Younger women identified as targets for STEMI prevention after French registry study

DATA FROM FOUR French registries of STEMI patients initiated five years apart and covering more than 15 years' duration show that mortality rate decreased by a remarkable 68%. The analysis, presented in a Hot Line session yesterday, was also published online by JAMA.

As the results might be similarly found in other countries, presenter Nicolas Danchin was cautious, noting that, even after adjusting for the burgeoning use of primary PCI and reperfusion therapy, around one quarter of the mortality reduction was attributed to a change in STEMI patient characteristics, especially age and the proportion of young female smokers.

Danchin, from the European Hospital Georges Pompidou in Paris said: “Overall, the majority decline in early mortality should not be attributed just to better delivery of reperfusion treatment.

“The improvement also reflects a profound and preoccupying change in the type of patient having a heart attack, with a particular increase in the number of young women. This increase is concomitant with an increased prevalence of smoking and obesity.”

While mortality decline in STEMI over this period is usually explained by reperfusion therapy, the investigators in this registry analysis were keen to see if other factors influenced the outcomes.

The four registries comprised USIK 1995, USIC 2000, FAST-MI 2005 and FAST-MI 2010 and included a total of 6707 STEMI patients admitted to intensive care or coronary care units.

The main outcome measures for the analysis were changes over time in crude 30-day mortality rate, and mortality standardised to the 2010 population characteristics.

Results showed that 30-day mortality rate declined from 13.7 to 4.4%, whereas standardised mortality rate decreased from 11.3 to 4.4%. The reduction in mortality throughout the study period was consistent, even after adjusting for primary PCI and reperfusion therapy,

Danchin noted emphatically that patient age decreased progressively - from 66 to 63 years - as did the number of patients with associated conditions or previously known heart disease.

His other notable finding was that the proportion of female STEMI patients under 60 years more than doubled, from 11.8 to 25.5%, and the number under 50 years tripled, from 3.7 to 11.1%.

A growing proportion of these younger women were current smokers, increasing from 37% in 1995 to 73% in 2010, and/or obese (rising from 18 to 27%).

“Everyone should be aware that young women are at an increasing risk of developing an MI,” said Danchin. “There is a very strong link here with smoking and to a lesser extent with obesity. In terms of public health, we should now focus on younger women.”

Nicolas Danchin: “The majority decline in early mortality should not be attributed just to better delivery of reperfusion therapy.”

HOT LINE SESSION
RESULTS

SHOCK RESULT IN BALLOON PULSATION STUDY

Holger Thiele reported no significant improvement in 30-day mortality rate.

USE OF intraaortic balloon counterpulsation (IABP) did not significantly reduce 30-day mortality in patients with cardiogenic shock complicating acute MI, according to the IABP-SHOCK II study reported in yesterday’s Hot Line session. The study, published simultaneously in the New England Journal of Medicine, also found no benefit for its secondary endpoints.

Cardiogenic shock, a complication which results from the heart’s inability to meet oxygen demand, is experienced by 5-10% of patients after MI. IABP is a mechanical device that increases myocardial oxygen perfusion while at the same time increasing cardiac output.

The device, which has been around for over 40 years, consists of a balloon within the aorta which inflates during diastole to improve diastolic blood pressure and coronary perfusion, and deflates during systole to reduce afterload.

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ESC congress news

TUESDAY 28 AUGUST

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Update of the ESC Guidelines on the management of atrial fibrillation

10:10 Room Tirana - Central Village
Meet the Guidelines Task Force II

11:00 Room Munich - Central Village
Hot Line III

11:00 Room Tirana - Central Village
ESC Geoffrey Rose Lecture on Population Sciences

12:45 Room Tirana - Central Village
Meet the Trialist V

12:45 Room Tirana - Central Village
Meet the Guidelines Task Force III

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Stent thrombosis rates low in large DES trial

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“Results for cardiogenic shock in patients having IABP have been conflicting,” said presenter Holger Thiele from the University of Leipzig Heart Centre in Germany. “Registry data showed a 6% mortality increase in patients who also underwent PCI, while a meta-analysis showed 11% reduction.”

The IABP-SHOCK II trial was designed to test the hypothesis that IABP counter pulsation when compared with the best available medical therapy alone will result in mortality reductions in patients with acute MI.

