**NEWER GENERATION** everolimus drug eluting stents (DES) perform better than bare metal stents (BMS) in patients having primary PCI for ST elevation MI (STEMI), according to results of the EXAMINATION trial reported yesterday.

Although a non-significant trend was found for the primary endpoint of patient-oriented outcome - death, any MI and any repeat revascularisation, - statistically significant benefits were shown for the secondary performance endpoints of freedom from target vessel and lesion revascularisation and from stent thrombosis.

Historically there has been a prejudice against using DES in STEMI populations due to concerns about adherence to anticoagulation therapy. Thus, in this investigator-initiated EXAMINATION (Evaluation of Xience V stent in Acute Myocardial InfarCTION) trial, Dr Manel Sabate and colleagues from the University Hospital Clinic, Barcelona, assessed the safety and performance of the XIENCE V everolimus DES against the cobalt chromium bare metal stent.

Almost 1500 STEMI patients having primary PCI were randomised 1:1 to receive the DES (n=751) and the BMS (n=747). The multicentre trial involved eight centres in Spain, two in the Netherlands and two in Italy.

Results at one year showed that 88% of patients receiving the everolimus-eluting stent were free of the primary endpoint (a composite of all-cause death, any MI and any revascularisation) versus 85.6% receiving the eluting BMS (P=0.01).

However, results for the secondary endpoints, which related more to the performance of the stent, proved more striking. Freedom from target vessel revascularisation was 96.1% for the everolimus stent and 93% for the BMS (P=0.007). The occurrence of definite/probable stent thrombosis was 0.9% for the everolimus stent versus 2.5% for the BMS (p=0.01).

Study presenter Sabate said: “These are the first real world results we have from a randomised trial investigating the performance of new generation DES in the high-risk context of STEMI, and I think we can be reassured over any concerns about stent thrombosis.”

Commenting, Professor Gabriel Steg from the Centre Hospitalier Bichaut-Claude Bernard in Paris, said: “These results are very convincing and may result in guideline changes with respect to use of drug eluting stents in STEMI.”

PRODIGY: no benefit from prolonged antiplatelet therapy

By Helen Saul
ESC Congress News

Patients who received six months’ clopidogrel after coronary stenting had better outcomes than those treated for the standard 24 months in a study presented at yesterday’s Hot Line session. The results “question the validity of current guideline recommendations”, said Dr Marco Valgimigli from the University Hospital of Ferrara, Italy. Presenting the data on behalf of the PRoDIGY (Prolonging dual antiplatelet treatment after grading stent-induced intimal hyperplasia study) group, he said that 24 months’ dual antiplatelet therapy was no better than six months’ in preventing adverse cardiac events. However, patients who were treated for longer had a consistently greater risk of bleeding and haemorrhage.

“We were really surprised to see there was absolutely no difference in any ischaemic endpoint if you prolong treatment,” Valgimigli said. “You just get more bleeding. Patients are twice as likely to need blood transfusion, so it’s a real hazard.”

PRODIGY is a multicentre study which included 2000 patients scheduled for elective or emergency coronary angioplasty. They were...
Continued from page 1

Hot Line PRODIGY trial
randomised to receive one of four stent types: everolimus-eluting, paclitaxel-eluting, zotarolimus-eluting or a thin-strut bare metal stent. At 30 days, patients in each stent group were then further randomised to either six or 24 months of dual antiplatelet treatment.

At two years, cumulative risk of the primary endpoint, a composite of overall death, MI, stroke, or bleeding was doubled in the 24-month group: the hazard ratio for type 5, 3, or 2 bleeding events (Bleeding Academic Research Consortium classification) was 2.17 (C1 1.2-3.1; P = 0.037).

Valgimigi said that the study had “failed to show” that treatment for 24 months is superior to six months, and added: “While we cannot rule out the possibility that a smaller than previously anticipated benefit may exist, the clear increase in bleeding with longer duration of dual antiplatelet therapy, suggests that current recommendations may have overemphasised the benefit over the risk of combined long-term aspirin and clopidogrel.”

