Elevated pulse pressure is not a main determinant of the increased CV risk seen with low diastolic BP

New results from the CLARIFY registry suggest that increased pulse pressure is not a major factor for why patients with low diastolic blood pressure (BP) are at increased risk of cardiovascular events (CV). Previous results from the registry indicated that patients with diastolic BP ≥80mmHg and those with diastolic BP <70mmHg were both at increased risk of CV events—supporting the idea of a “J shaped” relationship between diastolic BP and risk of CV events.

Dr. Emmanuelle Vidal-Petiot commented that, therefore, “pulse pressure may be associated both with low diastolic BP and increased CV events with no direct causal link between low BP and outcome”. She added that the objective of the present study was to further explore this hypothesis by determining “if the increased CV risk observed with low diastolic BP is hypertensive patients with coronary artery disease was the result of elevated pulse pressure”.

The CLARIFY registry was a prospective, longitudinal registry that enrolled 32,703 outpatients, from 45 countries, with stable arterial disease was the result of elevated pulse pressure”.

Dr. Vidal-Petiot and colleagues performed a cross-classification analysis to see if the increased CV risk observed with low diastolic BP was still seen in patients with the lowest-risk pulse pressure range. They found that patients with low diastolic BP continued to be at increased risk even when their pulse pressure was in the lowest-risk category (p-value for interaction 0.005).

“Although pulse pressure is associated with increased CV events in this population and is closely associated with low diastolic BP, it is does not appear to be a major determinant of the increased risk associated with low diastolic BP in this large cohort of patients,” Dr. Vidal-Petiot concluded.

She noted that low myocardial perfusion may be a more plausible explanation for this link but added that this would need further study.

“While we used multiple methods to attenuate reverse causality in our results, the potential harmfulness of excessive pharmacological lowering of blood pressure can only be demonstrated by future large randomised controlled trials with different diastolic BP targets,” Dr. Vidal-Petiot stated.

High carbohydrate intake is linked to worse total and non-cardiovascular (CV) mortality outcomes, while high fat intake is associated with lower risk, according to the data from a dietary study of over 135,000 patients across five continents presented yesterday that raise questions over existing global dietary guidelines.

PURE researchers: Fewer carbohydrates and more fat reduce mortality

High carbohydrate intake is linked to worse total and non-cardiovascular (CV) mortality outcomes, while high fat intake is associated with lower risk, according to the data from a dietary study of over 135,000 patients across five continents presented yesterday that raise questions over existing global dietary guidelines.

The researchers also examined the impact of fats and carbohydrates on blood lipids in the same PURE study participants. Consistent with other reports from Western countries, they found that while LDL cholesterol increases with higher intakes of saturated fat, HDL cholesterol also increases, thus decreasing the total cholesterol/HDL ratio. They found that LDL cholesterol is not reliable in predicting effects of saturated fat on future cardiovascular events, with ApoB/ApoA1 providing the best overall indication of saturated fat effect on cardiovascular risk among the markers tested.

More modest fruit, vegetable and legume consumption In a second analysis, Doctor Andrew Mente (Population Health Research Institute, McMaster University, Hamilton, Canada) told the audience that this was the first study to report on the associations of fruit, vegetable and legume intake with CV risk in countries at varying economic levels and from different regions, spanning 18 countries and five continents.

Previous research and several dietary guidelines in North America and Europe recommended daily intake of these foods ranging to increased total and non-CV mortality, whereas high fat intake was associated with a lower risk. “Our findings do not support the current recommendation to limit total fat intake to less than 30% of energy and saturated fat intake to less than 10% of energy,” she said.

“A total fat intake of about 35% of energy with concomitant lowering of carbohydrate intake may lower the risk of total mortality. In fact, individuals with high carbohydrate intake—above 60% of energy—may benefit from a reduction in carbohydrate intake and increase in the consumption of fats.” Among the 5,796 deaths and 4,784 major CV events over a median follow-up of 7.4 years, the researchers noted that carbohydrate intake in the highest versus lowest quintile was associated with a significant 28% increased risk of total mortality (HR 1.28; p≤0.0001) but not CVD risk. Conversely, total fat intake in the highest versus lowest quartile was associated with a significant 23% reduction of total mortality risk, an 18% reduced risk of stroke, and a 30% reduced risk of non-CVD mortality.