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Commenting on mortality differences found between the different TAVI approaches, Mohr said: “Similar data have been seen in the Source registry. The cohort of patients selected for the transapical procedure is very different from those selected for the transfemoral. They have greater vascular disease morbidity.”

Balloon counterpulsation

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Insulin glargine has only ‘modest’ effect on CIMT

A SUB-STUDY of the Outcome Reduction with Initial Glargine Intervention (ORIGIN) trial, designed to investigate the effect of insulin glargine and omega-3 fatty acids on atherosclerosis progression, has found that, compared to standard care, only insulin glargine (a long-acting insulin) had a “modest” non-significant reducing effect on the primary outcome of rate of change in carotid intima-media thickness (CIMT) at 12 carotid sites.

However, while insulin glargine did significantly reduce the secondary outcomes of the study (the annualised rates of change in maximum CIMT for the common carotid artery and for the common carotid plus bifurcation sites), there were no differences in either the primary or secondary outcomes between the omega-3 polysaturated fatty acid supplements and placebo groups.

Our study demonstrates that in high-risk people with established cardiovascular disease or with cardiovascular risk factors plus type 2 diabetes or pre-diabetes, insulin glargine modestly delays the progression of atherosclerosis,” said principal investigator Eva Lonn, from McMaster University, Hamilton, Canada, presenting Hot Line results yesterday.

The study, known as the ORIGIN-Glucose Reduction and Atherosclerosis Continuing Evaluation Study (ORIGIN-GRACE) study, assessed the effects of insulin glargine and omega-3 fatty acids by performing yearly high-resolution carotid ultrasound examinations for five years and detailed precise measurements of CIMT.

Patients were recruited from 32 centres in seven countries and received insulin glargine targeting normal glucose levels or standard glycemic care, and double-blind therapy with a 1 gram per day supplement of omega-3 fatty acids or placebo. Median follow-up was five years.

Insulin glargine significantly lowered fasting plasma glucose and triglyceride levels and provided overall “excellent” glycemic control, said Lonn, while omega-3 fatty acid supplements had no significant effect on glycemia or on lipid levels. Both interventions were well tolerated and safe.

TAVI accounts for almost 25% of German aortic valve registry

GERMAN CENTRES using TAVI are adhering well to guidelines, according to results of the German Aortic Valve Registry (GARY) reported yesterday in the Hot Line session.

Started in July 2010, this is the only registry to include patients treated with both TAVI and conventional aortic valve replacements, said study presenter Friedrich Mohr from the Heart Center, Leipzig, Germany.

He explained that the registry aims to capture both surgical and catheter-based treatment with five years follow-up to see how each procedure and valve performs: “We are seeing a tendency to go for younger and low risk patients,” said Mohr, “and this will have an impact on implants in the future.”

The current analysis explored outcomes in 13,860 patients enrolled between in 2011. Altogether, 6523 had surgical aortic valve replacement (AVR) without CABG, 3462 had surgical AVR with CABG, 2694 had transvascular TAVI and 1181 had transapical TAVI.

The results showed that in hospital mortality was 2.1% for patients having AVR without CABG, 4.5% for AVR with CABG, 5.1% for transvalvular TAVI and 7.7% for transapical TAVI.

The mean age of patients who received AVR was 68.3 years, while that of TAVI patients (transvascular and transapical) was 80.1 and 80.3 years respectively.

Stratification into risk groups revealed a benefit for people with high and very high risk when treated transvascularly, with mortality rates of 4.7% and 7.7%.

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WILLIAM WIJNS presented results of the PROTECT study of sirolimus and zotarolimus-eluting stents.

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New 2012 AMI-STEMI guidelines emphasise importance of pre-hospital logistics of care

By David Hasdai
Rabin Medical Centre
Israel

The 2012 ESC guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation (STEMI) are presented for the first time during this congress. The presentation coincides with publication of the guidelines and is the culmination of many months of intense work by the Task Force, chaired by Gabriel Steg and Stefan James. The new guidelines cover all aspects of diagnosis and treatment before, during, and after hospitalisation.

