

NEWS FROM THE ESC

News from the ESC Congress 2012

Highlights of the European Society of Cardiology (ESC) 2012 Congress held in Munich, Germany on August 25th–29th included the first ever randomised trial addressing the treatment of patients on anticoagulants who receive a stent, and lots more data on the new percutaneous alternatives to valve surgery – TAVI and MitraClip. More from the congress is featured in our podcast at www.bjcardio.co.uk



WOEST: aspirin not required for stent patients on oral anticoagulants

A strategy of using clopidogrel as a single antiplatelet drug for patients receiving a drug-eluting stent who are also taking an oral anticoagulant appears safe and can reduce bleeding, the results of the WOEST study suggest.

How to treat patients on anticoagulation when they receive a stent is fraught with difficulty as giving the normal dual antiplatelet therapy with aspirin and clopidogrel means they will be taking three anti-clotting agents which could increase bleeding complications to a dangerous level. But no randomised clinical trials have ever investigated whether alternative strategies may be better.

The WOEST study, presented by Dr Willem Dewilde (TweeSteden Hospital, Tilburg, the Netherlands) investigated whether aspirin could be dropped in such patients. It enrolled 573 patients already treated with oral anticoagulants for atrial fibrillation or mechanical valves and undergoing coronary stenting, who were randomised to two groups: one given additional clopidogrel only (double therapy group), or a second given additional

clopidogrel and aspirin (triple therapy group).

Results (**table 1**) showed that at one-year follow-up, the dual therapy group had less bleeding (the primary end point) than the triple therapy group. There was a significant reduction in minimal and minor bleeding, and major bleeding was also numerically lower, but this did not reach statistical significance. The trial was not powered to show a difference in ischaemic events, but there did appear to be a reduction in mortality in the dual therapy group, and there was no increase in myocardial infarction or stent thrombosis.

Dr Dewilde commented: "Although the number of patients in the trial is limited, this is an important finding with implications for future treatment and guidelines in this group of patients known to be at high risk of bleeding and thrombotic complications".

Co-chair of an ESC press conference on the study, Professor Keith Fox (University of Edinburgh) noted that although the trial was small, it was the first randomised data on this issue, and as such could be practice changing.

"If we look at the evidence prior to this, there has been very little. So this is a very big step. The community will take this seriously," he said.

- Professor Fox discusses the WOEST study in our ESC podcast

Table 1. Major results in the WOEST study

	Dual therapy	Triple therapy	P value
All TIMI bleeding events	19.5%	44.9%	<0.001
Composite efficacy end point	11.3%	17.7%	0.025
Death	2.6%	6.4%	0.027
Myocardial infarction	3.3%	4.7%	0.382
Target vessel revascularisation	7.3%	6.8%	0.876
Stroke	1.1%	2.9%	0.128
Stent thrombosis	1.5%	3.2%	0.165

MitraClip looks good for high risk mitral valve patients

Another European registry has shown favourable results for use of the percutaneous MitraClip for mitral valve repair. The clip is delivered by catheter through the femoral vein, and is designed to reduce significant mitral regurgitation by clipping together the leaflets of the mitral valve.

ACCESS-EU, a registry of 567 MitraClip patients from 14 European sites, is the largest group of patients evaluated to date. Patients were elderly (mean age 74) with significant co-morbidities, including coronary artery disease in 63% and moderate to severe renal disease in 42%. At baseline, 85% were in

New York Heart Association (NYHA) Class III/IV heart failure, and 53% had left ventricular ejection fraction less than 40%. The majority of patients had functional mitral regurgitation, and were considered at high risk for mitral valve surgery.

Results at one year showed that 82% of patients were still alive, 79% had mitral regurgitation grade 2+ or less, and 94% remained free from mitral valve surgery. The majority of patients showed significant clinical improvements, with 72% now classified in NYHA Class I/II. In addition, results reflected an improved functional

capacity, with a median improvement of 60.5 meters for six-minute walk distance, and improvements in quality of life, reported Dr Wolfgang Schillinger (Universitätsmedizin Göttingen, Germany).

He concluded that: "Where the benefits of surgery do not outweigh the risks, the MitraClip treatment is an important alternative for patients with mitral regurgitation."

The transcatheter aortic-valve implementation (TAVI) and MitraClip percutaneous procedures are both discussed in more detail in the new ESC guidelines on the treatment of valve disease, which were released at the meeting.