Other groups presented studies with similar findings this year, and last though neither has yet published. Valgimigi said: “I’m aware of three different studies giving more or less the same type of findings. I don’t know how the guidelines committees will adapt their recommendations based on those findings.”

More evidence in favour of chocolate’s protective effects

“Life is like a box of chocolates - you never know what you’re going to get,” were the wise words of Forrest Gump in the eponymous 1994 film. But the results of a new meta-analysis, presented in an abstract yesterday, suggest that one of life’s increasing certainties is that eating chocolate could reduce your risk of developing CVD by one third.

Recent studies (both experimental and observational) have suggested that chocolate consumption has a positive influence on human health, with antioxidant, antihypertensive, anti-inflammatory, anti-atherogenic, and anti-thrombotic effects, as well as beneficially influencing insulin sensitivity, vascular endothelial function, and activation of nitric oxide.

In this latest study, published simultaneously in the British Medical Journal, Oscar Franco and colleagues from the University of Cambridge, UK, carried out a large scale review and meta-analysis of seven studies exploring the effects of eating chocolate on such cardiovascular events as MI and stroke. For the studies, which involved more than 100,000 participants and included randomised controlled trials, cohort, case-control or cross-sectional studies, the investigators compared groups with the highest levels of chocolate consumption against the groups with the lowest levels.

Results showed that high chocolate consumption was associated with a 37% decrease in CVD and 29% decrease in the risk of stroke, but showed no significant association with respect to heart failure. And what’s more, it appears that you can take your chocolate however you like it – the studies did not differentiate between dark or milk chocolate and included consumption of chocolate bars, drinks, biscuits and desserts.

Being perhaps a little kill-joy, the authors note that their findings need to be interpreted with caution. “Commercially available chocolate is very calorific (around 500 calories for every 100 grams) and eating too much of it could lead to weight gain, a risk of diabetes and heart disease,” said Dr Franco, who called for initiatives to reduce the high sugar and fat content of commercially available chocolate. “Efforts to reduce it might permit an improved exposure to the beneficial effect of chocolate,” he said.

Studies did not differentiate between dark or milk chocolate.
ESC/EAS Guidelines for the management of dyslipidaemias

By Dr Christian Funck-Brentano
Faculté de Médecine
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The newly developed ESC/EAS Guidelines for the management of dyslipidaemias, FP# 3883 to 3886, will be published in 2012.

An entire section is devoted to the management of dyslipidaemias in different clinical settings, such as children, women, the elderly, the metabolic syndrome and diabetes, patients with acute coronary syndrome, heart failure, renal disease, autoimmune diseases, peripheral artery disease, stroke, HIV and post-transplantation patients. This section also includes an extensive discussion of familial dyslipidaemias and how to diagnose them.

The guidelines finally give clear and simple recommendations for monitoring lipids and detecting adverse events in patients on lipid-lowering therapy. Addenda to the guidelines, accessible on the ESC website in the guidelines section, give SCORE charts, including HDL-cholesterol, a table and figure of statin doses expected to lower LDL-cholesterol to various levels, a table of inhibitors and inducers of pathways involved in statin metabolism and transport, and references.

Throughout the guidelines, references are given to clinical trials and observational studies supporting the evidence for each recommendation.

Nor are these new guidelines will be extremely useful to all physicians, cardiologists and non-cardiologists, for the everyday management of patients with dyslipidaemias.

The importance of placing dyslipidaemias in the context of other cardiovascular risk factors is emphasised and the place of lipid profiling in order to assess total cardiovascular risk is discussed. To this end, the guidelines provide a four-stage estimation of global risk - with very high, moderate and low risk groups, which extend the traditional high and low risk groups based on SCORE 25% or <5% to a more gradual scale of risk assessment from the dyslipidaemia point of view. HDL-cholesterol also is integrated in the risk assessment.