There are several key points in the new guidelines which should be to be highlighted:

1. The task force emphasises the need to set up regional networks designed to deliver reperfusion therapy expeditiously and effectively. Ambulance teams should be trained and equipped to identify patients with STEMI and administer initial therapy, including fibrinolysis if applicable. Centers with the ability to perform primary percutaneous coronary interventions (PCI) should deliver care on a 24/7 basis within 60 minutes from the initial call. Efforts should be made to transfer the patient directly to the catheterisation laboratory in PCI-capable hospitals if the diagnosis is unequivocal. Fibrinolysis should be considered in the prehospital setting, preferably with a fibrin-specific agent, if primary PCI is not feasible within acceptable time limits.

2. The following quality targets were identified:
   - First medical contact to ECG: ≤10 minutes
   - Primary PCI: ≤90 minutes if patient presents within 2 hours of onset, with large area at risk, or directly to PCI-capable hospital
   - Fibrinolysis: ≥30 minutes
   - Acceptable delay for primary PCI rather than fibrinolysis: ≤120 minutes (≤90 minutes for presenter within 2 hours or large area at risk)

3. Reperfusion therapy is indicated in all patients within 12 hours of symptom onset and beyond the 12 hour window if pain and ECG changes have been stuttering. Reperfusion therapy with primary PCI may be considered in stable patients presenting 12-24 hours after symptom onset, but the routine PCI of a totally occluded artery >24 hours after symptom onset in stable patients without signs of ischemia is not recommended.

4. Stable patients after successful fibrinolysis should undergo coronary angiography within 3-24 hours from initiation of fibrinolysis.

5. Stenting (preferably drug-eluting in the absence of contraindications) is recommended for primary PCI, limited to the culprit vessel with the exception of cardiogenic shock and persistent ischemia. Routine thrombus aspiration should be considered, but not distal protection devices.

6. For primary PCI, preferably performed by the radial approach, the periprocedural antithrombotic medications recommended include aspirin and either prasugrel (in clopidogrel-naïve patients over 75 years and without prior cerebrovascular events, and preferably >60 kg in weight) or ticagrelor; clopidogrel is recommended otherwise. Glycoprotein IIb/IIIa inhibitors may be used as bail-out therapy and sparingly as either adjunct therapy or on an upstream basis. As anticoagulants, bivalirudin is recommended (with or without glycoprotein IIb/IIIa use) and for the first time enoxaparin is introduced as an alternative to unfractionated heparin.

7. For fibrinolysis, clopidogrel is indicated in addition to aspirin. Anticoagulation with enoxaparin is recommended, but fondaparinux may be used with patients receiving streptokinase.

8. Early discharge (after approximately 72 hours) is reasonable in selected low-risk patients, if early rehabilitation and adequate follow-up are arranged.

9. Dual antiplatelet therapy (DAPT) combining aspirin and an ADP-receptor blocker (clopidogrel, prasugrel or ticagrelor) is recommended in patients with STEMI undergoing primary PCI (for ≤12 months), fibrinolysis (for ≤12 months, although the data available only pertain to one month of DAPT) and in those patients who have not undergone reperfusion therapy (for 1-12 months). Pending the results of ongoing trials, a strict minimum of 1 month is recommended for patients having received a bare-metal stent and 6-months for those who received a drug-eluting stent.

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More on obesity and sleep quality as CVD risk factors

CENTRAL OBESITY and sleep quality are two factors for consideration in risk assessments for cardiovascular disease (CVD), according to abstracts presented at an ESC press briefing yesterday.

Normal weight people with central obesity pose a greater risk of suffering CVD mortality than overweight people with smaller waist-to-hip ratios (WHR), according to a study from the Mayo Clinic, USA. Investigators stratified 12,783 people (with data obtained from a population survey) into three categories of BMI (normal, overweight, and obese) and two categories of WHR. The first was defined as WHR less than 0.85 in women and 0.90 in men; the second, WHR greater than 0.85 in women and 0.90 in men.

Using subjects with normal BMI and WHR as a reference, the study found that the risk of CVD mortality was 2.75 times higher for those with normal BMIs and high WHR. This compared with just 1.41 times higher for obese subjects with normal WHR, and 2.34 times higher for obese with high WHR.

“The combination of central fat distribution and normal BMIs yields the highest risk of CVD mortality,” said Sofi. “This is important and normal BMIs yields the highest risk of CVD mortality.”

