received up to four loading doses of clopidogrel or prasugrel, or to the non-guided group (n=395) where non-responders had no change in treatment.

Results showed that stent thrombosis occurred in 0.2% of patients in the guided group versus 1.9% in the non-guided group (p=0.027).

Furthermore, ACS occurred in 0% of patients in the guided group versus 2.5% in the non-guided group (p=0.001). There were, however, no differences between the two groups in the rates of cardiac death or major bleeding.

“Personalised antiplatelet treatment seems to improve patient outcomes, with the test costing around €10. It involves a blood sample and takes ten minutes to get a result,” said Jolanta Siller-Matula, the first author of the study.
Focus on the eye: changes in retinal circulation may predict risk of CVD

THE EYES ARE said to represent the window of the soul, but three abstracts presented by a single group of Greek investigators suggest they might also be used to identify people at risk of CVD. Hypertensive retinopathy, according to three studies from Hippocratio Hospital, Athens, has strong associations with arterial stiffness, cardiac remodelling and the presence of metabolic syndrome.

“The eye is the only organ in the body where you can observe blood vessels directly,” says Vasiliki Katsi, the first author of all three studies, “with changes to the retinal circulation providing early warning of changes elsewhere in the microvasculature.”

Fundscoopy, she adds, has the potential to provide an important diagnostic tool that could be introduced routinely into clinical practice. “But unfortunately fundscoopy is inherently subjective, with significant observer variability. We need computerised methods for reproducible results.”

The introduction of such systems, she explains, would allow diagnostic value of early retinal changes to be properly evaluated with longitudinal studies. “This would provide insights into risk stratification for early arteriosclerosis and help distinguish low short-term but high lifetime risk from low short-term and low lifetime risks,” says Katsi.

In the first study the group explored the relationship between retinal alterations and arterial stiffness, an index strongly correlated with increased CVD morbidity and mortality. So 268 consecutive newly diagnosed hypertensive patients (without diabetes or any history of CVD) aged 60 ±13 years, were examined by fundscoopy and allocated to one of five groups according to the Sheie’s grading system.

Results showed that 39 patients had Sheie stage 0 (defined diagnosis of hypertension but no visible retinal abnormalities); 87 had stage 1 (diffuse arteriolar narrowing but no focal constriction); 99 had stage 2 (more pronounced arteriolar narrowing with focal constriction); 35 had stage 3 (focal and diffuse narrowing with retinal haemorrhage); and eight had stage 4 (retinal oedema, hard exudates and optic disc oedema).

The Sheie values were found to correlate with arterial stiffness evaluated on the basis of carotid-to-femoral pulse wave velocity. Results also showed a statistically significant difference on pulse pressure (another surrogate of arterial stiffness) between the group (p=0.04). “Results show that in hypertensive subjects evolution of fundus lesions parallels progressive stiffening of the aorta,” says Katsi.

In the second study the team investigated associations between retinal vascular alterations and cardiac remodelling. For the study 229 never-treated essential hypertensive subjects, aged 62 ±10 years, underwent 24-hour ambulatory blood pressure monitoring, echocardiographic studies and fundscoopy examinations.

Results showed that deterioration of the retinal vascular category was associated with a statistically significant impairment of ejection fractions (EFs). Patients with Sheie stage 0 had ejection fractions (EFs) of 63 ±2%; patients with stage 1 EFs of 61 ±1.8%; patients with stage 2 EFs of 60.3 ±2.2%; patients with stage 3 EFs of 58.2 ±1.5%; and patients with stage 4 EFs of 56.1 ±2.4%. Furthermore, deterioration of retinal vascular category was associated with increases in interventricular septum end diastolic thickness (p=0.003) and left atrial anteroposterior diameters (p=0.029).

“Progressive escalation of fundus vasculature damage is accompanied by commensurate left atrial and ventricular remodelling, as well as impairment of left ventricular systolic function,” says Katsi. In the third study 202 consecutive subjects with newly diagnosed hypertension without CVD, aged 60 ±11 years, were divided into two groups according to the presence or absence of metabolic syndrome. All underwent fundscoopy examinations.

The results showed that 6% of patients with stage 0 had evidence of metabolic syndrome (MS), 14% with stage 1 had MS, 47% with stage 2 had MS, 71% with stage 3 had MS and 62% with stage 4 (p<0.05).