Treatment targets are discussed and, although LDL-cholesterol remains the key target in most situations, the potential importance of apo B and non-HDL-cholesterol is introduced, as well as the consideration of triglyceride levels.

The importance of lifestyle and diet on dyslipidaemias and how to practically implement lifestyle and dietary changes is reviewed. It is, however, acknowledged that the evidence for any major impact of dietary supplements and functional food products on clinical outcomes has not been shown and that, although diet has an important influence on dyslipidaemias and clinical outcomes, these supplementary products still need to be properly evaluated in clinical trials.

Drugs for treatment of hypercholesterolaemia and hypertyglyceridaemia, as well as drugs affecting HDL-cholesterol and their combinations, are reviewed. A simple algorithm is presented for the optimal use of statins in the treatment of hypercholesterolaemia which gives practical recommendations depending on the extent of target LDL-cholesterol reduction, and the possible choices of various statins and doses expected to reach those target values.

Search for the webcast on www.escardio.org

ESC extends its EurObservational registry project

By Simon Brown
ESC Congress News

The ESC Board has agreed to further support the EurObservational research project, an ambitious programme of European registries, says Professor Luigi Tavazzi, chairman of the ESC’s Oversight Committee, aims to provide a better understanding of medical practice based on strong observational data collected with a more robust methodology than previous attempts. The programme, launched in 2009, is now composed of four types of registries:

- **General surveys** designed to assess the management of cardiovascular diseases of major impact in terms of incidence. These will provide epidemiological data and reports on the application of clinical practice guidelines. They include heart failure, atrial fibrillation and chronic ischaemic heart disease. The two latter studies are now in preparation, and the heart failure pilot study is now completed, which paves the way for a long-term study.

- **Sentinel registries** which assess the impact of interventional procedures and imaging techniques and include pilot registries in ablation for atrial fibrillation and transcatheter valve treatment. (whose initial results have been reported at this congress) and transcatheter valve implantation.

- **Special surveys/registries** to assess the epidemiology and management of rarer conditions as emerging issues in the epidemiology and management of cardiovascular diseases and cardiac disease, and cardiomyopathies.

- **Prevention surveys** to assess the epidemiology of CVD risk factors and prevention measures, which from 2012 will include EuroAspire IV.

 "All of these registries should be up and running by 2012," said Tavazzi, "and we expect the data to be reliable and representative of practice in Europe." Geographical representation, he added, is important, to provide a clear overview of all European regions.

Yesterday, at a symposium of the ESC/EAS, Professor Aldo Maggioni from the ANMCO study centre in Italy reported results from the completed pilot study for the heart failure general registry. This was a prospective survey conducted in 136 cardiologists centres (with more than 5000 patients) in 12 European countries selected to represent the different healthcare systems and attitudes across Europe.

Results showed that, while a mortality rate of 7% (after one-year follow-up) in chronic HF seems an improvement, outcomes in those admitted for an HF are "still unacceptably unfavourable", said Maggioni, with an all-cause mortality rate of nearly 17%.

The study also showed that guideline-recommended treatments in chronic HF were not only prescribed appropriately but were maintained over the whole follow-up period. However, those admitted for acute HF were still treated in a more "anecdotal" way.

Today, a webinar symposium will preview the upcoming registries of the EurObservational project, including the general registries in IHD and atrial fibrillation, and the sentinel registry on transcatheter valve treatment.

And yesterday, Professor Jolien Roos-Hesselink also reported that the special registry on pregnancy in cardiac disease, an area in which evidence from prospective or randomised studies is sparse, analysed its first interim data in a general registery in IHD and atrial fibrillation, and the sentinel registry on transcatheter valve treatment. (with more than 5000 patients) in 12 European countries selected to represent the different healthcare systems and attitudes across Europe.