Each type of fat was associated with significantly reduced mortality risk: 14% lower for saturated fat, 19% for mono-unsaturated fat, and 20% for polyunsaturated fat. Higher saturated fat intake was also associated with a 21% decrease in stroke risk.

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Database analysis investigates leaflet thrombosis after TAVI

A new study, based on reports from an adverse events and outcomes database, identified leaflet thrombosis as a possible mechanism of complications following transcatheter aortic valve implantation (TAVI). The insights, presented in a Hot Line: Late-Breaking Registry Results session yesterday reveal that clinically relevant consequences as a result of leaflet thrombosis usually occur in the first year after TAVI.

Leaflet thrombosis is a recently recognised mechanism of transcatheter heart valve failure. Leaflet thrombosis presents as aortic stenosis more frequently than regurgitation,” said Doctor Ankur Kalra (Case Western Reserve University School of Medicine, Cleveland, USA).

The MAUDE (US Manufacturer and User Facility Device Experience) database contains reports of adverse events involving medical devices that are submitted to the Food and Drug Administration (FDA) and can be used to identify under-recognised device-related events. The investigators searched the database between 2012 and 2015 using the NPT code used to identify TAVI-related adverse events. They refined the search using terms such as leaflet, central aortic regurgitation and aortic stenosis and recorded data on the presentation of leaflet thrombosis, mode of diagnosis; and timing of onset after TAVI.

Researchers found that there were 5,691 TAVI-related adverse events reported in the MAUDE database. Of these, 546 were separated based on the search terms. There were 156 structural valve dysfunction events included in the final analysis (129 were leaflet restriction and 27 were malcoaptation). The majority (60%) of leaflet thrombosis cases occurred in the first year after TAVI and the others in the period between 13 and 60 months after TAVI.

Commenting on further results from the study, Dr. Kalra said: “Structural valve dysfunction presented as aortic stenosis (53.3%), regurgitation (23.3%) and both (13.3%). The other patients had a stroke/transient ischaemic attack. Interventions to address leaflet thrombosis were mainly antiplatelet or anticoagulant therapy (26.7%); valve-in-valve TAVI (10%); and reoperations (46.7%). Diuretics, thrombus aspiration, balloon aortic valvuloplasty, or no intervention were used in others.

“Early diagnosis of leaflet thrombosis may be crucial for planning appropriate management and optimising clinical outcome for patients,” Dr. Kalra concluded, while acknowledging that the study had several limitations inherent to a self-reported, publically available database. Chairperson Professor Martin Cowie (Imperial College London, UK) highlighted the importance of establishing the seriousness of the problem and getting a real-world picture for regulators, reimbursement, clinicians and patients.

Dr. Ankur Kalra

Commenting on the dataset, Professor Stephan Achenbach (University of Erlangen, Germany) states, "This was a database of patients with clinical problems, and not a database of patients with leaflet thrombosis that was used for this analysis. Hence, one cannot conclude from this data how often leaflet thrombosis results in severe consequences. One would have to put the number of problems reported here—156 cases, out of which about one-half underwent surgery—in relation to the overall number of TAVI procedures performed, likely tens of thousands. While leaflet thrombosis may be the underlying mechanism when bioprosthetic heart valve failure occurs, many imaging trials published in the last year showed that leaflet thrombosis is not infrequent, usually resolves spontaneously or with anticoagulation, and that clinically relevant consequences are seldom seen."
Candesartan and hydrochlorothiazide: A new HOPE for blood pressure reduction in hypertensive patients?

A new analysis of 2016's HOPE-3 trial has found no benefit to the aggressive lowering of systolic blood pressure (SBP) below 120mmHg. However, hypertensive patients may reduce the risk of major cardiovascular events (MACE) by using a combination of antihypertensive and lipid-lowering therapies. The data were presented by Doctor Eva Lonn (Population Health Research Institute, Hamilton, Canada) during yesterday’s Clinical Trials Update session.

