

Congress News

Monday 27 August 2018

Top picks

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Results from COMPASS



The ESC
helps bring
your ideas
to life



ASCEND study results: Definitive data on the use of aspirin and omega-3 fatty acids in diabetic patients



**Prof.
Jane Armitage**



**Prof.
Louise Bowman**

Yesterday, the presentation of Hot Line results from the UK ASCEND (A Study of Cardiovascular Events in Diabetes) study¹ brought us closer to finding out whether aspirin or omega-3 fatty acid supplements are useful for primary prevention of cardiovascular events in individuals with diabetes and no prior history of cardiovascular disease.

Starting in 2005, 15,480 patients with diabetes (94% had type 2) were randomised to receive aspirin 100 mg daily or matching placebo and, separately in a factorial design, omega-3 fatty acid supplements or matching placebo. Participants were followed for a mean of 7.4 years.¹

Patients had a mean age of 63.3 years, 63% were male, 83% were overweight and 62% had hypertension. Diabetes was managed with

agents other than insulin in most cases (58%) and, in fewer cases, by insulin (alone or with other agents, 25%) or diet alone (16%).¹

The composite primary efficacy outcome (shown in 9% of patients overall) was non-fatal myocardial infarction, non-fatal stroke or transient ischaemic attack or vascular death (excluding confirmed intracranial haemorrhage). The primary safety outcome for the aspirin comparison (experienced by 4% of patients overall) was any major bleed.¹ Information was available at the end of the study for over 99% of participants.

Professor Jane Armitage (Nuffield Department of Population Health, University of Oxford, Oxford, UK), who presented results of the aspirin analyses reports, "There was a significant 12% reduction in serious vascular events (8.5% vs 9.6%; rate ratio, 0.88; 95% confidence interval [CI], 0.79-0.97; p=0.01). In

contrast, major bleeding was increased by 29% (4.1% with aspirin vs 3.2% with placebo: rate ratio, 1.29; 95% CI 1.09-1.52; p=0.003), with most of the excess being gastrointestinal (GI) bleeding and other extracranial bleeding.^{2"}

"The benefits from avoiding serious vascular events with aspirin were largely counterbalanced by the excess of major bleeds it caused."

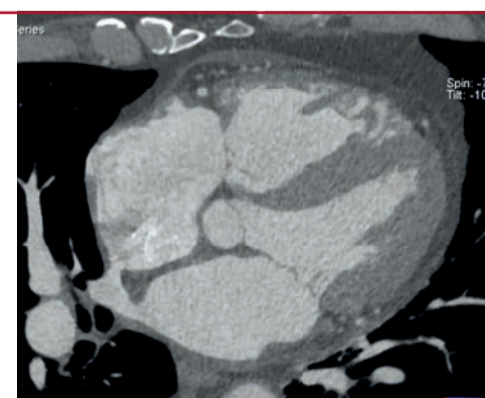
Continued on page 2...

What's Your Diagnosis?

BROUGHT TO YOU BY THE EUROPEAN ASSOCIATION OF CARDIOVASCULAR IMAGING (EACVI)

Contrast-enhanced cardiac CT in a 63-year-old patient.

Stephan Achenbach, Friedrich-Alexander University Erlangen-Nürnberg, Germany



Answer on page 2.

NEW

**Research
Funding Area
in ESC Plaza**

- Meet funding partners
- Network with research project consortiums
- Find out about ESC Grants

www.escardio.org/Research-Funding



...continued from page 1

There was no significant effect of aspirin on incident cancers–GI (approximately 2% in each group) and others (11.6% with aspirin vs 11.5% with placebo)–and no suggestion that benefits were beginning to emerge with longer follow-up.

“Average adherence to omega-3 fatty acid capsules was 77%, but this did not impact the primary outcome of serious vascular events,” says Professor Louise Bowman (Nuffield Department of Population Health, University of Oxford, Oxford, UK). “During follow-up, serious vascular events occurred in 8.9% receiving omega-3 fatty acids and 9.2% receiving placebo (rate ratio, 0.97; 95% CI, 0.87–1.08; p=0.55). There was also no effect on the composite outcome of a serious vascular event or revascularisation (11.4% vs 11.5%, respectively), and no significant between-group differences in the rates of nonfatal serious adverse events.”

“ASCEND provides robust data from one of the longest duration and largest studies of omega-3 fatty acid supplements, offering some certainty about their lack of any clear benefit, although they appear to be safe. This supports recent meta-analyses findings and should lead to reconsideration of guideline recommendations,” she says.

“The aspirin results are also important,” says Prof. Armitage, “as there has been major uncertainty about whether or not aspirin should be routinely used for primary prevention in diabetes. In the context of the well-treated ASCEND population, the overall benefit of a reduction in occlusive vascular events was lost when the increase in major bleeds was taken into account.”

1. Bowman L, et al. Am Heart J 2018;198:135-144.
2. The ASCEND Study Collaborative Group. N Engl J Med 2018;August 26:doi:10.1056/NEJMoa1804988
3. The ASCEND Study Collaborative Group. N Engl J Med 2018;August 26:doi:10.1056/NEJMoa1804989

Research Funding Area: Support for researchers in cardiovascular diseases



Have you got the next great idea to transform cardiovascular medicine but lack the funds to proceed? Then make a beeline for the Research Funding Area on the ESC Plaza. There, throughout each day of the ESC congress, you can meet with representatives from The British Heart Foundation, The European Research Council and the European Research Area Network on Cardiovascular Diseases and discover new funding opportunities offered by these agencies and the ESC.

Supporting excellence in research is one of the five strategic pillars of the ESC. Professor Barbara Casadei, ESC president-elect, says; “Taking part in innovative world-class research that responds to unmet needs in cardiovascular medicine is a critical element of our mission. The Society aims to support excellence in research and innovation through

grants and fellowships, and by partnering in innovative research programmes that advance cardiovascular health.”

As well as the Research Funding Area, you should also attend today’s symposium on ‘Support for CV research and researchers – where is the funding and how to get it’ (Monday, 12:45 – 14:00; Agora 2 – Agora), chaired by Axel Pries (Germany) and Grzegorz Owsianik (Belgium). The objective of the session is to facilitate researchers’ access to funding bodies and demystify the people and process behind successful applications for research funding.

“Part of our research strategy is to get young people inspired to engage in research and support them through training and by partnering with funding agencies,” says Prof. Casadei. “Every trainee should engage in research if they aspire to become the best cardiologist they can be.”



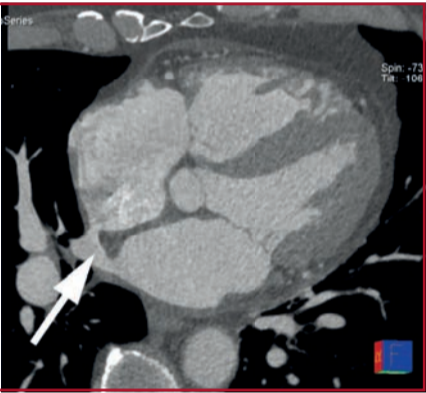
Don’t miss!

Today’s symposium at 12:45 in Agora 2 ‘Support for CV research and researchers – where is the funding and how to get it’

What’s Your Diagnosis? Solution

BROUGHT TO YOU BY THE EUROPEAN ASSOCIATION OF CARDIOVASCULAR IMAGING (EACVI)

Contrast-enhanced CT shows a sinus venosus defect (arrow), a shunt between the atria usually near the superior vena cava and frequently associated with partially anomalous pulmonary venous return.



Workplace challenges for cardiologists and what we can do to overcome them



Prof. Barbara Casadei

How is your career? Are you satisfied? Is it advancing the way you would like? These fundamental questions may be greatly influenced by your age and where you work, according to the results of an extensive survey performed by the ESC.

The ESC C-Change (culture change) survey was completed by 3,848 ESC members across 17 European countries. Full results will be published later this year.

Overall, European cardiologists and cardiovascular research scientists appear to be highly motivated, have strong leadership aspirations and a high degree of personal satisfaction in their work. However, institutional support, work-life balance and ethical/moral distress are a concern for many. About one in four cardiology professionals across Europe feels that their institution is not providing optimal opportunities for meaningful work, and around one in three feels unsupported in their professional development or career advancement.

Professor Barbara Casadei, ESC President Elect, said, “In any workplace, the environment can have a significant impact on how a person does his or her job. Burnout and disaffection can take a heavy toll on

our profession and consequently on our patients. Our aim was to probe the culture of cardiology departments across Europe, raise awareness of challenges and opportunities, and identify new initiatives the ESC can put in place to support its members.”

Career progression in cardiology is influenced by many factors, which may vary depending on age, gender and geographical location. A supportive working environment is an important step towards achieving one’s full career potential.