Quality of sleep

Sleep disturbances are common, with a prevalence of more than 30% in adults, rising to 50% in the over 65s. Now yet another reason for a sleepless night is the finding by Italian investigators that insomnia and normal BMIs yields the highest risk of CVD mortality. The radiofrequency-based catheter treatment for hypertension may be associated with a significant improvement in quality of sleep, according to a study from the Mayo Clinic, USA. Investigators stratified 12,501 patients, who altogether experienced a total of 6332 CVD events during follow-up. Results showed that, for those who adopted all four healthy lifestyles, the risk of hypertension was reduced by 67% in men and 63% in women. For those adopting three healthy lifestyle factors the risk was reduced by 66% for men and 59% for women; adopting two it was reduced by 49% for men and 32% for women; and for those adopting one it was reduced by 26% for men and 11% for women.

“Our results provide a compelling message that healthy lifestyles reduce the risk of hypertension among healthy non-populations and that the effects are additive,” said first author Pekka Jousilahti.

Energy drinks go down well in Italian study

ENERGY DRINKS can exert positive benefits on myocardial performance, according to an Italian abstract presented yesterday.

In recent years the energy drink market has exploded, with more people than ever using them as a quick pick-me-up, whether to stay awake for all-night study or gain an edge in sport. But concerns have been raised that energy drinks containing both caffeine and taurine might cause adverse effects. While caffeine increases blood pressure, taurine suggests taurine may stimulate the release of calcium from the sarcoplasmic reticulum.

Sergio Mordillo and Daniele Menci from the University of Siena used spectrally-tracking echocardiography and echo Doppler analysis to explore the influence of energy drinks on heart function. For the study 35 healthy subjects (mean age 25 years) consumed energy drinks containing caffeine and taurine, with assessments undertaken at baseline and one hour after consumption.

Results showed that, compared to baseline readings, one hour after consumption mitral annular plane systolic excursion (which evaluates longitudinal ventricular function) increased by 11% (P<0.001), global longitudinal strain increased by 10% (P=0.004), and LV twisting (a torsional movement of the left ventricle) increased by 22% (P<0.0001). Furthermore, results showed that global and free wall RVLS (a measurement of longitudinal strain of the right ventricle), increased by 8%, (P=0.001) and 5% (P=0.1) respectively.

“Taken together, these results show energy drinks enhance contractions of both the left and right ventricles, thereby delivering a positive effect on myocardial function,” said Menci.

In a third abstract, Finnish researchers reported that the risk of hypertension can be reduced to one-third among people who adopt four healthy lifestyle traits as compared to those who adopt none.

Investigators from the National Institute for Health and Welfare in Helsinki conducted lifestyle information on 21,067 people in a population-based risk factor survey. During follow-up, data on the start of antihypertensive medication were obtained using personal ID numbers for drug prescriptions.

The four modifiable lifestyle traits examined were alcohol consumption, physical activity, obesity and consumption of vegetables. Smoking was omitted as considered not directly related to hypertension.

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The many causes of AF are the key to therapy
Lukas Kappenberger to deliver today’s Rene Laennec lecture

IN THE RENE LAENNEC prize lecture later today Lukas Kappenberger, the first president of the ESC’s European Heart Rhythm Association (EHRA), will take a new look at atrial fibrillation (AF). Kappenberger, who until retirement in 2006 was Professor of Cardiology at the University of Lausanne, qualified in medicine from the University of Basel in 1970. After seven years in general internal medicine he turned to cardiology, training in Lucerne and the University of Zurich before moving in 1978 to Guy’s Hospital, London, to pursue greater knowledge of arrhythmias. At that time, he says, therapeutic innovations were driven by a need to cure complex arrhythmias in individual patients, which led to antitachycardia pacing with custom designed devices.

In 1979 back in Zurich Kappenberger set up a lab focused on arrhythmias, pacemakers, and electrical stimulation in rhythm dysfunctions. As a cardiologist he was invited to surgical interventions to localise access pathways or ventricular tachycardia circuits. “For epicardial mapping we developed gloves with electrodes in the finger tips so we could advise surgeons where to cut,” he says.