TRILOGY ACS: no role for prasugrel in medically treated ACS

The antiplatelet agent, prasugrel, failed to significantly reduce cardiovascular events versus clopidogrel in the TRILOGY ACS trial in high-risk acute coronary syndrome (ACS) patients managed medically without revascularisation.

Study chairman, Dr Magnus Ohman (Duke University Medical Center, Durham, US) noted that TRILOGY was designed to complement the TRITON trial in which prasugrel was associated with significantly lower rates of ischaemic events, versus clopidogrel but with an increased risk of major bleeding in ACS patients undergoing revascularisation. "The aim of TRILOGY was to see if prasugrel was just as effective in ACS patients who weren't getting stents or bypass surgery," he said.

The trial randomised 7,243 ACS patients not undergoing revascularisation to prasugrel (10 mg daily reduced to 5 mg for patients under 60 kg) or clopidogrel (75 mg daily) for up to 30 months of treatment. The primary end point – cardiovascular death,

Table 1. TRILOGY primary end point

	Prasugrel	Clopidogrel	HR (95% CI)	P value
Cardiovascular death, myocardial infarction, or stroke	13.9%	16.0%	0.91 (0.79–1.05)	0.21

myocardial infarction, or stroke through a median follow-up period of 17 months – was not significantly different between the two groups (table 1).

An additional analysis including an additional 2,083 patients aged 75 years or older in whom a reduced 5 mg dose of prasugrel was compared to the regular clopidogrel dose showed similar results.

Some good news

Unlike the TRITON trial, TRILOGY did not show an increase in severe bleeding complications with prasugrel, possibly because of the dose reductions in low body weight and elderly patients. Dr Ohman said

this gave reassurance on concerns about the prolonged safety of the drug.

In addition, there was a surprising, time-dependent effect seen, with a trend towards a lower risk of ischaemic events with prasugrel after 12 months. "While there was no difference in the rate of the primary composite end point or its separate components between the two groups in the first year of the study, the curves began to diverge after the one year mark. This is an unexpected finding, and means that the trial raises more questions than it answers and is going to require a lot more analysis," Dr Ohman said.

- The implications of TRILOGY for practice are discussed in our ESC podcast

More encouraging results with TAVI

New data on use of transcatheter aortic-valve implantation (TAVI) from a German registry are reassuring for high-risk patients, with in-hospital mortality was "just as good, if not better" than with conventional aortic-valve surgery, reported Dr Christian Hamm (Kerckhoff Heart and Thorax Centre, Bad Nauheim, Germany). "Patients in high risk groups benefit at least as much from TAVI procedures, particularly when performed transfemorally, as from conventional surgery," he added.

The German Aortic Valve Registry (GARY) was started in July 2010 and is the only registry so far to include both the new transcatheter procedure and conventional aortic valve replacements and repair. By July 2012 more than 26,000 patients were included from 92 centres, of whom 23% received TAVI.

Data were reported on 15,252 patients treated in 2011. This showed that TAVI is being used mainly in line with current guidelines, with 85% of all patients undergoing the transcatheter procedure being

over 75 years (average 81 years versus 68 for surgery), and the TAVI patients also having a higher perioperative risk of mortality.

The reported in-hospital mortality for elective patients was 2.1% for conventional surgery, 5.1% for the transfemoral TAVI and 7.7% for the transapical approach. Stratification of the patients into risk groups revealed a particular benefit for people with high- and very high-risk when treated transfemorally, with mortality rates of 4.7% and 7.7%, respectively.

The overall number of cerebrovascular events during hospital stay was 2.2% in the conventionally treated group versus 3.7% for transfemoral TAVI and 3.5% for transapical TAVI. Vascular complications occurred in 11.9% for the transfemoral, 2.5% for the transapical and 1.0% for the conventional group. The number of patients who needed more than two units of packed red blood cells was 29.4% in conventional surgery and 25.4% with the transapical, versus 11.5% with the transfemoral approach.

Professor Friedrich-Wilhelm Mohr (Leipzig Heart Centre, Germany) commented: "Post-procedural rates of cerebrovascular events, vascular complications, renal failure and blood transfusions have decreased but need further attention. The high number of patients in the register will allow for thorough risk factor analysis for these complications. With the help of subgroup analyses and stratification for risk factors, we also expect to detect which treatment is best for which patient."

Designated discussant of the results, Dr Olaf Wendler (King's College Hospital, London), noted that around half of aortic valve patients more than 75 years of age are receiving the TAVI procedure which he said was "impressive" and far higher than anywhere else worldwide.