The findings were often influenced by where respondents worked and their particular career stage. Cardiologists in Southern Europe (Greece, Israel, Italy and Spain) and Eastern Europe (Bulgaria, Czech Republic, Hungary, Poland and Romania) were more likely to feel a lack of institutional support. For example, only 32% of southern respondents felt their institution provided enough support and was committed to their career success, compared with 52% in Northern Europe (Denmark, Norway, Sweden and the UK). About one in two professionals anticipated difficulties in succeeding without sacrificing personal life and family (up to 65% for those aged less than 40 years).

“The general assumption is that medicine is a meritocracy,” said Prof. Casadei. “If you’re talented and work hard you will succeed.

In reality, ‘success’ is the product of the opportunities that are on offer and what one does with them. If the range of opportunities on offer differs across geographical regions in Europe, ethnic groups or genders, then it becomes very difficult to compare the level of achievement. I find the waste of talent that results from lack of opportunities and encouragement heart breaking.”

“These findings indicate an opportunity for institutions to invest more in the personal and professional development of their staff, which should lead to improved patient care and greater physician satisfaction and productivity,” said Prof. Casadei.

On the up side, the survey found that institutions could do more to prevent ‘burnout’—something that affects cardiologists everywhere, but particularly females in Eastern Europe (45%), and mid-career professionals (42% of women and 31% of men in the 40 to 54 years age bracket). Geographical disparities could be improved by providing more opportunities for training fellowships and exchange, and by empowering cardiologists with better tools to negotiate their position in their workplace. To this end, the ESC has built a portfolio of initiatives targeted at young professionals (ESC Cardiologists of Tomorrow) as well as dedicated support for developing leadership skills (ESC grants for the Women Transforming Leadership Programme); further training activities are being planned.

Doctor Harri Sivola from the Oulu University Hospital in Finland and member of the ESC’s Cardiologists of Tomorrow nucleus said, “It is extremely important for clinicians to feel valued, trusted and respected by their colleagues. It diminishes stress and helps us develop the skills and confidence to achieve success in our career. Providing both mentorship and decision-making opportunities for young cardiologists would be a valuable way of facilitating this.”

Doctor Vijay Kunadian from Newcastle University and Freeman Hospital in the UK and Co-Chair of the EAPCI Scientific Documents and Initiatives Committee added, “It really is very frustrating that in this day and age we continue to see gender disparities in medicine, cardiology, interventional cardiology (6% are women!) and academia. It is critical for women to be in an encouraging, supportive environment so that the current and future workforce in cardiology is strengthened/nurtured to provide the best possible care to our patients with cardiovascular disease, which unfortunately still remains world’s number one killer.”

Prof. Casadei concluded, “Investing in people and promoting a supportive culture at work are transformational, low-cost interventions. The ESC will use the findings of the C-Change questionnaire to further develop strategic initiatives that support cardiologists and encourage institutions to create a work environment that allows professionals to aim high and be energised by work.”

Millimetre wave full body scanners do not interfere with cardiac implantable devices



Dr. Carsten Lennerz

There have been reports in recent years of electromagnetic interference (EMI) from security systems, such as metal detector devices (e.g. walk-through full body scanners) at airports, which could impact on the functioning of cardiac implantable electronic devices (CIEDs).

Interference could cause the device to malfunction, potentially leading to spontaneous reprogramming of the device, an unprompted switch to a different mode, administration of inappropriate therapy or failure of therapy. Recently the US FDA called the electromagnetic compatibility of metal detectors with CIEDs into question. However, security checkpoints are changing due to the increasing use of millimetre wave body scanners, which can detect both metal and non-metal threats. Currently, people with CIEDs must be informed of the applied millimetre wave body scanner technique and are asked not to undergo a body scanner check.

Yesterday, a late-breaking study presentation by Doctor Carsten Lennerz (German Heart Center Munich, Department of Electrophysiology, Technical University Munich, Germany) reported that concerns over EMI with an innovative millimetre wave body scanner were unfounded. Dr. Lennerz says, “We wanted to provide reliable evidence on the safety of security body scanners for people with CIEDs to address patient anxieties and prevent unnecessary restrictions on these patients passing through security checkpoints.”

The investigators recruited 302 patients with CIEDs (pacemakers, implantable cardioverter defibrillators and cardiac resynchronisation therapy devices) who attended their routine follow-up appointment at the German Heart Centre Munich between May 2017 and July 2018. The patients were exposed to the electromagnetic fields generated by a millimetre wave body scanner (R&S QPS, Rohde & Schwarz, Germany) and were subsequently analysed for the presence of any EMI events.


Once regular scans were completed, patients were positioned in close proximity to, and behind, the scanner itself. Based on the presented study the prevalence of EMI events from a millimetre wave body scanner is 0% (0/302) (95% confidence intervals 0-1.2).

The study found no evidence of electromagnetic interference from millimetre wave body scanners impacting the functioning of CIEDs.

Dr. Lennerz suggests that the findings are in line with what would be expected given the frequency used in the scanning device (70-80 GHz), the low penetration depth of millimetre waves in biological tissue and the very short duration of scans (approximately 100 milliseconds). He adds, “Our study suggests there is no need for specific protocols in the use of millimetre wave body scanners, which are widely used at airports and other security checkpoints, for individuals with CIEDs.”

“We believe that, on the basis of this study, no restrictions for the use of millimetre wave scanners on CIED patients are necessary.”

He thinks that these results could also help to avoid any stigma that individuals with CIEDs may be subjected to while undergoing security checks at airports or elsewhere.



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Dr. Martha Gulati @DrMarthaGulati
So awesome what @escardio is doing this year for young investigators and clinicians #ESCCongress

European Cardiology @escardio
What does the ESC offer for the young community? @SilCastelletti and @krychtiukmd share their thoughts #ESCCongress

ESC Congress News

ESC Congress News is brought to you by Editors, Steen Dalby Kristensen, Stephan Achenbach, Kurt Huber and Freek W.A. Verheugt. Medical writing assistance was provided by TMC Strategic Communications. We do hope you enjoy these daily contributions show-casing some of the exciting varied content of ESC Congress 2018.



Anticoagulation and cancer: will recent evidence change the clinical practice?

Satellite Symposium - Experts on the Spot

Tuesday 28 August 2018
10:15-10:45
Beethoven - The Hub
Messe München - Munich, Germany

10:15	Introduction Gregory Y. H. Lip, UK
10:20	Anticoagulation in cancer associated VTE Marcello Di Nisio, Italy
10:25	How to handle patients with cancer and AF? José Luis Zamorano, Spain
10:30	Panel discussion and conclusions All



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MARINER: Rivaroxaban in patients at high risk of VTE after hospital discharge?



Prof. Alex Spyropoulos

A significant proportion of acutely ill medical patients who are discharged from hospital are at risk of venous thromboembolism (VTE); the greatest risk is found within the first six weeks post-discharge, when the rate of symptomatic VTE more than doubles and the rate of fatal pulmonary embolism (PE) increases five-fold.^{1,2}

The MARINER (Medically ill patient Assessment of Rivaroxaban versus placebo IN reducing post-discharge venous thrombo-Embolism Risk) trial investigated the efficacy and safety of extended thromboprophylaxis with rivaroxaban in hospitalised, medically ill patients deemed to be at risk for post-discharge VTE.³ The key primary efficacy outcomes (symptomatic VTE and VTE-related death) and safety outcome (major bleeding) were shared for the first time by Professor Alex Spyropoulos (The Donald and Barbara Zucker School of Medicine, Northwell Health System at Lenox Hill Hospital, New York, New York, USA) in a Hot Line session yesterday.⁴ The findings of this large randomised, double-blind, placebo-controlled study have been awaited with interest as current guidelines suggest against routine extended thromboprophylaxis (beyond the acute hospital stay) in this patient population. “This is due to uncertain overall clinical benefit further to experience in clinical trials of extended thromboprophylaxis, with reports of either limited efficacy or efficacy based on mainly reducing asymptomatic deep vein thrombosis or increased rates of major bleeding,” Prof. Spyropoulos explains.