The Heart Outcomes-3 trial (HOPE-3) evaluated blood pressure lowering with a daily fixed dose of both candesartan 16mg and hydrochlorothiazide 12.5mg versus placebo in an intermediate-risk population (n=12,705), Dr. Lonn explained. The two-by-two factorial study design included co-randomisation to daily rosuvastatin 10mg or placebo, and followed patients out to 5.6 years median follow-up. The intermediate-risk population was made up of participants without cardiovascular disease, including men ≥55 and women ≥60 years old with risk factors such as smoking, early renal dysfunction and low LDL cholesterol levels. The risk of cardiovascular death, non-fatal myocardial infarction or non-fatal stroke was 4.1% at a median of 5.6 years for those patients by medical therapy, versus the control group's 4.4% (p=0.4). A composite secondary endpoint including risk of heart failure also failed to reveal a significant difference between the groups (p=0.51).

The new post-hoc analysis has re-examined the data to investigate associations between baseline and time-averaged in-trial achieved blood pressure and MACE. The team used multivariate adjusted Cox models and multivariate adjusted restriction cubic spline analyses to evaluate the original HOPE-3 results, stratifying the data according to blood pressure level. For patients with baseline SBP ≥150mmHg, the percentage of patients experiencing cardiovascular death, stroke or myocardial infarction was significantly lower among the treatment group (4.8%) than the control group (7.2%, p=0.024). There was no difference in the event rate with or without treatment in those patients with a SBP <150mmHg. This was also the case when secondary endpoints were included in the analysis (5.7% vs. 8%, p=0.03).

In this population, HOPE-3 data demonstrated a link between baseline SBP >120mmHg and an increase in risk for MACE, cardiovascular death and stroke. This risk was “substantially higher” for participants with a baseline SBP ≥180mmHg. Baseline diastolic blood pressure, in comparison, was not linked to higher major cardiovascular events between 70 and 90mmHg.

Over a follow-up period of 5.6 years, the team observed a mean reduction in blood pressure of 6.5mmHg (systolic/diastolic) for therapy patients, with the largest reductions seen in higher blood pressure patients. In addition, “Fixed dose combination [therapy] reduced major cardiovascular events in the upper third of baseline SBP (≥143.5mmHg), with the largest effect in those with baseline SBP ≥150mmHg,” Dr. Lonn told the audience.

“Optimal blood pressure during the trial appeared to be about about 130/80mmHg,” Dr. Lonn added, “But no benefit was found with aggressive SBP lowering below 120mmHg.”

This second analysis of the HOPE-3 data revealed that, whilst the overall impact of lowering blood pressure with the use of combined candesartan and hydrochlorothiazide therapy in an intermediate group of patients was not significant, patients with a higher baseline blood pressure do experience a reduction of risk in line with falling blood pressure.
Use of mobile ECG recording device significantly increases AF diagnosis rate

Professor Julian Halcox (Swansea Medical School, Swansea, UK) told audience members at a Hot Line session yesterday that patients who used a mobile heart monitoring device to record an ECG were almost four times more likely to be diagnosed with atrial fibrillation (AF) than were patients receiving routine care.

In REHEARSE-AF, 1,003 patients aged 65 years with a CHA2DS2-VASc score of ≥2 were randomised to receive a mobile heart monitoring device (500)—which they had to use twice a week—or routine care (501).

The device, Prof. Halcox explained, is attached to a smartphone and used to record an ECG. The ECG is then sent via WiFi to an electrophysiologist for review. During the 12 months of the study, 19 patients in the device arm were diagnosed with AF compared with five in the routine care arm (p<0.007). Prof. Halcox noted that this finding meant that patients using the heart monitoring device had a “four-fold greater likelihood of being diagnosed with AF” (the hazard ratio was 3.9). He added that the device appeared to be “highly acceptable” to patients in the device arm, observing that they were actually slightly less anxious about the risk of heart rhythm abnormalities than were those in the routine care arm.

Concluding, Prof. Halcox commented: “While these data suggest that this strategy has the potential to reduce the risk of stroke and systemic embolism, the full clinical impact and cost-effectiveness requires further evaluation in a larger, prospective, outcome trial.”
The ESC advocates for higher-quality healthcare in Europe

ESC’s advocacy mission is to leverage its knowledge, network and influence to promote high-quality healthcare and shape a policy environment favourable to cardiovascular health. It works with governmental and non-governmental organisations whose decisions have a direct impact on the prevention, treatment and management of cardiovascular disease (CVD).