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More than 1300 women have been enrolled so far - from 28 countries and 69 centres - around 60% of whom had congenital heart disease (though there were also 333 with valvular disease, 79 with cardiomyopathies and 24 with ischaemic heart disease).

Importantly, said Roos-Hesselink, 26% of the women were hospitalised for cardiac reasons during their pregnancies, and the Caesarean section rate for delivery was high (40%). In addition, the rate of maternal mortality (13 deaths in total) was 100-times higher than in the general population, and fetal mortality at least ten times higher.

This is an important study, said Roos-Hesselink, not least because the complications in these patients are frequent and can be life-threatening. Indeed, in Europe maternal heart disease has now become the major cause of maternal death during pregnancy.

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THE MAIN purpose of pre-participation screening is to identify the cohort of athletes affected by unsuspected CVDs and prevent sudden death during sports by appropriate intervention. 

An Italian prospective study demonstrated that young adults involved in sports have around three times greater risk of sudden cardiovascular death than their non-athletic counterparts (Figure 1). However, sport is not itself the cause of the enhanced mortality; rather, it acts as a trigger of cardiac arrest in those athletes affected by conditions such as genetic heart muscle diseases - hypertrophic cardiomyopathy, arrhythmogenic right ventricular cardiomyopathy (ARVC) and ion cardiac channel disorders - which predispose to life-threatening ventricular arrhythmias during physical exercise. The vast majority of at-risk athletes do not experience premonitory symptoms and thus pre-participation screening represents the only strategy able to identify the underlying cardiovascular disorder. The importance of early identification at this pre-symptomatic stage relies on the real possibility of SCD prevention by lifestyle modification, including restriction of competitive sports activity (if necessary), but also by prophylactic treatment with drugs and implantable defibrillators.

Screening protocols Both the AHA and ESC consensus panel recommendations agree that cardiovascular screening for young competitive athletes is justifiable and compelling on ethical, legal, and medical grounds. However, there is a considerable discordance in the guidelines on the protocols used. The debate is centred on the inclusion (or not) of a resting 12-lead ECG, in addition to a medical history and physical examination during evaluation. Scientific data on the efficacy of ECG screening relied on studies from Italy, the only country in the world where pre-participation evaluation is required by law and where a mass-screening programme, essentially based on 12-lead ECG, has been the practice for almost 30 years. This long-term experience has provided compelling evidence of screening efficacy in identifying young athletes with previously undiagnosed hypertrophic cardiomyopathy, which is the most important cause of SCD in young competitors. Moreover, during follow-up, no deaths were recorded among young athletes who were disqualified due to hypertrophic cardiomyopathy.

By comparing the incidence of SCD before and after implementation of the Italian screening programme, a 90% mortality reduction was found - from 3.6 per 100,000 athlete-years during the pre-screening period to 0.4 per 100,000 after a 25-year screening period (Figure 2). Although the study was not prospective and the trial, there is evidence of a strong causal relationship between ECG screening and reduction of SCD.

A characteristic of the study was that the heart of each victim was examined by the same team of cardiovascular pathologists according to a standard protocol. Estimates of sudden death in young athletes from other countries, registered by the U.S.A. or Spain, are limited by the lack of a mandatory and homogeneous reporting system for juvenile SCD. It took 25 years to generate the Italian data and demonstrate the success of the pre-participation ECG screening program. Until data from other studies of comparable prospective design, size and follow-up duration are obtained, the Italian studies provide the best available evidence of the efficacy of ECG screening for identifying at-risk heart diseases and preventing SCD in the athlete. If one accepts the principle sanctioned by the AHA, ESC and International Olympic Committee that cardiovascular screening for athletes can prevent sudden death, the question is whether the costs of screening are justified. The WHO has said that a number of criteria should be met before introducing a screening programme - that the condition should be an important health problem, that there should be a suitable test and accepted treatment for the condition, that the screening programme should be acceptable to the athletes and that the economic costs should be balanced in relation to medical expenditure as a whole. In the case of screening athletes to avoid SCD, most of these criteria pose problems. The incidence of SCD among young athletes has been reported to be much lower in countries outside Italy, the causes of SCD have been shown to differ between populations, with varying proportions likely to be identified by screening, and little is known of the screening performance in non-Caucasians. These facts affect the utility and cost-effectiveness of a screening programme. Furthermore, large-scale screening will result in a considerable number of athletes being inappropriately barred from participating in sports, the psychosocial, ethical, prognostic and even legal implications of which need to be elucidated.