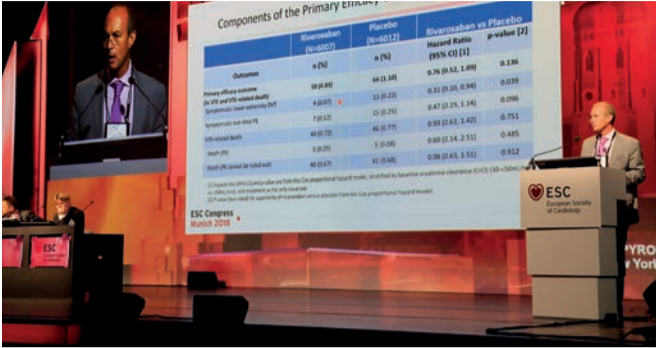
Outlining the study details, Prof. Spyropoulos notes that more than 12,000 patients were randomised at 671 sites across 36 countries. Patients were assessed for risk of VTE based on a validated risk assessment model (International Medical Prevention Registry on Venous Thromboembolism [IMPROVE] score) and elevated plasma levels of a D-dimer biomarker. At hospital discharge they were randomised to either rivaroxaban (10 mg/day if creatinine clearance was 50 mL/min or greater or 7.5 mg/day if creatinine clearance was reduced [30 to <50 mL/min]) or placebo for 45 days.

At baseline, 18.3% of patients had reduced creatinine clearance and the most common diagnoses leading to study entry were heart failure (40.2%), respiratory insufficiency (26.5%), infectious disease (17.4%) and ischaemic stroke (14.4%). Just over half of the patients were taking aspirin and a small proportion (8.5%) had a history of cancer. Also at baseline, more than two-thirds of the population had elevated D-dimer levels and just over one-third had an IMPROVE score ≥ 4 .

The MARINER study results showed that at 45 days, there was no significant difference between rivaroxaban and placebo for the primary efficacy endpoint: a composite of symptomatic VTE and VTE-related death.

The incidence of the primary efficacy endpoint was 0.83% for rivaroxaban compared with 1.1% for placebo (p=0.136).

“However,” says Prof. Spyropoulos, “pre-specified secondary analyses—that should be considered exploratory—examining only symptomatic VTE revealed a significant 56% relative risk reduction with rivaroxaban, with an incidence rate of 0.18% compared to 0.42% with placebo (p=0.023), as well as a



significant 27% relative risk reduction in symptomatic VTE and all-cause mortality, with an incidence of 1.56% in the rivaroxaban group versus 2.00% in the placebo group (p=0.033).” He continues, “There was no significant difference between groups in major bleeding, which occurred at a very low incidence of 0.28% in patients receiving rivaroxaban compared with 0.15% in those receiving placebo (p=0.124). Lastly, the 7.5 mg dose of rivaroxaban did not appear to have a treatment effect in the group of patients with moderate renal insufficiency, with the incidence of the primary efficacy outcome being identical in the rivaroxaban and placebo groups (1.64% in both, p=0.994).”

“MARINER demonstrates that acute medically ill patients discharged from the hospital are at risk of VTE for up to six weeks post-hospital discharge, even though these events are largely preventable,” says Prof. Spyropoulos. “Exploratory analyses of symptomatic VTE in this study that include non-fatal pulmonary embolism suggest a possible benefit of rivaroxaban. Given the very low rates of major bleeding with rivaroxaban seen in MARINER, these overall findings give us important insights into the optimisation of treatment strategies for preventing VTE in selected acutely ill medical patients once they leave the hospital, with potential to decrease the populational health burden of non-fatal VTE.”

1. Spyropoulos AC, Raskob GE. Thromb Haemost 2017;117:1662-1670.
2. Spyropoulos AC, et al. Chest 2011;140:706-714.
3. Raskob GE, et al. Thromb Haemost 2016;115:1240-1248.
4. Spyropoulos AC, et al. N Engl J Med 2018;August 26;doi:10.1056/NEJMoat1805090.

Abstract of the day:

Deviation from normal sleep duration increases CV risk

Adults who sleep for less than 6 hours or more than 8 hours on a daily basis are at increased risk of cardiovascular disease (CVD) or CV death, according to the results of a meta-analysis of published studies presented yesterday (Abstract P2540).

A team from the Onassis Cardiac Surgery Center in Athens, Greece, evaluated the impact of sleep duration on CV health by performing a meta-analysis of 11 prospective studies published within the last 5 years that included 1,000,541 adults with no known CVD. The results, presented by Doctor E. Fountas, revealed that people who had either a short (<6 hours) or long (>8 hours) sleep duration were at significantly greater risk of CVD or death compared with a reference group who slept for 6-8 hours per night. The authors found no evidence of publication bias or significant heterogeneity, although moderate heterogeneity was noted in the analysis of short sleep duration, which did not appear to influence the results of the meta-analysis.

Dr. Fountas says, “Too little or too much sleep is bad news for the CV system. We found that sleeping for too long was potentially worse than sleeping too little, with a 32% greater relative risk of morbidity and mortality from stroke, coronary heart disease or CVD compared with the reference sleep duration. Short sleep duration increased the relative risk by 11%.” He adds, “Either way, both too little and too much sleep are significantly linked to CV risk.”

Let's Talk About Strategy - Case Discussions with the Masters
Centre Stage today at 14:30

How would you treat this lesion? Join a panel of global experts in percutaneous coronary intervention (PCI) in a lively debate at the 'Let's Talk About Strategy' session on the Centre Stage today at 14:30. Moderators, Stephan Achenbach and Marco Roffi, will pick the brains of Jean Fajadet, Antonio Colombo, Julinda Mehilli, Martin Leon and Helge Möllmann, with audience interaction actively encouraged. “For me, this is one of the highlights of the entire congress,” states ESC Congress Programme Committee Chairman Stephan Achenbach, interventional cardiologist at the University of Erlangen, Germany. “This session is a fun and entertaining way to directly learn from some of the most experienced and didactically skilled interventional cardiologists worldwide—a not-to-be-missed opportunity for early and expert PCI operators alike.”

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Weight-loss drug does not increase major cardiovascular events in high-risk obese patients



The findings of the landmark randomised controlled trial, CAMELLIA-TIMI 61, to investigate the cardiovascular safety and efficacy of the weight-loss drug lorcaserin, were reported yesterday in a Hot Line session by Doctor Erin Bohula (Brigham and Women’s Hospital, Boston, Massachusetts, USA) from the Thrombolysis In Myocardial Infarction (TIMI) study.¹

The trial involved 12,000 overweight or obese patients with established cardiovascular disease or diabetes and at least one weight-related health condition, such as high blood pressure or high cholesterol, from 473 centres across eight countries.

CAMELLIA-TIMI 61 is the largest cardiovascular outcome trial to date for a weight-loss medication.

With a median follow-up of 3.3 years, lorcaserin did not increase the incidence of major adverse cardiovascular events (MACE)—its primary safety endpoint—compared with placebo (6.1% vs 6.2%, respectively; $p < 0.001$). “This is the first approved chronic weight-management medication to demonstrate safety for MACE in a dedicated, long-term cardiovascular outcome trial,” comments Dr. Bohula. However, the trial did not reach its primary efficacy endpoint, the rate of the composite of MACE/hospitalisation for unstable angina/heart failure/coronary revascularisation being similar with lorcaserin and placebo (11.8% and 12.1%, respectively; $p = 0.55$).

“Lorcaserin effectively aids weight loss in obese patients at a high risk for cardiovascular events without increasing the rate of MACE.”

“Patients taking lorcaserin lost a greater amount of weight in the first year than those receiving placebo (4.2 kg and 1.4 kg, respectively, $p < 0.001$) and at one year, significantly more of them had lost at least 5% of their body weight (39% vs 17%, $p < 0.001$),” she notes, adding, “We also observed small but significant

improvements in multiple cardiovascular risk factors, including triglyceride levels, blood pressure and new onset diabetes.”

Side effects of lorcaserin were consistent with those documented previously—including dizziness, fatigue, headache and nausea—and there was also a higher incidence of serious hypoglycaemia in patients receiving the drug. An echocardiographic substudy revealed a greater incidence of valvular disease at one year with lorcaserin (1.8% vs 1.3% with placebo), but this did not reach statistical significance.

“Whilst education and lifestyle modifications are key for weight management, some overweight or obese patients require additional help to manage their weight over the longer term,” explains Dr. Bohula. “It is important for patients and physicians to know that pharmacologic agents that can assist with long-term weight management are not only effective for weight loss, but also safe from a cardiovascular perspective. The CAMELLIA-TIMI 61 trial is the first demonstration of cardiovascular safety for any weight-loss agent. As such, it provides an additional therapeutic option for these patients.”