“The results showed that metabolic syndrome is associated with marked acceleration of the hypertensive retinal damage,” says Katsi. Such studies, she adds, open the way for computerised retinal evaluations which might be used to predict the development of future hypertension in patients with metabolic syndrome.

FP# P898
Read the abstract online
General Assembly: a new ESC President

At yesterday’s ESC General Assembly the creation of a new association for Acute Cardiac Care was formally approved. The Association becomes the sixth Association of the ESC. It was also at this meeting that the ESC Presidency was transferred from Professor Michel Komajda to Professor Panos Vardas from Greece. Paying tribute to the outgoing President, Vardas said that he “had done a tremendous job as a visionary who has protected this historical society in the best way”.

With Professor Vardas beginning his term of office, it was formally announced that the new President Elect would be Professor Fausto Jose Pinto from Portugal. Additionally, Jeroen Bax, Martin Borggrefe and Geneviève Derumeaux were elected Vice Presidents of the ESC. Steen Dalby Kristensen was elected Secretary treasurer and Claudio Ceconi was elected to the Audit Committee.

The following Councillors were elected: Piotr Ponikowski, Dan Atar, Carlo Di Mario, Francesco Cosentino, Stephan Achenbach and Davor Milicic.

Kazakhstan, new NCS

Yesterday, Michel Komajda and Fausto Pinto welcomed Kazakhstan into the ESC family, thus becoming the 55th National Cardiac Society of the association.

WG Pulmonary Circulation and Right Ventricular Function

Young Investigator Award winners Asger Andersen, Therese Andersson, Michael Dickinson, Matthias Dupont, Julia Grapsa and Justyna Pedowska-Wloszek surrounded by nucleus members Simon Gibbs, Nazzarena Galie, Stavros Konstantinides, Michel Angel Gomez Sanchez.
Debate: Can cardiac magnetic resonance imaging replace nuclear imaging?

YES, says Sven Plein, University of Leeds, UK

NO, says Erick Alexanderson Rosas, National Heart Institute Ignacio Chavez, Mexico

The ability of cardiac magnetic resonance (CMR) imaging to accurately measure ventricular function, myocardial scarring and ischaemia is now generally accepted and reflected in guidelines, which recommend CMR alongside nuclear perfusion imaging and stress echocardiography.

Potential advantages of CMR over nuclear imaging are its higher spatial resolution, the anatomical correlation provided and the fact that CMR does not expose patients to ionizing radiation.

Until recently, however, the evidence base for the use of CMR in patients with coronary artery disease (CAD) has been sparse, and CMR practice was limited to a small number of specialist centres. Both of these limitations are being overcome.

Two recent studies have compared CMR with SPECT in larger populations. The single-centre CE-MARC study showed in 752 patients that CMR had superior sensitivity and negative predictive value to SPECT to detect angiography-defined CAD, while specificity and positive predictive value were similar. The multi-centre MR-IMPACT2 study confirmed the superior sensitivity of CMR over SPECT in 533 patients, albeit with inferior specificity.

Outcome and cost-effectiveness data from CE-MARC will become available next year and several further CMR outcome studies are nearing completion.

In parallel, the availability of CMR is rapidly expanding. In the UK, for example, CMR is now performed in over 60 centres, having crossed the boundary from specialist centres to district hospitals. In Europe many CMR centres have a throughput comparable to large nuclear imaging departments. The accumulating evidence therefore is that CMR can replace nuclear imaging as a safer, faster and less expensive alternative.

The transition from nuclear imaging to CMR will not and should not be abrupt, however, and will initially remain governed by local expertise, availability and, regretfully, turf-wars. At the same time, continuing technological development in both imaging modalities will provide substance for research, debate and re-evaluation. But it is now timely to invest in CMR infrastructure on a larger scale and to accelerate the training of physicians in CMR, in anticipation of a gradual transition from nuclear imaging to CMR.


N U C L E A R cardiovascular imaging involves four well known techniques: single photon emission computed tomography (SPECT), positron emission tomography (PET), and hybrid techniques SPECTCT and PETCT.

SPECT imaging conveys many important advantages in availability, speed, low cost, fast acquisitions, and an average 20-year well-consolidated experience with the method. Its diagnostic and prognostic utility has been proven by years of intensive research in clinical conditions with an overall technique accuracy of more than 90% with great intervention therapy guidance.

In Mexico there are now more than 100 SPECT centres spread throughout the country, while access to CMR imaging today relies upon roughly 10 centres.