A coherent, cross-border approach to preventing CVD and reducing care disparities across Europe is a key priority. With this goal in mind, the European Heart Health Charter was launched in 2007 as an initiative of the ESC together with the European Heart Network, the European Commission and WHO-Europe to foster the prevention of CVD. This year marks the 10th anniversary of the Charter, which is being revised in line with current evidence and best practice.

ESC contributes to capacity building across the European region through joint advocacy initiatives with the European Chronic Disease Alliance, and professional and patient networks. At the request of WHO-Europe, the ESC also provides expertise at country and inter-country level to implement evidence-based interventions in CVD prevention and care and to reduce the gaps across the continent.

With CVD being the largest public health burden in Europe and around the world, the ESC recognises the crucial importance of research. While existing treatments and prevention measures are partially effective, two major challenges remain: first, our ability to define risk and disease status is still poor, and second, treatment options for CVDs related to ageing and long-term exposure to risk factors—such as heart failure with preserved ejection fraction and atrial fibrillation—are still limited. ESC maintains a constant dialogue with the European institutions to guide EU research funding to these and other areas where it is most needed.

New medical device regulations will directly impact the quality and availability of the devices that physicians use. ESC experts have been collaborating with European Union regulators for over a decade to ensure new regulations are optimal for European cardiologists. In April, the European Parliament passed new legislation to ensure that following clinical investigations on all devices to be implanted in the body, experts may be consulted both by manufacturers and by regulators before market approval. The new law also provides for experts to be involved in the development of harmonised standards—setting the safety and performance requirements and for clinical investigations and/or post-market clinical follow-up—where guidance is lacking or insufficient. This is the case for cardiology, where only one guidance document on coronary stents currently exists.

With a plethora of data available, making sense of the evidence can be difficult for policymakers, leading to insufficient policy responses to health challenges.

Chairman of the ESC advocacy committee, Doctor Peter Kearney, consultant cardiologist (University College Cork, Ireland, and University of Ulster, Northern Ireland, UK) says: “The ESC is committed to ensuring that the latest data, findings and priorities in CVD are accessible to policymakers, by providing clear scientific information and policy recommendations. We believe in the necessity of communication between the scientific community and policymakers, and continue to nurture our advocacy collaborations at national, European and global level.”
The ESC – Fit for the future

The “Spotlight” of the ESC Congress 2017 has been on the 40th anniversary of percutaneous coronary intervention (PCI) and the significant impact that it has had on cardiovascular care. However while looking back on past achievements is important, the ESC must look forward to ensure it is fit for the future. In this commentary, the President of the European Society of Cardiology (2016–2018)—Professor Jeroen Bax from Leiden University Medical Centre in the Netherlands—explains what the Society has been doing to ensure it continues to fulfil its mission of reducing the burden of cardiovascular disease in Europe.

As we come to the end of another successful ESC Congress, I am incredibly proud of the energy and engagement I have witnessed this year. Over the past few days, we have welcomed more than 31,000 delegates, a number tripling the last ESC Congress held here in 2014. Beyond the numbers, one of the most valuable aspects of this meeting is its diversity. Attendees have travelled to Barcelona from more than 140 countries, bringing with them an impressive breadth of experience. Both young and established cardiologists have benefited from a varied and insightful programme, as well as the opportunity to meet and collaborate with practitioners from around the world.

Moving forward, the ESC is working on five strategic pillars identified last year: membership, research, education, congresses and advocacy. In a time of rapid scientific innovation and shifting regulatory hurdles, it could not be more important for the ESC to respond and adapt to the diverse needs of its members. With this in mind, the ESC Board has established pathways to navigate cardiologists to the next decade.

Members are the lifeblood of the ESC, and fostering professional development is a crucial part of the society’s efforts. Much like the trend towards personalised medicine, the new ESC Professional Membership programme aims to respond to the unique needs of cardiologists. Unveiled in 2016, this programme has encouraged a sense of ownership and belonging within our membership, whilst diversifying ESC’s revenue.

Moving forward, we announced this week new combined memberships with ESC’s subsociety associations. Research is the primary driver of innovation, and the ESC has developed a number of exciting platforms to harness its power. Where randomised controlled trials fail to capture results relevant for a diverse clinical population, registries can offer an objective view into the real lives of our patients. To help focus the ESC’s varied research activities, we will continue to grant resources to granting to EU-funded projects, the ESC has created a single point of access for information on the website.