1. Bohula EA, et al. N Engl J Med 2018;August 26;doi:10.1056/NEJMoa1808721.

ACTELION SATELLITE SYMPOSIUM
MONDAY, 27 AUGUST 2018, 13:00 – 14:00
ROOM BRUSSELS – VILLAGE 4

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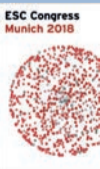
Stephan Rosenkranz (Co-Chair), Cologne, Germany
Adam Torbicki (Co-Chair), Otwock, Poland
Fabrice Bauer, Rouen, France
Vallerie McLaughlin, Ann Arbor, USA



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Sessions of the day

7:30		
Bach	General cardiology crash course - part 2	
Beethoven	Blood pressure management in acute stroke	
Haendel	Join the new world of cardiac telerehabilitation	
Schumann	Taking Point-of-Care ultrasound to Centre Stage	
8:00		
ESC TV Stage	Monday 27 August - Breakfast Buzz	
8:30		
Munich	2018 ESC/EACTS Guidelines on Myocardial Revascularisation	
Copenhagen	Lipid-lowering therapy: how to tailor treatment to your patient	
Centre Stage	Late Breaking Registry Results 1	
Bach	New frontiers in interventional cardiology	
Beethoven	Key messages from the most popular ESC webinars	
Brahms	The Lancet - ESC symposium on heart failure	
Digital Health Stage	Novel technology within cardiology - The role of the nurse	
Ankara	Management of cardiogenic shock in acute coronary syndromes - The "Shock Team" at work	
Minsk	Chronic ischemic cardiovascular disease - The "Big Picture"	
Belgrade	Expert Advice - Pragmatic approaches in challenging cardiomyopathies	
Yerevan	Rheumatic valve disease at various stages in life	
Tirana	CT for cardiac interventions	
Damascus	Deep vein thrombosis and peripheral vascular diseases: review, update, and State of the Art in 2018	
Bern	Big data, precision care: where are we now and where will we be in the future?	
Bratislava	Must hypertension be redefined?	
Algiers	Expert Advice - Tips, Tricks and Pearls in echocardiography for valve disease	
Brussels	Novel approaches to sinus node disease	
Ljubljana	Lost in translation: the crisis of reproducibility in pre-clinical cardiovascular research	
Baku	Gaps in evidence - How to proceed when the Heart Failure Guidelines do not provide a definite answer	
Moscow	Expert Advice - When drugs alone are not enough: novel devices in heart failure and their clinical role	
Kiev	Who really needs an implantable device in 2018 - And which one?	
Tunis - Library Room	Fractional flow reserve, iFR and pd/pa: controversial issues in the assessment of lesion-specific ischemia	
Madrid	Atrial fibrillation - The “Big Picture”	
Haendel	Cardiogenic shock following myocardial infarction: beyond the mechanics	
Schumann	Clinical Importance of quantification in imaging	
Agora 1	Pulmonary hypertension: progress in management, impact on outcomes	
Agora 2	Hypertension - Epidemiological and diagnostic aspects	
Science Box 1	Challenges in improving risk prediction	
Science Box 2	Heart Failure: new targets for treatment	
San Marino	Advances in structural heart interventions	
Stockholm	Cardiac remodelling in athletes	
Vienna	Coronary CT angiography: a new "crystal ball"?	
Cairo	A look from the other side: the pathology of complications following transcatheter intervention	
10:05		
Munich	Meet the Task Force of the 2018 ESC/EACTS Guidelines on Myocardial Revascularisation	
Centre Stage	The European Heart Journal's advances in heart failure and valvular heart disease: the year in cardiology	
Digital Health Stage	HF and Digital Health	
10:10		
ESC TV Stage	Meet the trialist - ARRIVE	
10:15		
Bach	Evolving approaches to the management of hypertension: combination therapy for all? - Experts on the Spot organised by SERVIER	
Beethoven	Residual cardiovascular risk after an acute coronary syndrome: identifying, stratifying and managing patients at long term risk of atherothrombotic cardiovascular events - Experts on the Spot organised by AstraZeneca	
Brahms	Atrial fibrillation patients who develop acute coronary syndrome: is there a role for aspirin? - Experts on the Spot organised by Pfizer	
Haendel	Rivaroxaban in cardiovascular protection - Getting to the heart of the matter - Experts on the Spot organised by Bayer AG	
Schumann	Oral anticoagulation in atrial fibrillation - Translating clinical trial data into daily practice - Experts on the Spot organised by Daiichi Sankyo Europe GmbH	
11:00		
Munich	Hot Line Session 3	
Centre Stage	Live in the Box: PCI in stable angina - Current status and a view into the future	
Bach	Statistics and clinical trials: a guide for the aspiring cardiologist	
Beethoven	Novel ESC Guidelines 2017/2018 - put into perspective	
Brahms	How to publish in JAMA and JAMA Cardiology	
Schumann	Cardiac anatomy for interventional cardiologists	
Digital Health Stage	Remote monitoring/ECG/Wearables	
Ankara	Cardiology 10 years from now - My predictions and how to get yourself ready	
Minsk	Managing STEMI in patients on oral anticoagulation	
Belgrade	Expert Advice - The one session that teaches you all you ever need to know about Mitral Valve Prolapse	
Yerevan	Global perspectives on valvular heart disease	
Cairo	The Future of TAVI-Perspectives from both sides of the Atlantic	
Tirana	Safer stents and strategies: is it time for the de-escalation of dual antiplatelet treatment regimes?	
Damascus	Antithrombotic therapy in patients with lower extremity arterial disease	
Bern	Preventive cardiology: review, update, and State of the Art in 2018 - Part 1	
Algiers	Multi-modality imaging approach for heart failure management	
Vienna	CT in coronary artery disease	
Ljubljana	Aortic stenosis: translating mechanisms and risk factors to treatments	
Kiev	Imaging of the atria: can we diagnose early atrial cardiomyopathy?	
Tunis - Library Room	How women are different from men and why you should care	
Madrid	Current state and future developments in multidisciplinary atrial fibrillation care	
Haendel	Risk management in cardiac surgery	
Agora 1	CT-FFR and CT-Perfusion: a river of knowledge	
Agora 2	From implantation to extraction: current issues in device treatment	
Science Box 1	Inflammation and immunity. A translational view	
Science Box 2	Implantable devices: what's new?	
San Marino	Myocardial infarction and non-obstructive coronary artery disease: MINOCA in men and women	
Copenhagen	Antiplatelet therapy in PCI	
Baku	Atrial fibrillation in heart failure	
Moscow	Heart failure: the nemesis of Diabetes	
Bratislava	Hypertension awareness, treatment and control: implications for clinical practice. Symposiumorganised by International Society of Hypertension (ISH)	
Stockholm	How do SGLT2 inhibitors and incretin-based therapy exert their effects on cardiovascular disease? Symposiumorganised by European Association for the Study of Diabetes (EASD)	
Brussels	Tissue engineering for myocardial regeneration and repair. Symposiumorganised by ESC Working Group on Cardiovascular Regenerative and Reparative Medicine	
12:40		
ESC TV Stage	Meet the trialist - ASCEND	
12:45		
Digital Health Stage	Start-up case studies told by the insider	
Agora 2	Support for CV research and researchers - Where is the funding and how to get it	
13:00		
Centre Stage	SGLT2 inhibition and heart failure: a different way of thinking? - Satellite Symposium organised by AstraZeneca	
Bach	What is new in implantable cardiac devices? - Satellite Symposium organised by Medtronic	
Beethoven	Transforming patient care delivery: high-sensitivity cardiac troponin-i and cardiac imaging for the early diagnosis of myocardial infarction - Satellite Symposium organised by Siemens Healthineers	
Brahms	Evolution of quality of care for aortic stenosis treatment - Are we making progress in Europe? - Satellite Symposium organised by Edwards Lifescience	
Haendel	Aortic stenosis treatments? I know it all! - You will be surprised... - Satellite Symposium organised by Medtronic	
Ankara	Therapeutic dilemmas in heart failure: debate of the experts - Satellite Symposium organised by Medscape	
Minsk	Initial combination therapy in pulmonary arterial hypertension: a new standard of care? - Satellite Symposium organised by GlaxoSmithKline	
Belgrade	Managing pulmonary embolism according to patient profile in the NOAC era - Satellite Symposium organised by Bayer AG	
Yerevan	PCSK9 inhibition to prevent and treat atherosclerotic cardiovascular disease - Satellite Symposium organised by Sanofi - Regeneron	
Cairo	Implementing the new European hypertension guidelines into clinical practice- Satellite Symposium organised by Boehringer Ingelheim International GmbH	
Tirana	Applying the wearable cardioverter defibrillator in clinical practice - Satellite Symposium organised by ZOLL	
Damascus	A case based approach to the management of complex valvular disease - Satellite Symposium organised by Cleveland	
San Marino	Roundtable discussion with the American Heart Association Editors for Circulation - Cardiovascular Imaging and Circulation: Cardiovascular Interventions- Satellite Symposium organised by Wolters Kluwer	
Bern	Targeting SGLT2 in clinical cardiology: exploring the benefits in cardiovascular risk, diabetes & heart failure - Satellite Symposium organised by PACE, supported by an unrestricted grant provided by Boehringer Ingelheim	
Stockholm	Five things cardiologists should know about diabetes - Satellite Symposium organised by MSD	
Bratislava	Spectrum of non-valvular atrial fibrillation: burden of disease - Satellite Symposium organised by Pfizer	
Copenhagen	Outcomes of GLP-1 RA in diabetes and cardiovascular disease: what are the key opportunities for cardiology practice? - Satellite Symposium organised by PACE-CME - Physicians' Academy for Cardiovascular Education	
Algiers	Optimising antiplatelet strategies in acute coronary syndrome: where are we now? - Satellite Symposium organised by Daiichi Sankyo Europe GmbH	
Vienna	Stand up against dyslipidaemia - Early prevention with supplement therapy : a paradigm shift Satellite - Satellite Symposium organised by Menarini	
Brussels	Achieve more in pulmonary arterial hypertension - Translating insights into patient benefits, Volume 2 - Satellite Symposium organised by Actelion Pharmaceuticals Ltd	
Ljubljana	Biomarkers in cardiology - Satellite Symposium organised by Roche	
Baku	Setting the COMPASS into new directions- Satellite Symposium organised by Bayer AG	
Moscow	Treatment of ischemic heart disease patients in 2018 - Satellite Symposium organised by SERVIER	
Kiev	Anticoagulation and your atrial fibrillation patients: bringing it all together in clinical practice Satellite - Satellite Symposium organised by Boehringer Ingelheim	
Madrid	Preventing PE & DVT in heart failure and other medically ill patients: an innovative action plan - Satellite Symposium organised by Medscape	
14:00		
ESC TV Stage	Meet the trialist - COMMANDER HF	