Moreover, some studies indicate that risk of SCD is not higher among competitive athletes as a whole than among non-athletes. Even with proven efficient and cost-effective screening programmes, within European healthcare systems it may be hard to justify compulsory pre-participation screening for athletes but without screening those youngsters who have not chosen to participate in competitive sports. Each sudden cardiac death in a young person is tragic, whether athlete or non-athlete. This is undisputable. But we as cardiologists must keep a cool head. Before recommending the screening of athletes based on insufficient data from a single region in Italy, a number of issues need clarification. Above all, efforts should be made to gather the necessary data, including registry data of SCD in the young, to enable a prevention strategy which is evidence based, is cost-effective and respects the autonomy of the athlete.
Growth factors in the treatment of CVD
How basic science in cardiology is learning from oncology

By Janet Fricker
ESC Congress News

PROMOTING the growth of new collateral blood vessels in the myocardium with vascular endothelial growth factors (VEGFs) offers a new approach to the treatment of CVD, according to Kari Alltalo speaking at a Basic Science symposium on “Lessons from anti-cancer drugs” on Monday.

While angiogenic therapies are used to fight malignancies (which require an abundance of oxygen and nutrients to proliferate), the converse of pro-angiogenic therapies which stimulate the growth of vessels have the potential to treat CVD. In both situations VEGF proteins that stimulate vasulogenesis, angiogenesis and arteriogenesis have been the key. In cancer the strategy has been to adopt antibodies to neutralise VEGF (such as bevacizumab); in cardiology the idea is to increase levels of these proteins.

“The goal in CVD is to promote the development of supplemental blood conduits that will act as endogenous bypass vessels,” said Alltalo from the University of Helsinki, Finland, who explained that the process involves both angiogenesis (the growth of new blood vessels) and arteriogenesis (the remodelling and enlargement of pre-existing arteries). “We think these processes work in unison, with the angiogenesis dominant in the immediate area of hypoxia and arteriogenesis in the further afield vessels delivering blood to the area,” he said.

VEGF is a sub-family of growth factors composed of five closely related proteins, VEGF-A-D and placenta growth factor (PLGF), each of which stimulates cellular responses by binding to tyrosine kinase receptors specifically expressed in endothelial cells. It is now known that VEGF-A leads to vascular endothelial sprouting but has relatively few effects in lymphatic tissue; VEGF-B appears to be particularly highly expressed in cardiac tissue; VEGF-C is the main factor responsible for the formation of lymphatic vessels and also has some angiogenic properties; VEGF-D is thought to have similar properties to VEGF-C, and PLGF can produce arteriomalisation of small vessels.

After much initial interest in the therapeutic use of VEGF in CVD around the millennium, the field cooled considerably following publication of the VIVA trial in patients with stable exertional angina who were unsuitable for standard revascularisation (Circulation 2003:107:1399-1365). That study, led by Timothy Henry from the University of Minnesota, showed that, while administration of recombinant VEGF-A was safe, active treatment produced no greater beneficial effect on exercise capacity than placebo.

“In retrospective, we now think the negative effects were due to the delivery method and short half-life of the protein,” said Alltalo.

He now considers gene therapy with angiogenic factors to be the way forward for prolonged exposure to VEGFs. “Adenosine vectors are extremely safe, as they do not incorporate any of the genes into the human genome and they can be expressed in humans for around one to two weeks,” he said. “The disadvantage is that you only have one-shot at the approach. If you use the vector a second time, there’s an enhanced immune response to contend with but one treatment has appeared sufficient in our studies with pigs.”