But he pointed out that the in-hospital mortality for the registry's lower-risk TAVI patients was higher than that predicted, questioning if this is the right treatment for this group of patients.

NEWS FROM THE ESC

Renal denervation benefits persist to 18 months

Long term results from the SYMPPLICITY HTN 2 trial suggest that the blood pressure benefits of renal sympathetic denervation persist for at least 18 months.

Earlier results from the trial showed that ablation of the renal nerves led to average blood pressure reductions of 32/12 mmHg at six months in patients with drug-resistant hypertension.

After the six month point, patients in the control group were also offered the renal denervation treatment. The 18-month results showed that patients in the original ablation group continued at the blood pressure level demonstrated at six months (an average reduction of 32/12 mmHg from baseline) while those in the control group who had also

now had the procedure also showed similar reductions (28/13 mmHg) from baseline.

Dr Murray Esler (Baker IDI Heart and Diabetes Institute, Melbourne, Australia) reported that pulse pressure improved and heart rates were stable or lower following the procedure. Also, no device-related serious adverse effects and no detrimental effects on the renal vasculature have been reported.

The renal denervation procedure also seems to have beneficial effects on psychological measures, according to a 173-patients study presented by Dr Denise Fischer (Universitätsklinikum des Saarlandes, Homburg, Germany). This showed that three months after ablation, blood pressure had decreased by an average of 17/7 mmHg, and

the patients showed significant improvement on a multitasking test designed to assess their ability to respond to stress. Quality of life, anxiety, and depression, headache intensity and sleep problems also improved significantly.

Positive results with renal denervation were also reported from a French registry of 35 consecutive patients. Dr Darren Mylotte (Institut Cardiovasculaire de Paris Sud, France) noted that the average baseline blood pressure was 181/100 mmHg despite an average of 4.6 medications per patient and, at six-months after the procedure, this had been reduced by an average of 30.3/14.6 mmHg.

- Dr Sarah Jarvis discusses the relevance of renal denervation studies for primary care in our ESC podcast

FAME II results show benefits of FFR-guided cardiac stenting

Patients with fractional flow reserve (FFR) guided stenting plus the best available medical therapy had superior outcomes to those treated with medical therapy alone, according to results from the FAME II Trial presented during a Hot Line session.

For patients found to have a significant stenosis with FFR, the primary endpoint (a composite of death, myocardial infarction, or urgent revascularisation) occurred in 4.3% of those in the percutaneous coronary intervention (PCI) plus medical therapy group versus 12.7% of those in the medical therapy group. The difference was driven by lower rates of urgent revascularisation in the PCI group than in the medical therapy only group (0.7% vs. 9.5%, $p < 0.001$).

The new findings build upon data from the original FAME trial, which demonstrated improved outcomes and cost-savings when FFR is utilised to guide cardiac treatment procedures.

- Learn more about the FAME study in our ESC podcast

New drug class may provide clinical benefits in patients with HF-pEF

The investigational compound LCZ696, an angiotensin receptor neprilysin inhibitor, is the first-in-class therapy to significantly reduce a key predictor of morbidity and mortality in patients with heart failure with preserved ejection fraction (HF-pEF).

Results from the Phase II PARAMOUNT study presented showed that after 12 weeks, LCZ696 met its primary end point by reducing N-terminal pro-B-type natriuretic peptide significantly more than valsartan. The data also suggest that LCZ696 may reverse some structural changes to the heart that occur in patients with heart failure.

"LCZ696 is unique in simultaneously blocking the renin angiotensin system while augmenting the body's intrinsic natriuretic peptide system through neprilysin inhibition," said Professor Scott Solomon (Harvard Medical School, Boston, US). "These dual effects may be important in the treatment of HFpEF."

- More on this new agent is discussed in our ESC podcast

ESC selects London for 2015 Congress

The 2015 Congress of the European Society of Cardiology (ESC) will be held in London. The Congress is the largest cardiology meeting in the world, with roughly 35,000 medical professionals expected to attend the five-day event from 29 August – 2 September 2015.

Professor Kim Fox (Royal Brompton Hospital, London), Past President of the ESC, said: "The UK has been a

pioneer in cardiovascular research and treatment and it is fitting to bring the congress back to London for the first time in 63 years. Venues for events of this size are difficult to find and we are overjoyed that London now has the structure to host the ESC Congress. The eyes of the medical world will be focused on London as a leader in science and education".



Younger women – a new risk group for MI

While better treatment does seem to be translating into a lower overall mortality rate after myocardial infarction (MI), there is a worrying trend of more heart attacks occurring in younger people, particularly women, according to the results of a new French study.