14:30	
Munich	2018 ESC Guidelines for CVD during Pregnancy
Centre Stage	Let's Talk About Strategy - Case Discussions with the Masters
Bach	What's the diagnosis? Cardiology Quiz
Beethoven	Challenges and opportunities for clinical investigation in the future
Haendel	Guidelines in Daily Practice - Stable coronary artery disease
Schumann	The changing environment of Cardiology Education and Training: ESC and UEMS Cardiac Section - We can do it together
Digital Health Stage	BigData@Heart
Ankara	Revascularisation in STEMI and shock: culprit-only or complete?
Minsk	Caring for patients with acute cardiovascular disease together.
Belgrade	Management of complex congenital heart disease
Yerevan	Unmet clinical needs in valvular heart disease
Cairo	Should chronically occluded coronary arteries be reopened?
Tirana	2018 update in interventional cardiology
Damascus	Heart failure and valve disease - When the whole is worse than the sum of its parts
Bern	Preventive cardiology: review, update, and State of the Art in 2018 - Part 2
Stockholm	Expert Advice - Cardiac rehabilitation after specific interventions
Bratislava	Meet the Experts - Managing hypertension with a heavy heart
Copenhagen	Meet the Experts - The ageing cardiovascular patient
Vienna	Nuclear cardiology - State of the Art
Brussels	Late Breaking Basic and Translational Science - Vascular Biology
Moscow	Guidelines in Daily Practice - Heart failure
Kiev	Atrial fibrillation ablation: stroke and bleeding
Tunis - Library Room	Priorities in coronary CTA: where are we today and where should we be heading?
Madrid	Expert Advice - Cutting-edge management of arrhythmogenic right ventricular cardiomyopathy (ARVC)
Brahms	How to eat right: should PURE results influence dietary guidelines?
Agora 1	Beta blockers: required in all acute coronary syndromes?
Agora 2	Peripheral and aortic disease: comorbidities and outcomes of intervention
Science Box 1	Advances in coronary physiology and imaging

Science Box 2	Bleeding complications in ACS
San Marino	miRNAs, a breakthrough for cardiology?
Algiers	Echocardiography of left atrial function
Ljubljana	Inflammation as a critical component of atherosclerosis
15:50	
	Meet the trialist - MITRA.fr - A randomized controlled trial evaluating the effectiveness of percutaneous mitral valve repair in secondary mitral regurgitation and reduced left ventricular ejection fraction
ESC TV Stage	Meet the Task Force of the 2018 ESC Guidelines on CVD during Pregnancy
Munich	
Digital Health Stage	Intervention and Electrophysiology
16:00	
Bach	Pulmonary embolism home treatment - Who and when? - Experts on the Spot organised by Bayer AG
Beethoven	Targeting SGLT2 in clinical cardiology: discussing the benefits in cardiovascular risk, diabetes & heart failure - Experts on the Spot organised by PACE, supported by an unrestricted grant provided by Boehringer Ingelheim
Brahms	Optimising cardiovascular outcomes with PCSK9 inhibitors: start now before a potential next MI or stroke! -Experts on the Spot organised by Amgen Europe GmbH
Haendel	Dilemmas in heart failure management: what do the experts say? - Experts on the Spot organised by Novartis
	NOACs and reversal: let's discuss our clinical experience - Experts on the Spot organised by Boehringer Ingelheim
Schumann	
16:15	
	Meet the trialist - GLOBAL LEADERS TRIAL - A randomized comparison of 24 month ticagrelor and 1 month aspirin versus 12 month dual antiplatelet therapy followed by aspirin monotherapy
ESC TV Stage	
16:45	
Munich	2018 joint ESC/ACC/AHA/WHF Fourth Universal Definition of Myocardial Infarction
Centre Stage	Expert Advice - Nightmares in the Cath Lab
Bach	Coronaries: let the cath lab games begin
Beethoven	Improving the ESCeL platform: a journey
Brahms	Radiation exposure in electrophysiology and coronary intervention: a critical appraisal
Haendel	Pulmonary hypertension due to left heart disease: look RIGHT!

Schumann	Are generic drugs safe in heart failure?
Digital Health Stage	Expert Advice - Big and Deep Data
Minsk	The right heart catheterisation tutorial
Belgrade	Valve durability after transcatheter and surgical aortic valve replacement
Yerevan	Important debates around aortic valve stenosis
Tirana	"Bleeders" in daily cardiology practice - Difficult decisions
Damascus	Interventional cardiology: review, update, and State of the Art in 2018
Stockholm	Fitness, fatness and sleepiness: the obesity paradox and sleep apnea in cardiovascular disease
Copenhagen	How to cope with high-risk cardiovascular disease in pregnancy
Algiers	Image Interpretation with the Masters: Cardiac CT
Vienna	Expert Advice - Cardiomyopathies: the clinical role of advanced imaging
Brussels	Active learning: CRISPR-Cas9 genome editing bootcamp
Baku	Late Breaking Science in Heart Failure
Tunis - Library Room	Hypertension guidelines in Europe and the US: treatment targets for the elderly
Agora 1	Controversies and unmet needs around TAVI
Agora 2	Arrhythmogenic channelopathies
Science Box 1	The potential of new and unusual biomarkers in heart failure
Science Box 2	CMR innovation for clinical use
San Marino	Progress in anticoagulation for venous thromboembolism
Bern	Diabetes: The malfunction of the "sweet heart"
Bratislava	Exercise and blood pressure
Ljubljana	Precision medicine: The critical roles for big data and machine learning
Moscow	Acute heart failure
Kiev	Are NOACs really better than VKA in the real world?
Madrid	Is there any progress in risk stratification for sudden cardiac death?
18:00	
Bach	Awards Ceremony
18:15	
Baku	Identifying patients who may benefit most from PCSK9i: highlights from the latest ODYSSEY OUTCOMES data - Satellite Symposium organised by Sanofi

Benefit of aspirin for primary prevention of cardiovascular events remains unclear: ARRIVE trial results



Prof. J Michael Gaziano

Once-daily aspirin failed to reduce the rate of primary cardiovascular events in patients with no known cardiovascular disease and moderate cardiovascular risk, reports Professor J Michael Gaziano (Brigham and Women’s Hospital, Boston, Massachusetts, USA) in a Hot Line session yesterday, with simultaneous publication in *The Lancet*¹.

The ARRIVE trial involved 12,546 participants with an estimated 10-year cardiovascular disease risk of 20-30% and is the first large randomised controlled trial to explore the efficacy and safety of primary prophylactic aspirin in this particular population. Participants received either once-daily enteric-coated aspirin 100 mg or placebo. Median follow-up was 60 months and the primary endpoint was time to first occurrence of a composite of cardiovascular death, myocardial infarction (MI), stroke, unstable angina and transient ischaemic attack.

In the intention-to-treat analysis, a primary cardiovascular event occurred in 4.29% of participants allocated daily aspirin vs 4.48% of participants allocated placebo (hazard ratio [HR] 0.96; 95% confidence intervals [CI] 0.81-1.13; p=0.60).