Nuclear cardiology acquisition protocols are simpler than CMR acquisition sequences, which have far more elaborate bases. PET scanning offers important improvements over SPECT, including better spatial resolution and reduced radiation exposure. Meta-regression demonstrated that CMR and PET have a significantly higher diagnostic accuracy than SPECT, on a patient and coronary territory basis. Moreover, PET allows the absolute quantification of myocardial blood flow in different physiological and pathological conditions (a proven and useful method), enhancing the meaning of qualitative and semi-quantitative assessments; CMR offers this possibility as well, but so far as a less developed and proven approach.

Hybrid imaging has arisen as a response to the intrinsic problems of single nuclear modalities. This is how PET/CT and SPECT/CT now consider attenuation correction and the fusion modality to assess anatomical and metabolic topography of the heart. Clinical validation studies show that advances in attenuation correction lead to an increase in the specificity of SPECT, with fewer false positive interpretations.

On the downside of nuclear methods, controlled doses of radiation are inevitable, unlike CMR, which offers the advantage of radiation-free acquisitions. Nevertheless, PET radiopharmacy has recently developed ultrashort half-life traces, which considerably reduce radiation exposure and therefore potential adverse effects.

It is true that CMR’s spatial resolution is considerably higher, allowing the detection of microvascular infarctions and equally small ischaemic areas of the myocardium - but whether these areas are of clinical relevance is yet to be proved.
Daiichi Sankyo Says “Thank You” for Visiting Us at the ESC Congress 2012.

What is your take-home message from this congress?

Sarah Clarke
Consultant cardiologist at Papworth Hospital and Vice President education and research at British Cardiovascular Society United Kingdom

From an international perspective, this meeting has become once of the most important for updating general cardiology education. In the UK, we’re facing revalidation, so it’s especially important not just to focus on specialisms. Also, we have AHBPI guidelines in the UK, which means interaction with industry at home is very different from what it is here. They do a lot more on the stands here from an educational point of view, such as 3D theatre and updates on PowerPoint. I’ve been meeting with companies to see how we can improve things (back home) in our relationships with industry, which is vital in helping us develop new devices for patients.

Pravin Ramoutar
General cardiologist at San Fernando General Hospital, Port-of-Spain Trinidad and Tobago

Fig me, it’s the fact the ESC is opening its arms and is a very inclusive organisation. It (the ESC) takes into account the varying standards in care in different parts of the world, especially countries without first world resources or benchmark standards. We’re doing what we can with the resources we have. My own personal creed is that ‘perfect should not be the enemy of good’. Things can be ‘good enough’ given the circumstances. An ideal is something to aspire to. You have to translate (what you see here) to your own circumstances, for example anti-coagulation, access to PCI, access to timely valve surgeries and achieving adequate anti-coagulation.

Ibrahim Terzic
Head of interventional cardiology at the BH Heart Centre, Tuzla Bosnia and Herzegovina

The most important thing for me is my country becoming an affiliate in the Stent for Life initiative. Tonight, I’m going to sign the affiliation and that will improve treatment for patients with MI. Bosnia still has probably the cheapest life in Europe and this has continued after the war. Mortality rates from cardiac disease are 50%. Now we have the chance to share expertise from other countries who have developed their programme. We have to reduce our MI mortality rate and implement guidelines, especially to have primary PCI in reach of everyone. I sincerely believe that if we introduce these rules we will improve life expectancy.

Sweder Van De Poll
General Cardiologist, Rotterdam, The Netherlands.

The session which really struck me this year was the one on sudden cardiac death on Monday, which was packed to rafters. Martin Halle in his presentation produced convincing data showing that sudden cardiac events were more likely to take place in people running full marathons than those running half. I see a lot of patients who’ve experienced MIs or CAD who want to know when they can start running again and how much they should do? This will provide really useful guidance for them. I was thinking of running a marathon myself next year, but now I am not quite so sure.

Daiichi Sankyo is a global pharmaceutical company with its corporate origin in Japan. We provide innovative products and services in more than 50 countries around the world. With more than 100 years of scientific expertise, our company draws upon a rich legacy of innovation and medical advancements.

Building on our experience in hypertension, antiplatelet and anticoagulation therapies, we are excited to be expanding into other important areas such as oncology, where significant unmet medical needs remain. Today, with our growing presence in developing and emerging markets, we are pleased to serve the needs of patients throughout the world.

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