Using the adenoviral platform, Alltalo is currently working with Seppo Tähtiharju from the University of Kuopio, Finland, to transfer genes of the VEGF family into the left ventricular wall with intracardiac catheters. “The technology incorporates sensors that allow us to target vulnerable areas around the ischemia with multiple injections,” he explained. “The recombinant VEGF-D promoted both angiogenesis and lymphatic vessel growth. In further studies the lymphangiogenic activity of VEGF-C was clearly beneficial for repairing damaged lymphatic vessels in pigs (Circulation 2011;123:613-20).

Other challenges for the field have been that in addition to promoting angiogenesis VEGF leads to increased vascular permeability and inflammation. “The results have been oedema, wall thickening, problems with vessel stability and sometimes anoma formation,” said Alltalo.

However, the latest studies with VEGF-B indicate that it appears to have fewer of these adverse effects. A recent study of VEGF-B in rats by Alltalo and colleagues showed that it induced impressive growth of the epicardial coronary vessels and their branches (Circulation 2010;122:1725-1733). The effect, however, was not observed in mice.

“The likely reason for the difference between mice and rats appears to be that we used a human gene that was better recognised by rat receptors. We’re checking this now,” said Alltalo, who hopes to start a clinical trial of VEGF-C using adenoviral transduction next year for lymphogenesis, and to also bring VEGF-B to the clinic.

Children provide the key to parents’ cardiovascular health

By Janet Fricker
ESC Congress News

Cardiovascular education programmes directed at school children reduce parents’ cardiovascular risk factors, according to a study presented in an abstract session today.

Investigator Luciana Fornari from the University of Sao Paulo, Brazil, was inspired to perform the study from her own experience as a mother. “Lessons my children learnt at school about environmental issues and recycling changed family attitudes,” she says. “Under their insistence, I even found myself using less water when I brushed my teeth. So I thought, why not try to influence children to influence cardiovascular prevention for the whole family.”

For the study 197 children aged six to 10 years from a private school in the city of Jundiai (about 60 km from Sao Paulo) were divided into two groups. Children in the control group (which also comprised 161 parents with a mean age of 39 years) were provided with written educational material at the beginning and middle of the 2010 academic year. The materials included information about healthy nutrition, a more active lifestyle and quitting smoking.

Children in the active group (which included 162 parents with a mean age of 38 years) were issued with the same material but also exposed to weekly educational programmes about CVD prevention which taught the concepts of healthy nutrition, tobacco avoidance and physical activity. The programme, delivered by a multidisciplinary team of nurses, PE teachers, physiotherapists, nutritionists and psychologists, included educational films and plays, discussion about healthy lifestyles, practical cooking sessions and opportunities to take part in family bike rides and Olympic-style events. Children were also encouraged to write and draw pictures about what they had learnt.

At the study outset and after one year the investigators collected data from parents and children about nutrition and exercise and recorded measurements of weight, height, waist circumference and blood pressure. From this data, risk estimations of the likelihood of parents experiencing cardiovascular disease over the next 10 years were calculated according to the Framingham Heart Study.

Measurements taken at the study outset showed that 9.3% (15) parents in the control group and 6.8% (11) parents in the active group were estimated to have a greater than 10% risk of developing CVD over the next 10 years. These figures represent a 91% risk reduction in the intervention group, compared to 13% reduction in the control group (p=0.0002).

“Children really do seem to have the ability to change the entire family’s attitudes,” says Fornari, who admits to surprise at the extent of the beneficial effect of child education on parents. The next step, she said, is to try to introduce similar programmes in state schools in Sao Paulo.