However, there was an unexpectedly low number of cardiovascular events that occurred overall. “The event rate was more in line with what we would expect to see in a population at low risk of cardiovascular events,” says Prof. Gaziano. “This may have been because some participants were taking medications to lower blood pressure and lipids, which protected them from disease,” he adds.

There were considerably fewer events than anticipated (550 participants had a primary endpoint event versus the 1,488 expected), which may have impacted the findings.

The risk of total and non-fatal MI (HR 0.53; 95% CI 0.36-0.79; p=0.0014 and HR 0.55; 95% CI 0.36-0.84; p=0.0056, respectively) was reduced by aspirin in the per-protocol analysis, and the relative risk reduction of MI in the aspirin group was 82.1% for those aged 50-59 years.

“Those who took aspirin tended to have fewer heart attacks, but there was no effect on stroke. As expected, the rate of gastrointestinal bleeding was higher in the aspirin group, but there was no difference in fatal bleeding events between groups,” reports Prof. Gaziano.

Although mostly mild, gastrointestinal bleeds occurred twice as often in the aspirin group than the placebo group (0.97% vs 0.46%, respectively; HR 2.11; 95% CI 1.36-3.28; p=0.0007).



“The use of aspirin remains a decision that should involve a thoughtful discussion between a clinician and a patient given the need to weigh the cardiovascular and cancer benefits against the bleeding risks, patient preferences, cost and other factors,” concludes Prof. Gaziano.

1. Gaziano JM, et al. Lancet 2018; August 26: [https://doi.org/10.1016/S0140-6736\(18\)31924-X](https://doi.org/10.1016/S0140-6736(18)31924-X).

2018 ESC/ESH Clinical Practice Guidelines in the spotlight

Arterial hypertension



Prof. Anthony Heagerty

2018 ESC/ESH Joint Guidelines for the Management of Arterial Hypertension provide updated recommendations for the diagnosis, risk reduction and treatment of patients with this condition.¹ Professor Anthony Heagerty (Division of Cardiovascular Sciences, University of Manchester, Manchester, UK) and Professor Guy De Backer (Department of Public Health, Ghent University, Ghent, Belgium), Review Coordinators for these guidelines, summarise why the new changes are so important and what they will mean for clinical practice.

“There are two key issues,” explains Prof. De Backer. “The first is that hypertension is a silent, chronic condition so there are problems with detection and screening; the second is that even when it is diagnosed, control of blood pressure is very, very poor.”

The first main change since the previous ESC/ESH Guidelines in 2013 relates to diagnosis of high blood pressure, as Prof. Heagerty highlights. “There is now more evidence to suggest that doctors can diagnose hypertension more confidently based on a patient’s home measurement,



Prof. Guy De Backer

which reduces the number of people with ‘white-coat syndrome’ who are treated unnecessarily.” Prof. De Backer continues, “It’s important to note that the new guidelines do not change the definition of hypertension categories, as the recent American College of Cardiology (ACC)/American Heart Association (AHA) Guidelines have; the ESC/ESH Guidelines still include blood pressure categories as ‘optimal’, ‘normal’, ‘high-normal’, ‘grade 1, 2 and 3 hypertension’ and ‘isolated systolic hypertension’; definitions are still based on doctors’ office measurements. However, it is accepted that there are more devices around for the measurement of blood pressure that are cheaper and more easily available than they used to be, and that these are being used by patients at home. Diagnosis can therefore now be based on home/ambulatory measurements by the patient, not just at the doctor’s office.”

“New evidence has also come to light,” says Prof. Heagerty, “that suggests the target for acceptable blood pressure control should be lowered, and it is now 130/80 for the majority of patients.” Indeed, the findings from the SPRINT study, which also informed the recent ACC/AHA Guidelines, showed that treating systolic blood pressure to a lower target significantly reduced the rates of cardiovascular events and death.²

“We can now provide increased protection to more patients because the target for blood pressure control has been lowered” –Prof. Heagerty.

Although more patients can now be treated, Prof. Heagerty acknowledges that this change may cause a degree of nervousness among the prescribing community. “Firstly, a larger number of patients will require drug treatment as well as lifestyle advice to achieve the new target for blood pressure control, and secondly, additional patients will need more than one drug. There will be concerns among doctors relating to two areas: the first is the possibility of side effects—although if drug regimens are selected to suit individual patients these will be kept to a minimum—and secondly, some patients will get very low pressures and suffer consequences such as falls, but again, careful monitoring should avoid such issues.”

And what about any changes to drug therapy? “Previously, it was recommended to start with one agent and add others in a step-wise manner,” says Prof. De Backer. “Experience showed, however, that this was insufficient, so the new recommendation is to start with two anti-hypertensive agents in the large majority of patients (those without intolerance or contraindications).” In terms of how this might impact clinical practice, both experts are clear. “There will be an increase in the use of low-dose combination therapy, i.e. fixed dose combinations, which will reduce the pill number,” says Prof. De Backer. Prof Heagerty

agrees. “Patient compliance is increasingly recognised as a big issue and there is a need to minimise the number of pills taken in an effort to improve compliance rates,” he says.

“Patient follow-up and more attention to treatment compliance will become even more important.” – Prof. De Backer.

Any other significant changes? Prof. De Backer explains, “There is emphasis on the importance of looking at a patient’s total cardiovascular risk, not just blood pressure. Experts advise that we should be measuring hypertension-mediated organ damage; if this is present, then stronger intervention is urged.” Indeed, the updates cover drug therapy extending to additional groups of patients. “There is a section at the end covering important subgroups, such as pregnant women, certain ethnic groups and those with ‘white-coat’ hypertension, in which treatment strategies are different,” says Prof. De Backer. “The main changes are summarised in a table at the end of the full document and, similarly, there is a table of gaps in the scientific evidence detailing which new studies are required. These new guidelines are therefore more accessible and easier to read for busy clinicians and researchers alike.”

1. 2018 ESC/ESH Guidelines for the Management of Arterial Hypertension. Eur Heart J 2018. doi:10.1093/eurheartj/ehy339.
2. The SPRINT Research Group. New Engl J Med 2015;373:2102-2116.

Updated future 2019 ESC Guidelines on the management of ‘chronic coronary syndromes’ to replace prior ESC Guidelines on ‘stable coronary artery disease’

In 2019, new Clinical Practice Guidelines are planned to replace the 2013 recommendations for the management of stable coronary artery disease.

As part of this comprehensive update, the Task Force, led by William Wijns and Juhani Knuuti, have proposed a change in nomenclature from ‘stable coronary artery disease’ to ‘chronic coronary syndromes (CCS)’. A key rationale is that although coronary artery disease (CAD) often seems ‘stable’ in between acute events, the underlying disease status is anything but ‘stable’. Atherosclerotic plaque accumulation is a dynamic process that can change over time to include growth, stabilisation or regression, as well as changes in plaque composition or thrombosis, depending on lifestyle, risk factor modulation and pharmacological therapies. The change to CCS has been proposed to more accurately represent this changing pathophysiology, for the better or the worse, over the continuum of the disease.

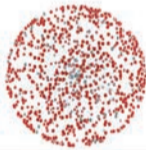
CCS will also better cover the different clinical presentations and multiple syndromes included in the 2019 Clinical Practice Guidelines. The guidelines will provide specific recommendations on the management of several different clinical scenarios, such as patients with suspected CAD, others with known chronic chest pain, asymptomatic and symptomatic patients with long-standing CAD and patients who have recently undergone successful revascularisation. All these, plus many more clinical scenarios, will be included in this new version of the Clinical Practice Guidelines and will be better classed under the umbrella term of CCS than being reduced to a single condition of ‘stable CAD’ or ‘stable angina’. As with heart failure, clinical presentations will be conveniently categorised as either acute or chronic coronary syndromes, accurately covering the different stages of the disease.

New for 2019

ESC Guidelines on the Management of Chronic Coronary Syndromes.

Today

in the ESC Professional Members’ Lounge



10:00 - 10:30	ESC & Association Certifications
10:30 - 11:00	Be a SoMe Professional
11:00 - 11:15	How can Enago help you in your publication goals?
12:00 - 12:30	ESC Education Meet the Education Chair: Paulus Kirchhof
13:00 - 13:30	ESC Grants - Women Transforming Leadership Programme
15:00 - 15:15	Hands-on the new ESC 365
15:30 - 16:30	Professional Horizons For registered participants. Seek career advice from experts in cardiology.
15:30 - 16:00	Be a SoMe Professional
16:00 - 16:15	How can Enago help you in your publication goals?
16:30 - 17:00	Meet the European Heart Academy Team
17:00 - 18:00	World Café Network with young ESC opinion leaders. Five main topics.
18:00 - 19:30	Young Networking event

Eugene Braunwald: Coronary artery disease 10 years from now – my predictions



Prof. Eugene Braunwald

Today, Professor Eugene Braunwald (Distinguished Hersey Professor of Medicine at Harvard University, Boston, Massachusetts, USA) will join other leading lights in a session on the future of cardiology to share his expectations for the management of coronary artery disease (CAD) in the next decade.