In Zürich he worked next door to the legendary Andreas Grünzig, who at the time was developing his revolutionary ideas on balloon angioplasty for coronary stenosis. “While Andreas was doing his work with balloons, I tried percutaneous catheter ablations, beginning with fulgurations for curing arrhythmias. It was a really pioneering period, with colleagues starting to appreciate that cardiologists could do more than just prescribe drugs,” he says. In addition to what would become interventional cardiology, the two colleagues shared a mutual passion for flying. Aeroplanes represent a recurring theme in Kappenberger’s work. With a pilot’s licence for as long as he has been medically qualified, aviation has undoubtedly inspired some of his cardiology research. “The heart and circulation form a complex that’s similar to the motors of an aeroplane. We again took inspiration from aeronautical engineers to develop computer modelling. The project, which has become known as the Lausanne Heart, first simulated one ventricular tachycardia circuit. “For epicardial mapping we developed gloves with electrodes in the finger tips so we could advise surgeons where to cut,” he says.

With AF still an unresolved problem, Kappenberger again took inspiration from aeronautical engineers to develop computer modelling. The project, which has become known as the Lausanne Heart, first simulated one cardiac cell (including modelling for the ion channels), and now has extended to several hundred cells. “We are trying to map the multiple causes of AF,” he says. Modelled cell assemblies have been trained to generate arrhythmia, and computer-generated electrical signals have been used to recreate different forms of AF.

In “retirement” Kappenberger continues to develop tools for better understanding AF, helped by a new facility in Zürich. “In theory this should enable us one day to take ECGs from AF patients and use computers to probe the causes,” he says.

The multiple causes of AF are the subject of Lukas Kappenberger’s lecture today.
OK to eat, drink and be merry?

Red wine, dark chocolate, green tea are all back on everyone’s shopping list. And the reason? A flurry of studies suggesting that diets rich in certain foods benefit against cardiovascular disease and risk of early death.

A symposium this morning will examine just how reliable the evidence is.

A HEART-HEALTHY life need not mean an ascetic life. There is a way to enjoy food and enjoy too the benefits of protection against CVD and even mortality risk. “You can eat well and live a long time,” says Francesco Sofi from the University of Florence, Italy, provided that what you eat is predominantly a Mediterranean diet.

A 2010 meta-analysis performed by Sofi and colleagues - which comprised a total study population of more than 2 million subjects - confirmed the significant and consistent protection against cVD and even mortality risk. “you can eat well and live a long time,” says Sofi, “and that what you eat is predominantly a Mediterranean diet. The diet, explained Sofi, refers to a dietary menu commonly available in the early 1960s in the Mediterranean regions (though perhaps less so today) and characterised by a high consumption of fruit, vegetables, legumes and complex carbohydrates, with a moderate consumption of fish, olive oil as the main source of fats, and a low-to-moderate amount of red wine during meals.

But, warns Sofi, a longer life will not just depend on certain ingredients in the diet. “It’s a holistic effect,” he explains. “It even depends on how you eat, not just on what you eat. It’s about a way of life, an attitude to food and living.” Sofi cites the common case of twins of whom one emigrates to the USA, and the other stays at home in Italy. “It’s the one in the USA who puts on weight, whose lifestyle changes,” he says. “It’s not just genes, but everything to do with how they live.”

The mechanisms in favour of a Mediterranean diet are well known and well studied, with evidence accruing all the time. “Individually,” says Sofi, “different foods will have different effects, but collectively it’s an effect of nutrients, vitamins and antioxidants.” There has been recent evidence of an anti-inflammatory effect. Thus, relative to the American diet, a Mediterranean diet results in a lower intake of red meat, a higher intake of polyunsaturated fatty acids (PUFAs), and a much higher intake of plant-based foods and monounsaturated fatty acids.

For the fact is, he says, that the populations of Southern Europe, such as in Italy, Spain and Greece, tend to be less overweight - and even live longer - than their counterparts in Northern European countries. A recent study by the Erasmus Medical center in Rotterdam. certainly, Eric Sijbrands of erasmus University in the Netherlands. he describes the “French paradox”, raised by St Leger in 1979, suggests that what you eat well and live a long time; provided that what you eat is predominantly a Mediterranean diet.