“Adenovirus vectors are extremely safe, as they do not incorporate any of the genes into the human genome and they can be expressed in humans for around one to two weeks,” he said. “The disadvantage is that you only have one-shot at the approach. If you use the vector a second time, there’s an enhanced

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The Azerbaijan Society of Cardiology has become the 54th National Cardiac Society to join the ESC. A vote taken at the Congress on Monday found a resounding majority in favour of acceptance. Representatives from Azerbaijan stood and received a round of applause from the General Assembly. Michel Komajda addressed the group, saying: “You are very welcome to the ESC family and we look forward to working with you.”

Azerbaijan Society of Cardiology becomes an ESC National Cardiac Society

The Azerbaijan Society of Cardiology becomes an ESC National Cardiac Society

At the ESC General Assembly yesterday, President Michel Komajda said: “All of us share satisfaction and pride to see our Congress so successful.” Speaking on behalf of the Board, he said: “It is indeed a good sign of the health of our society.” The brief reports by various officers show you that the Board is active, united and committed to further developing our society. We look forward to working even harder during the next year and we will be very pleased to see you in Munich.”

General Assembly

Fausto Jose Pinto, Vice President National Cardiac Societies and Affiliated Cardiac Societies: “The ESC Cardiologists of Tomorrow initiative, launched at ESC Congress 2010, has seen much activity and there are now 16 young organisations from 16 countries. We support the creation of new groups in other countries, which will be very important for the future of the society. Members of the new group have been deeply involved in the ESC - in the education committee and in the development of the new web platform. For Paris, the ESC offered up to 25 free registrations for young cardiologists per National Cardiac Society.”

Eva Swahn, Vice-President ESC Fellows: “Please urge your colleagues to apply to be a Fellow of the ESC. Cardiologists and cardiovascular scientists bearing the title of Fellow are recognised as the core group of ESC experts. The network provided within the fellow membership is important for improving the quality of cardiovascular research and clinical development. That is really the vision of the ESC. Being an ESC Fellow is a symbol of excellence.” The criteria for becoming a Fellow have now been simplified. Anyone interested can apply online, and the cut-off date is now 30 September.

Adam Torbicki, Vice President of Associations, Working Groups and Councils: “More than one in four ESC members now belong to a subspecialty group. Working Groups have between 100 and 700 members and make 33% of all visits to the ESC website. This part of the ESC is getting stronger and stronger.”

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When it comes to patient persistence with antihypertensive prescriptions, angiotensin receptor blockers (ARBs) seem to produce the best results, according to a German study presented as an abstract. The study, based on real-life data from GP practices, showed that in Germany and France fixed-dose ARB combinations were associated with the best persistence, whereas in the UK simple ARBs achieved the best results.

According to the International Society for Pharmacoeconomics and Outcomes Research (ISPOR) compliance is defined as the extent to which a patient acts in accordance with the prescribed interval and dose, whereas persistence is defined as the duration of the time from initiation of therapy to discontinuation. The importance of persistence was underlined in a recent study by Joerg Mathes and colleagues from health economics and OUTcomes Research in Nuremberg, Germany, who identified a correlation between persistence and the risk for a first hypertension-associated event (Int J Clin Pharmacol Ther 2010;48:173-83).

“Since hypertension is a chronic disease, only the constant intake of medication leads to the required protection and avoidance of events,” said Birgit Ehlken, the first author of the paper. In the abstract study she and colleagues in Munich performed a retrospective database analysis to evaluate the persistence of patients receiving different classes of antihypertensive drugs in France, Germany and the UK. Treatment patterns were investigated for ARBs and mono, dual and triple therapy, and also for unfixed and fixed dose combinations.

The study utilised a database which holds patient data from a representative sample of GP practices in five European countries. To analyse persistence, the databases for France, Germany and UK were searched for patients with a hypertension diagnosis started on different classes of antihypertensive drugs between September 2008 and August 2009, with individuals followed-up for at least a year. A total of 13,437 patients in France, 68,341 in Germany, and 16,165 in the UK were identified for analysis.