Experience Prof. Braunwald live discussing CAD in this afternoon’s session ‘Cardiology 10 years from now - my predictions and how to get yourself ready’ Today, 11:00 - 12:30; Ankara - Spotlight Village

“CAD remains the most important arterial disorder, responsible for an enormous number of deaths and morbidity, so it almost goes without saying that efforts to reduce its incidence are incredibly important,” begins Prof. Braunwald. “I can see advances in three main areas—each a soldier in the battle against CAD—that will really improve the way we go about tackling this disorder.”

“The first approach concerns the development of non-invasive coronary artery imaging,” he says. “Up to now, invasive angiography has been the gold standard for assessing coronary arterial

lesions. But scientists have been working hard to find accurate non-invasive techniques, such as those combining magnetic resonance imaging with positron emission tomography to detect vulnerable plaques and to distinguish them from those less likely to be of risk,” Prof. Braunwald explains. “These types of diagnostic techniques are a major step forward in more specifically identifying which lesions and which patients we need to focus on.”

“The second area,” continues Prof. Braunwald, “is the use of genomics to ascertain and define the risk of CAD with greater precision. We already have the classical, well-characterised risk factors, including cigarette smoking, diabetes, hypertension and elevated cholesterol, and these remain valid and important in identifying patients at a high risk of CAD. Add to these genomic analyses, which are improving all of the time, and you get another dimension to risk stratification. By combining the classical and new genomic approaches we can achieve a really exquisite, refined analysis which will enable us to more accurately identify patients at various levels of risk,” he says. “The ability to effectively target medication to those patients with the greatest need—thereby optimising healthcare resource use—will apply precision medicine to CAD.”

“The last approach, which in my opinion is the most interesting,” suggests Prof. Braunwald, “has to do with new drugs developed. In the last few years, the use of monoclonal antibodies to inactivate circulating PCSK9—and thereby lower low-

density lipoprotein cholesterol—has attracted great attention. However, while quite effective, these drugs need to be injected every 2-4 weeks and they are very expensive. Scientists have now developed a new drug, inclisiran, which, rather than blocking the action of PCSK9, inhibits a vital step in its production. The real advantage of this drug is that it needs to be administered only every 6 months or even yearly to lower cholesterol.” Prof. Braunwald goes on to make what he calls “an outrageous suggestion”!

“Given that inhibition of PCSK9 production will be able to actually prevent CAD if begun early enough in a person’s life, I would propose that such a drug be administered on a regular once- or twice-yearly basis to everyone over the age of 30 years.”

“This approach would have a profound effect on reducing the development of CAD in populations. The cost of delivering such a drug would be outweighed by the reduction in health care costs associated with treating people with established CAD. However, this approach will have to be shown to be feasible and safe.”

Summing up, Prof. Braunwald is enthusiastic. “With the three-pronged approach of more accurate, non-invasive diagnostic techniques, more accurate risk assessment and new drugs to lower cholesterol, the future for CAD prevention and management is bright.”

European Heart Agency - Creating policies for CVD prevention

The ESC’s European Heart Agency, based in Brussels, is a rather new strategic branch of the society, aiming to cover fast-evolving realities in the cardiovascular domain. It was opened in February of 2013, close to the European Parliament, in order to establish a firm base in the political capital of Europe. It has two distinct components:

The European Heart Health Institute, through four different units, covers ESC activities related to health economics and public policy, CVD prevention, EU research funding, novel technologies, quality assessment and health care management.

The European Heart Academy works to build and strengthen cooperation between ESC’s expert cardiologists and top-tier academic institutions to offer specialised executive programmes that help train future leaders in cardiovascular medicine.

By influencing relevant aspects of policy and shaping new projects and future leaders, the European Heart Agency is a key driver in the ESC’s mission to reduce the burden of CVD.

“It is our belief that public policies must be put in place to encourage CVD prevention but also to reduce the health care gaps between the ESC member countries. The European Heart Agency in Brussels was established so that the ESC could have greater input in these all-important policy decisions.” Professor Panos Vardas, Chief Strategy Officer of the European Heart Agency.

Paving the way for innovation in medical devices



Prof. Alan Fraser

In just two years’ time, significant changes in European regulations for new medical technologies will come into force.

“With over 500,000 medical devices available in Europe, including many high-risk implantable devices that are used in our daily practice, cardiovascular medicine will be impacted enormously,” says Professor Alan Fraser (University Hospital of Wales, Cardiff, UK), Chair of the ESC EU Regulatory Affairs Committee on Medical Devices, following yesterday’s session on innovation in medical devices.

“EU legislation determines the types of medical devices doctors can access and this impacts clinical practice.”

“Medical devices are essential to modern medicine and we couldn’t treat our patients without them,” says Prof. Fraser. “The ESC has been working with EU policymakers since 2010 to clarify and strengthen the existing legal framework which determines what devices are made available on the EU market,” he says. “Today we are pleased to see that the new legislation addresses many of the concerns we raised.”

“For the first time, safety and clinical performance data for each new device obtaining the CE mark will be publicly available.”

Passed in May 2017, the law moves beyond the previous requirements to establish that a medical device is safe and that it performs the task it was designed for. “From 2020, every device used by cardiologists in the diagnosis and treatment of patients will be subject to greater scrutiny and reinforced requirements for clinical evidence,” says Prof. Fraser. “In addition, high-risk devices will now be required to show a positive impact on clinical outcomes.” He thinks these new provisions are extremely good news for clinicians and for patients. “The legislative

changes will foster high standards for medical devices. Clinicians will feel more confident in their clinical decisions and choice of device and patient safety will be improved.”

“This new legislation provides doctors with an exciting opportunity to become more actively involved in shaping the regulatory landscape.”

The new regulations will also require greater involvement of health care professionals. For example, expert panels and expert laboratories will be designated to provide scientific, technical and clinical advice. Individuals will also have the opportunity to answer calls for volunteers to participate in ad hoc Expert Working Groups. Prof. Fraser recognises that this is unfamiliar territory for many doctors, which is why he was pleased to be involved in yesterday’s session, where these

general elements were explained and concrete examples provided, with reference to electrophysiology and software as a medical device. ESC members wishing to know more may also consult the ESC website and/or contact the ESC Advocacy Team.

1. Fraser AG, et al. Eur Heart J 2011;32:1673-1686.
2. Fraser AG, et al. Lancet 2018;392:521-530.



ESC Gold Medal Award winner

A multidisciplinary approach to success



**Prof.
Ottavio Alfieri**

Having recently retired after 20 years as Director of the Department of Cardiac Surgery at San Raffaele University Hospital, Milan, Italy, Professor Ottavio Alfieri is not one to slow down too much.

He continues to be active in his department—operating, being involved in clinical activities, supervising others—doing what he loves to do, but without administrative tasks. It is clear that the passion he has for his work has not dampened since he graduated from the University of Parma, Italy in 1971. “As a young graduate, I was full of enthusiasm, energy and ideas,” he says. “At that time, cardiac surgery was an incredibly exciting discipline that had just gone through a pioneering phase. We had seen successful treatment of congenital heart disease, valvular disease, coronary heart disease and heart failure; the first heart transplant was in 1967 and the first clinical implantation of a total artificial heart in 1969. It was a very exciting time when anything seemed possible, and that was appealing to me.”

Prof. Alfieri lists three precise principles as the driving force behind his early career. “Firstly, to work and learn in the best centres in the world, to travel and to get as much exposure as possible to different techniques and ways of approaching things; secondly, I was keen to take every possible opportunity that was afforded to me,” he recalls. With this determination, he completed part of his specialist training at the University of Alabama, USA and he spent six years at St Antonius Hospital, Utrecht, Netherlands learning more about cardiac surgery, particularly coronary and valve surgery. The third guiding principle, and perhaps the one that really defines Prof. Alfieri’s outlook, was to have a multidisciplinary approach. “I have always been very keen to work with other specialists, including cardiologists, biologists and engineers, and I could see the importance of such an approach right from the start of my career,” he says. “I used to attend the cardiology meetings more than the surgery meetings as I learnt more about surgery that way.”