WHILE RED WINE is central to the Mediterranean diet, it remains a subject of ever increasing mystery to Eric Sijbrands of Erasmus University Medical center in Rotterdam. Certainly, he says, epidemiological studies appear to confirm a cardioprotective effect, but the mechanism by which that protection is delivered seems increasingly unclear. The favoured theory has been an effect of the polyphenol resveratrol, found in the skin of red grapes and lately invested with all kinds of life-giving properties. Small studies have suggested a beneficial effect of red wine on lipid metabolism, which, says Sijbrands, “still stands”, and an effect on vascular function mediated through endothelial cell function (as an anti-oxidant effect). But Sijbrands is doubtful whether any of these effects can be justly attributed to a single polyphenol such as resveratrol.

For the fact is, he says, that the explanation for red wine’s apparent cardiovascular benefits will be complex. “Certainly,” he adds, “we may not prescribe red wine for a heart condition, and, even if I was asked about it, I would be cautious.”

The reasoning behind the resveratrol theories largely dates back to explaining the “French paradox”, raised by St Leger et al in the Lancet in 1979 by which the French, with a high consumption of saturated fat, also had lower mortality rates from CHD than other countries with similar fat consumption. St Leger’s principal finding was a strong and negative association between CHD mortality and alcohol consumption, particularly red wine. Thus, they concluded: “If wine is ever found to contain a constituent protective against IHD, then we consider it almost as a serendipity that this constituent should be isolated. The medicine is already in a highly palatable form.”

Resveratrol has been studied and promoted as that constituent, but studies performed by Sijbrands group in Rotterdam have failed to replicate results from any of them. For example, a study reported this year found that intake of red wine polyphenols in two dosages for four weeks did not decrease peripheral or central blood pressure in subjects with hypertension.

Yet the epidemiology, dating to back to St Leger in 1979, suggests that red wine, especially if taken in moderation and with food, does confer some benefit in some people. But, says Sijbrands, the emphasis on moderation is justly made, for whatever the benefit, it is likely to be only small, and far less than the adverse effects derived from excess.

Similarly inconclusive is the evidence that dark chocolate is cardioprotective, says Steffen Desch from the University of Leipzig Heart Centre in Germany. He describes the apparent epidemiological benefit as “a sign” but not proof, and even well publicised studies (such as the meta-analysis from last year’s ESC Congress showing a 37% reduced association with CVD) are plagued by heterogeneity. “We need a randomised trial for the evidence,” says Desch. But even that, he concedes, will be difficult given that - as with red wine - we don’t yet understand dark chocolate’s protective mechanisms. Furthermore, finding an adequate control substance (a flavanol-free chocolate with comparable look and taste) would be difficult. Flavanols, a subclass of flavonoids, have been studied experimentally as the most likely modulator of cardiovascular risk, with oxidative stress, inflammation and endothelial function all shown to be responsive in some way. Some studies have even claimed that the blood pressure lowering and anti-inflammatory effects of dark chocolate highlight its use as a prophylactic and therapeutic agent, but Desch also urges caution. “Despite the studies,” he says, “I couldn’t yet recommend dark chocolate as a prevention or treatment in cardiovascular disease. There’s no strong evidence of a benefit, and no clear explanation of an effective mechanism.” He also warns that the polyphenol or metabolic effects of dark chocolate may well more than offset any direct cardiovascular protection.

Optimism said to have the greatest preventive effect

While many studies have examined the avoidance of negative emotions in the fight against disease and recuperation from it, far less has been researched on the benefits of positive emotions in cardiovascular medicine. “We can’t just say they’re the opposite ends of the same continuum,” says cardiac psychologist Susanne Pederson from Tilburg University in the Netherlands. “We can’t say that eliminating the negative will necessarily accentuate the positive.” Positive emotions, she says, deserve their own encouragement and study in their own right. Such emotions - alongside laughter - include feelings of optimism, psychological well-being and a sense of mastery such that life’s troubles can be cheerfully and effectively dealt with. In the cardiac setting of rehabilitation such skills may be helped by physical exercise and cognitive behavioural therapy.

Pederson, who will speak in this morning’s symposium on the effect of laughter and positive emotions on the heart, confirms that personal psychological well-being has been shown in most studies to protect against cardiovascular disease and events, independently of traditional risk factors and other ill health. But not all studies, nor all positive emotions. However, of the several studies examining the association between optimism and prevention of CVD, all have demonstrated a reduced risk with greater levels of well-being. And a general sense of optimism and vitality in healthy populations has been reported to have the greatest protective effect.