A highlight of this year’s educational activities has been the launch of the Diploma of Advanced Studies (DAS) in Cardiac Arrhythmias Management with Maastricht University and European Heart Rhythm Association (EHRA). The postgraduate course educates future leaders in cardiovascular medicine. The ESC’s family of journals now includes titles covering the entire spectrum of cardiovascular medicine, including the new The European Heart Journal – Case Reports. This online journal was launched in June of this year. The European Heart Journal, our flagship publication edited by Professor Thomas F. Lüscher of the Zurich Heart House, goes from strength to strength with a new impact factor ranking of 20.213 for 2016. This achievement is extraordinary when you consider that it is almost twice the impact factor of 2011. Our ESC congresses continue to evolve with record-breaking abstract submissions and attendances across the ESC portfolio of 12 congresses. We recently announced that, from 2018, EHRA-EUROPACE-CARDIOSTIM (currently held every two years) will become an annual congress with the new name “EHRA”—organised by the European Heart Rhythm Association (EHRA). Additionally, we have strengthened our ESC Congress 365 platform to make our educational content accessible across the globe at the touch of a button.

The ESC’s focus on advocacy is also proving meaningful. The European Association for Cardiovascular Percutaneous Interventions (EAPCI)’s review of coronary stents is now being used by EU regulators to revise device-specific guidance. To oversee our growing activities with advocacy, the ESC has created a new Advocacy Committee, chaired by Professor Peter Kearney from University College Cork in Ireland. Working to influence legislation in a logical extension of our responsibility to patients, Advocacy, together with our two other new committees on ethics and industry, will provide further platforms to define priorities and allow us to evolve for the future.

Continuing to develop our efforts with membership, research, education, congresses and advocacy will help us work towards our ultimate mission: to reduce the burden of cardiovascular disease.

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Valvular heart disease to be Spotlight of ESC Congress 2018

With ESC Congress 2017 drawing to a close, thoughts go to next year’s Congress—which is to be held in Munich, Germany, a city famous for its vibrant cultural heritage and rich history. Given the extent of research and innovation that is occurring in the field of valvular heart disease at present, the “Spotlight” of ESC Congress 2018 (25–29 August) will be in this area.

Programme Committee Chairperson, Professor Stephan Achenbach (Department of Cardiology, Friedrich Alexander Universität Erlangen-Nürnberg, Erlangen, Germany) says that the Spotlight will focus on all areas of valvular heart disease. “We will not only be looking at transcatheter valve therapies (although that field is growing rapidly), it is important also to review, for example, advanced diagnostic methods to identify valve disease and to help us better differentiate between valve disease that should be treated and valve disease that can be left alone. “The progress in this expanding field is tremendously fast and this is why valvular heart disease will be the Spotlight,” he says and adds that the topic is one “that is of interest to all cardiologists”.

ESC Congress 2018 will provide science and education across the entire spectrum of cardiology, as with any ESC Congress, it will serve as a single all-encompassing source for the latest and most vital information. For example, four revised ESC Guidelines are due to be presented: hypertension, myocardial revascularisation, cardiovascular disease during pregnancy, and syncope.

For those who want to submit an abstract for the Congress, the deadline is 14 February 2018. For information about submission, and ensure your abstract meets the required standards, visit: www.escardio.org/Congresses-&-Events/ESC-Congress/Call-for-Science

The ideal host city

Munich, according to Prof. Achenbach, was chosen as a venue because the city is “a superbly attractive congress destination”. He adds: “It has a conference centre that is perfectly suited to our needs, with modern facilities and ideal rooms for giving presentations to large audiences. Traveling to and from the congress venue is extremely easy and comfortable.”

Munich is a city that is full of culture and history. It became the capital of the Duchy of Bavaria in 1506, after which it became the centre of the German counter-reformation and renaissance arts during the rest of the 16th century. Additionally, the city developed as a centre for the baroque movement in the 17th century—giving a home to many Italian architects and artists to weave their stories into Munich’s already rich cultural tapestry. Today, the beautiful city is still world-renowned for the quality of its museums and art. It has been home or host to many famous composers and musicians including Orlando di Lasso, Wolfgang Amadeus Mozart, Carl Maria von Weber, Richard Wagner, Gustav Mahler, Richard Strauss, Max Reger and Carl Orff. Also, its world-famous Bavarian State Opera and the Bavarian State Orchestra mean that Munich retains its status as a global centre for music.