Results showed that overall, the highest level of persistence was achieved by ARBs (fixed-dose combinations 62% in France, 71% in Germany, and 66% in the UK), followed by beta blockers (58%, 68%, and 66%), ACE inhibitors (49%, 58%, and 66%), and calcium channel blockers (52%, 56%, and 67%); the lowest level of persistence was found with diuretics (51%, 55% and 67%).

The mean duration of persistence per patient in France varied from 249.1 days with plain ACE inhibitors to 289.1 days with ARB combinations; in Germany it varied from 265.0 days with diuretics to 305.4 days with ARB combinations; while in the UK it varied from 283.7 days with diuretics to 314.6 days with plain ARBs.

“In situations where persistence and compliance are of high relevance to treatment outcomes ARBs may play an important role,” said Ehlken, adding that the relatively favourable safety profile of ARB therapy was probably influential. The current results, she said, proved similar to a systematic literature review by Bramlage et al, which showed that over a 12-month period persistence was generally higher with ARBs than with ACE inhibitors, calcium channel blockers, or diuretics (Cardiovasc Diabetol 2009;8:18).

The fact that persistence appears to be higher in the UK than in France and Germany, she said, may be because of better medication-taking behaviours among UK patients. “This might be influenced by factors such as physician-patient communication, social environment and health insurance status, but more studies are needed to answer this question.”

The investigators now hope to see whether the patterns of persistence with the different anti-hypertensive medications continue at 24 months and whether there are any differences in findings for patients taking different ARBs.
What’s your take-home message from this meeting?

“I’d single out the guidelines on managing cardiovascular disease in pregnancy. They describe how to deal with pregnant patients, how to treat them during the pregnancy, the medications to use and the dose. They also cover post-partum cardiomyopathy. In my daily practice, I don’t see pregnant women often but we do need to know how to deal with them. You can check your opinion against guidelines and I will in future be much more confident in making decisions on the treatment. It’s important to help the woman feel healthy during the pregnancy and to safely deliver a healthy child.”

“I’ve been excited by omecamtiv mecarbil, a new positive inotrope for heart failure that has a novel mechanism of action not based on stimulating protein kinases. It works directly at the level of the muscle improving the number of active myosin bridges formed. This means there’s no negative impact on oxygen consumption or calcium transit, which can both trigger arrhythmias. Both intravenous and oral preparations will be available so it will be possible to use it in ITU for cardiogenic and septic shock. This all comes with the caveat that, historically, inotropes from digoxin to milrinone have had a poor history in heart failure.”

“In my judgement, the most important message has been on oral anticoagulation and the treatment of atrial fibrillation with drugs such as dabigatran. It hasn’t been a surprise, but I’ve attended sessions that provided me with new information about the timing of treatment, and ways to anticoagulate correctly. It is a good thing finally to have some alternatives to warfarin. Some new drugs like amiodarone may offer reversion to sinus rhythm and they’re generating expectations. All of these drugs will change practice – they’re already changing practice in the countries where they’re available – but that doesn’t include Uruguay yet.”

“There have been a lot of messages from this Congress but I’m most interested in leadless pacemakers, which I think will be a real advance for patients and make their lives much easier. They can also be placed very precisely, and are associated with fewer infections and a lower risk of cardiovascular complications. There are still issues to be resolved with these pacemakers – there may be difficulties with recharging, and follow-up could be complicated – but they’ll be a real advance. I hope they will be available in Spain soon – and that they’re not too expensive for us to use.”

“I would single out the guidelines on managing cardiovascular disease in pregnancy. They describe how to deal with pregnant patients, how to treat them during the pregnancy, the medications to use and the dose. They also cover post-partum cardiomyopathy. In my daily practice, I don’t see pregnant women often but we do need to know how to deal with them. You can check your opinion against guidelines and I will in future be much more confident in making decisions on the treatment. It’s important to help the woman feel healthy during the pregnancy and to safely deliver a healthy child.”

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