There is, she explains, no obviously direct physiological explanation for these effects, but well-being has been clearly associated with healthier behaviours, which may well explain the cardiovascular benefits. For example, most longitudinal studies have shown that well-being is associated with a reduced likelihood of starting or continuing smoking.

However, the evidence seems less clear in linking positive emotions with clearly defined cardiovascular function. Some studies suggest that upbeat feelings may increase cardiovascular reactivity in the short-term, but generally not to the same reverse extent as negative feelings. Nevertheless, positive emotions are commonly associated with lower resting heart rate and blood pressure, says Pedersen.

Laughter, of course, may be little more than a surrogate for feelings of well-being, but a widely referred to Japanese study of 2010 reported that “mirthful laughter elicited by comic movies” induced beneficial impact on vascular function. Ischemia-induced brachial artery flow-mediated vasodilation increased significantly after watching a comedy film (+17%) but decreased after watching a dull documentary (-19%).

However, as with wine or dark chocolate, it is salutary to remember that excess may well prove counterproductive. Earlier this year, the strange case of a British man who had died in 1975 while laughing heartily at his favourite TV show was finally explained when his young granddaughter was diagnosed with long QT syndrome. The rare genetic rhythm disorder, said a cardiologist, “can induce cardiac arrest when triggered by exertion or rapid emotional release”, thereby linking laughter with the cause of death.
Tackling treatment inequalities in Europe

The ESC sees one of its main responsibilities as working against unequal access to health care in Europe. Data from the Euro Heart mapping project in 2009 showed that the highest rates of death from CVD among men under 65 were in Hungary (105 per 100,000 population), Estonia (104) and Slovakia (74). This was in sharp contrast to the lowest rates for men found in France (17), the Netherlands (22) and Italy (25). Such disparities, the ESC believes, cannot be accepted, and this has resulted in two major initiatives, Stent for Life and the White Book. Here Congress News reports on progress.

**Stent for Life**

The Stent for Life initiative (SFL) was set up in 2008 to encourage equal access to primary PCI for STEMI patients in Europe. The joint venture, between the ESC’s European Association of Percutaneous Cardiovascular Interventions (EAPCI) and EuroPCR, was designed to reduce mortality and morbidity in ACS patients through healthcare systems.

Primary PCI has been shown superior to thrombolysis in many randomised trials (including PRAGUE-1, PRAGUE-2 and DANAMI-2), with the latest ESC STEMI guidelines recommending primary PCI as the preferred treatment if available within 90-120 minutes of first medical contact.

However, a survey of 30 European countries performed by SFL revealed substantial heterogeneity in Europe in primary PCI use in STEMI patients and opportunities to improve treatment (EHI 2010, 31: 943-57). The annual number of PCI treatments per million population varied from lows of 20 per year in Romania to highs of 970 in Switzerland.

The ten low-scoring countries (Bulgaria, Egypt, France, Greece, Italy, Portugal, Romania, Serbia, Spain and Turkey) were invited to join SFL. SFL’s targets are primary PCI offered to more than 70% of STEMI patients, a PCI rate of more than 600 per million inhabitants per year, and PCI centres open round the clock.

While SFL is co-ordinated centrally by the ESC, each participating country has appointed its own implementation teams consisting of project managers and cardiologists. “The key to success has been the creation of action plans tailored to the needs of each individual country,” says Steen Dalby Kristensen, the current SFL co-chairman. Records already show that major increases have occurred in the number of primary PCIs performed in the SFL countries, together with improvements in STEMI mortality rates.

“All SFL countries now report that the number of patients treated with primary PCI has increased,” says Kristensen. “Set against the backdrop of the current European financial situation and political unrest, it’s a remarkable achievement.”

**White Book**

The original “White Book” was launched in 2008 by the European Heart Rhythm Association (EHRA) of the ESC to survey the realities of arrhythmia treatments in Europe.

Based on data returned from the national cardiac societies or their arrhythmia and cardiac pacing working groups, the relative volumes of procedures per million population were calculated, and national societies asked to identify the most important obstacles for the implementation of European guidelines in their country.

Now, for inter-country comparisons, EHRA has produced a new analysis which takes the different approach of looking at each procedure in turn and comparing how frequently it is performed in each country. The analysis clearly reveals large treatment gradients from West to East, with Eastern European countries undertaking fewer procedures.