Indeed, it is the historical alliances between cardiology, surgery and engineering that have been a source of inspiration to Prof. Alfieri. “Multidisciplinary approaches have proved very useful in the treatment of congenital heart disease,” he

says, citing the example of the surgeon Alfred Blalock and paediatric cardiologist Helen Taussig, who worked together to develop the Blalock-Thomas-Taussig shunt in the 1940s. “And then there is the work of surgeon Albert Starr and engineer Lowell Edwards, who together, in 1960, developed the first successful heart valve to be implanted in a patient,” he recalls.

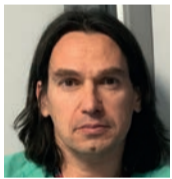
“I am proud of the role that the trans-catheter approach has had in the treatment of structural heart disease.”

Early on in his career, Prof. Alfieri was encouraged to work with scientists in the catheterisation laboratory and later, with Antonio Colombo, he started an educational programme on trans-catheter technology, combining the two specialties of cardiology and surgery. Prof. Alfieri’s proudest achievement however, and the one he feels has made the greatest clinical impact, is the introduction of the edge-to-edge technique (the Alfieri stitch) to correct mitral regurgitation. “It is a simple, yet effective,

technique that gives excellent results—even in the most difficult cases,” he says. The surgical experience led to the introduction of the MitraClip, which replicates edge-to-edge mitral repair via a percutaneous approach to correct mitral valve defects. “An important merit of this particular technique is that it forms the basis of repair in >60,000 patients who have been treated today. In Germany, for example, there have been more MitraClip procedures in the last two years than the number of patients treated via conventional surgery for mitral valve repair.” He has also applied the same principle to repair the tricuspid valve using the ‘clover technique’. “I am very proud to see the edge-to-edge technique being applied to the tricuspid valve to treat regurgitation via a percutaneous approach,” he says.

And the most important piece of advice he could give to young cardiologists starting their career today? “Work together,” he says. “Multidisciplinary teams must be the rule; we need people of different specialties working together in Heart Teams to make decisions and provide solutions. This attitude is important for young cardiologists and surgeons, and I hope to convince them to be willing and able to share their experiences and ideas—that is the best advice I can give.”

2018 ESC Clinical Practice Guidelines in the spotlight **Syncope**



**Dr.
Javier Moreno**

The 2018 ESC Guidelines for the Diagnosis and Management of Syncope¹ aim to focus on proper initial and subsequent evaluation, in order to help distinguish between benign and life-threatening causes, and describe available therapeutic options.

Doctor Javier Moreno (Hospital Ramon y Cajal, Madrid, Spain), who together with Professor Adam Torbicki (European Health Centre Otwock, Otwock, Poland) moderated the review process of the new version of these guidelines, explains why they are so important and summarises the key updates since publication of the previous guidelines in 2009.

“The current guidelines provide a thorough state-of-the-art vision of the problem, dealing with both diagnostic and therapeutic considerations.”

“Syncope is one of the leading causes of emergency department admissions. The broad aetiological causes involved, ranging from absolutely benign—luckily in most cases—to serious conditions, make many

physicians feel uncomfortable in dealing with them,” explains Dr. Moreno. The current ESC Guidelines have been produced with the contribution of the European Heart Rhythm Association and, in contrast to many standard textbooks, have been developed by many recognised experts—not only cardiologists but those from many other medical fields.

So, what are the most important changes? Dr. Moreno highlights that the new version emphasises a very systematic way of managing patients after transient loss of consciousness, both at the initial evaluation in the emergency department and at subsequent investigations either in hospital or on an ambulatory basis. “The guidelines state very clearly when the patient should be hospitalised according to the presence or absence of well-established high-risk features,” he says. “The authors have comprehensively reviewed all diagnostic and therapeutic measures regarding syncope and have scientifically redefined their present role in 2018, indicating how strong the evidence is for each of them. Tests and therapies have been reclassified following standard ESC classes of recommendation and, accordingly, new diagnostic and therapeutic algorithms and flowcharts have been created.”

There is particular emphasis that all patients with reflex syncope and orthostatic hypotension should receive clear and full explanation of their diagnosis and the risk of recurrence. The importance of giving reassurance and advice on how to avoid triggers is highlighted. “These measures are

the cornerstone of treatment and have a high impact in reducing the recurrence of syncope,” says Dr. Moreno.

The current guidelines also cover some of the non-cardiovascular causes of transient loss of consciousness, which can be very useful for the cardiologist, and include the increased role of prolonged ECG monitoring. A further new aspect is the support of video recording at home, with mobile phones, of unclear episodes of syncope in order to provide more information to assist with aetiological analysis. The establishment and goals of Syncope Management Units are described in detail, in terms of structure, tests and assessments, access and referrals, the role of the Clinical Nurse Specialist, and outcome and quality indicators. Dr. Moreno

adds, “A new chapter is included that provides clear definitions of all the terms that may be related to syncope, in order to avoid frequent confusion—this will be very helpful for cardiologists.”

As to what these changes may mean for clinical practice, Dr. Moreno is clear. “As most episodes of syncope occur away from the hospital and have fully ended by the time of consultation, a significant amount of speculation is always involved in the diagnostic process. Clinicians following the present guidelines should feel reassured in their daily work that they are complying with the highest standards of care according to the ESC.”

1. Brignole, M et al. Eur Heart J 2018;39:1883-1948.

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Gastrointestinal and genitourinary bleeding in vascular patients treated with antithrombotic drugs should stimulate a search for cancer



Dr. John Eikelboom

Compared with aspirin alone, combination of the anticoagulant rivaroxaban with aspirin reduced the risk of cardiovascular death, stroke and myocardial infarction (composite primary outcome) and mortality in patients with stable coronary artery disease or peripheral artery disease in the large COMPASS (Cardiovascular Outcomes for People Using Anticoagulation Strategies) trial.¹

However, this benefit came at the expense of increased bleeding. In a Clinical Trial Updates session yesterday, Doctor John Eikelboom (McMaster University, Hamilton, Ontario, Canada) discussed new data relating to the types and timing of bleeding, and association with subsequent cancer diagnoses in the study population.

"This was a huge trial involving more than 27,000 patients recruited from 602 centres in 33 countries," explains Dr. Eikelboom.

Patients were randomised 1:1:1 to one of three groups: rivaroxaban (2.5 mg twice daily [bid]) plus aspirin (100 mg/day), rivaroxaban alone (5 mg bid), or aspirin alone (100 mg/day). The mean duration of follow-up was 23 months.

"In COMPASS, the most common site of bleeding was the gastrointestinal (GI) tract, and most of the increase in GI tract bleeding with rivaroxaban occurred in the first year after starting treatment."

Major bleeding (defined according to modified International Society on Thrombosis and Haemostasis criteria) occurred in 3.1% of patients treated with the rivaroxaban plus aspirin combination, compared with 1.9% of patients receiving aspirin alone (hazard ratio [HR] 1.70; 95% confidence intervals [CI] 1.40-2.05; $p < 0.0001$). Compared with aspirin, the combination did not result in a higher incidence of intracranial or fatal bleeding. "Notably, most of the increase in bleeding occurred in the GI tract, and typically

during the first year after starting study medication," Dr. Eikelboom remarks.

New analyses have revealed a strong relationship between GI bleeding and new GI cancer diagnoses, as well as between genitourinary (GU) bleeding and new GU cancer diagnoses.

"GI bleeding was associated with a substantial (12-fold) increase in diagnosis of new GI cancers," Dr. Eikelboom continues. "Among patients with GI bleeding who had not been previously diagnosed with GI cancer, 7.8% were subsequently found to have a new GI cancer, compared with a 0.9% rate of GI cancer without GI bleeding (HR 12.9; 95% CI 9.77-17.0; $p < 0.0001$). A similar pattern was evident for GU cancers: among patients with GU bleeding who had not been previously diagnosed with GU cancer, 13.4% were subsequently diagnosed with GU cancer, compared with a 0.3% rate of new GU cancer without GU bleeding (HR 83.4; 95% CI 58.6-118.6; $p < 0.0001$). More than 75% of these cancers diagnosed after bleeding were identified within 6 months.

Dr. Eikelboom concludes, "Although overall cancer rates were similar in the three treatment groups, the early increase in GI bleeding with rivaroxaban-based resulted in earlier diagnosis of GI cancer in these patients. By reducing major cardiovascular events and mortality, the combination of rivaroxaban and aspirin already produces a clear net benefit, and by unmasking GI cancers at an earlier stage, the combination could potentially lead to the added benefit of improved GI cancer outcomes."

1. Eikelboom JW, et al. N Engl J Med 2017;377:1319-1330.



Moscow - Village 5
Monday, August 27, 2018
13:00 - 14:00

Satellite Symposium

Treatment of ischemic heart disease patients in 2018

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