As well as having a rich cultural heritage, the city is a hub of business and industry. The companies that reside in Munich include BMW, Siemens, and Allianz, the world’s largest insurance company. The city is now a leader in blue-chip technology and a centre of the aerospace, biotechnology, software and service industries. Additionally, Munich has a long sporting history. The city hosted the 1972 Olympics—in a stadium that is an architectural landmark—as well as the final of the 1974 FIFA World Cup, which saw what was then West Germany triumph over the Netherlands. FC Bayern Munich is one of the most famous football teams in the world. Founded in 1900, the team has won 57 domestic titles and 11 international titles, spreading Munich’s name all over the globe and overshadowing their main local rivals, TSV 1860 München.

Munich is easily accessible by direct flight from all parts of the world. An enviable public transport system facilitates getting around and a large, central pedestrian zone, as well as many parks, are an invitation to stroll and explore.
 Broaden your horizons with future cardiology leaders’ programmes

The European Heart Academy (EHA) is dedicated to honing the skills of cardiology’s future leaders. As the population ages and the burden of cardiovascular disease increases, the discipline must broaden its shoulders to meet the healthcare demands of the future. The EHA’s programmes are engineered to prepare cardiology’s future leaders for the problems of the future; to fill existing and anticipated gaps in the development of specialised care.

Founder and Chief Strategy Officer of the European Heart Agency, where the EHA is located, ESC Past President (2012–2014) Professor Panos Vardas (University Hospital of Crete, Greece) told ESC Congress News, “In collaboration with selected universities, the Academy provides the ultimate cardiovascular degrees, according to the European Bologna framework. The specialised programmes combine key opinion leaders and executive style teaching formats with innovative, interactive and online learning tools.”

The academy’s Postgraduate Course in Heart Failure (PCHF) is in its third year of training established cardiologists to become heart failure (HF) specialists. Delivered in collaboration with the University of Zurich, Zurich, Switzerland, the Course offers a dynamic approach to learning, including interactive teaching, hands-on workshops, live case seminars and hospital visits. Successful students will receive a Certificate of Advanced Studies in Heart Failure upon completion of the course.

Stefania Paolillo, now a HF Fellow at the University of Naples Frederico II, Naples, Italy, took part in the first PCHF course from 2014 to 2015. She says: “The PCHF changed my approach to patients affected by HF and gave me a rigorous method to manage them. I understood that a HF specialist should approach the disease as a syndrome, providing multidisciplinary support to the patients and to their families, and creating an HF team to best treat this complex disease. Many aspects need to be considered in the approach of HF and the course helped me to have a clear priority on how to proceed, and to follow a strict methodology to avoid confusion and mistakes.”

Former student Chiara Minaia, San Martino Hospital, Belluno, Italy, adds: “This experience has been a crucial point in my career for many reasons, allowing me to access extremely high quality learning in the HF field. The course offers the priceless opportunity to establish links between students and their faculties. The course itself and all of the great experiences I went into from it have greatly contributed to my professional growth in HF, and strongly changed my daily practice; improving its quality and uniquely constituting a solid base on which to build my career as an HF specialist.”

Another EHA programme comes in the form of the Diploma of Advanced Studies (DAS) in Cardiac Arrhythmia Management course, which was developed with Maastricht University and the European Heart Rhythm Association. In its first year, this programme is training 32 participants to lead the field of arrhythmia. “One of the key needs identified by the ESC is the training of future leaders in arrhythmia management and research,” Prof. Vardas explains, saying, “The programme will empower electrophysiologists to fulfil leadership roles as well as regulatory and managerial positions in their hospitals, universities, and other work environments.”

Beyond clinical practice, the Academy’s Master of Sciences (MSc) course in Health Economics, Outcomes and Management in Cardiovascular Sciences is turning over 80 students from 28 different countries into experts in the place of cardiology in an increasingly value-based healthcare world.

For more information, see: www.escardio.org/Education/Postgraduate-Programmes.

It’s the combination of science and clinical practice that is most attractive aspect of it, and both science and clinical practice interest me. This conference is always well organised. Being the biggest cardiology congress in the world it means that all the colleagues that I want to see and hear from are here.