For example, in 2011 the mean ICD implantation rate of 44 countries was 103 units per million inhabitants, with Germany (326), Czech Republic (270) and Austria (220) reporting the highest rates; countries reporting the lowest were Ukraine (1) and Azerbaijan (2).

“For the first time we can really see how practices differ across Europe,” says Fernando Arribas, the member of the EHRA, EFN and ESN Committee responsible for the White Book. “We have found that these differences depend not only on budgets, but also on the infrastructures which countries have in place.”

To tackle the inequalities EHRA has launched an Eastern Initiative, with a first meeting in Budapest in 2010, and a “summit conference” will be in Belgrade in October. Here representatives from national cardiac societies, healthcare ministries and insurance companies will consider ways towards a European cardiac rhythm management policy.

“The aim is to show the extent of disparity in Europe and emphasise that these lifesaving therapies are based on excellent scientific evidence and are highly cost effective,” explains Robert Hatala, chairman of the EHRA National Societies Committee responsible for the initiative.

An additional component of the initiative is education, with training fellowships available for electrophysiologists from underperforming countries. Education will also be offered to internists, family doctors and the general public, with EHRA producing a tool-kit translated into different languages to help launch PR campaigns.

The first such campaign is “Sudden Cardiac Death Awareness Day”, to be launched in autumn 2012. “We want the public to become more aware of the impact of arrhythmia, focusing mainly on sudden cardiac death, how this differs from MI and what can be done to effectively save lives, often of young and middle-aged people,” says Hatala.
How has the financial crisis affected your work?

Bela Merkely
Interventional cardiologist
Budapest, Hungary

In my opinion, there’s been very little impact of the global economic crisis here in the Middle East. Maybe because Saudi Arabia is a rich country and the health system is pretty advanced. There’s no problem with funding being granted, research levels are still being maintained and in general the health system isn’t affected. I think things are set to stay that way for at least the next five years or so. Here, the government provides a basic level of care for every citizen and resident and our health centres are very advanced. I do hear about the problems though in Britain and the US from fellow doctors in these countries.

It’s really difficult at the moment getting a grant and a lot of my colleagues (researchers) are even working for free. You have to have a lot of patience, because there are too many people competing for too little money.

Just one research paper published used to be enough to get funding. Now it’s only people who have published numerous papers who are successful in getting financial backing.

Where I work in Copenhagen, we’ve been fortunate in publishing a lot of important findings in cardiovascular epidemiology and it would be a pity if we don’t have the money to continue. Of course, you have thoughts sometimes of leaving and going to work in industry instead.

Charlotte Andersson
Cardiology researcher at Gentofte University Hospital
Copenhagen, Denmark

Filippo Sarullo
Rehabilitation cardiologist
Italy

The health care budget in Italy has recently been reduced by around 20%. Working in rehabilitation cardiology, we’ve had less drastic reductions of around 10%, since we’re thought to provide value for money. But we have been told that we are only allowed to prescribe generic drugs and cannot use branded drugs. We’re really concerned that our hospitals may in future start to experience difficulties in paying the pharma companies for drugs. In Italy we’ve become used to a good standard of living, but are now starting to realise that we will all have to make compromises.

The new era of oral anticoagulation – achievements and challenges –

14.45 WELCOME AND INTRODUCTION
Professor A. John Camm, London, UK

14.50 NEW ORAL ANTICOAGULANTS IN ATRIAL FIBRILLATION - A FIRST INVENTORY
Professor A. John Camm, London, UK

15.05 CHALLENGES OF NEW ORAL ANTICOAGULANTS IN CLINICAL PRACTICE
Professor Hein Heidbuchel, Leuven, Belgium

15.20 THE PHARMACOLOGICAL BASIS OF EDOXABAN DEVELOPMENT:
 ONCE-DAILY DOSING
Professor Therese De Caterina, Chieti, Italy

15.35 ENGAGE AF-TIMI 48 - EDOXABAN IN ATRIAL FIBRILLATION
WHAT CAN WE EXPECT?
Dr Robert Giugliano, Boston, USA

15.50 PANEL DISCUSSION
All

16:10 CLOSING
Professor A. John Camm, London, UK