The FAST-MI study reported data from four one-month French nationwide registries, conducted five years apart (1995 to 2010), including a total of 6,707 patients with ST elevation MI.

During the study period, 30-day mortality decreased from 13.7% to 4.4% in STEMI patients; mortality decreased from 9.8% to 2.6% in men and from 23.7% to 9.8% in women. However, the average age of those with STEMI decreased from 66.2 years to 63.3 years over the study period, which appeared to be due to an increase in the proportion of younger women with STEMI.

Presenting the data, Dr Nicholas Danchin (Hôpital Européen Georges Pompidou, Paris, France), noted that two different trends seem to be

occurring. The mortality rate in the older “traditional MI candidate” is falling, probably because of better primary-prevention efforts, and better treatment when the MI occurs. However, some of this progress is being countered by an increase in MI in younger people – particularly younger women (under 60 years) who smoke.

He reported that younger women still represent a small proportion of all MI patients (about 7% to 8%), but this is up from about 2% to 3% 15 years ago. Danchin suggested that the most likely explanation for this is the increased prevalence of smoking in younger women.

Data from the FAST-MI study show that smoking rates in younger women who have had an MI dramatically increased from 37% in 1995 to 73% in 2010. Obesity rates also increased in this group – up from 18% in 1995 to 27% in 2010.

- Dr Sarah Jarvis discusses this study in our ESC podcast

Professor Keith Fox and Dr Sarah Jarvis discuss the implications of these and other studies from the ESC in our podcast on www.bjcardio.co.uk



Highlights from HRC 2012



HRC2012

This year's Heart Rhythm Congress (HRC 2012), held in Birmingham from 23rd–26th September, was the largest to date showing the growing interest in this specialty. Drs Janet McComb, André Ng, Henry Purcell and Andreas Wolff report from the meeting

Stroke risk assessment in AF

New insights on stroke risk assessment were provided by Dr Ami Banerjee (University of Birmingham) in a session supported by the Atrial Fibrillation Association.

The CHADS₂ risk stratification scoring system is currently the indicator for the Quality and Outcomes (QoF) framework used to determine whether an atrial fibrillation (AF) patient warrants anticoagulation. It may underestimate risk, however, as those with a score of zero may actually be at substantial stroke risk. He also pointed out that the system has inherent disadvantages. It does not include many of the risk factors for stroke, it has been derived from historical data sets, and it does not identify patients at low risk of stroke.

“Truly low risk is the new target for risk prediction,” says Dr Banerjee, who thinks

Table 1. The 2009 Birmingham Scheme – CHA₂DS₂-VASc Scoring System

Risk	Score	
C	Congestive heart failure/Left ventricular dysfunction	1
H	Hypertension - high blood pressure	1
A₂	Age ≥ 75	2
D	Diabetes mellitus	1
S₂	Stroke/transient ischaemic attack/thromboembolism	2
V	Vascular disease - coronary artery disease, myocardial infarction, peripheral artery disease, or aortic plaque	1
A	Age 65–74	1
Sc	Sex category - female gender	1

In the CHA₂DS₂-VASc Scoring System, high risk is a score ≥ 2

the preferred prediction tool should be the CHADS₂DS₂-VASc system (**table 1**) – as advocated in the updated (2012) guidelines for AF management from the European Society of Cardiology (ESC) – since it takes into account vascular disease, age 65–74 years and gender. Thus patients with a CHADS₂DS₂-VASc score of zero or those under 65 years, and lone AF irrespective of gender, have a truly low stroke risk and do not need anticoagulation.

Bleeding risk

“All anticoagulants increase bleeding,” Dr Joe DeBono (University Hospitals, Birmingham) reminded delegates. With warfarin, an indication of anticoagulation activity is given by the INR (with a target of 2–3 for most indications), and reversing its use – with a prothrombin complex concentrate (PCC) and

NEWS FROM THE HRC

frozen plasma, for example – is fairly straight forward. In contrast, it is difficult to assess activity with the novel oral anticoagulants (NOACs) which are without “proven antidotes”. They do have shorter half-lives, he said. They appear to reduce intracranial haemorrhage (ICH) but they may increase gastrointestinal bleeding.

He asked whether the lack of an antidote mattered. Possible reversal strategies for all anticoagulants include use of activated charcoal, and PCC (very expensive and effective in reversing warfarin but its effects with NOACs are less clear). Most bleeds with NOACs appear to be non-fatal and mild, with the latter responding to local haemostatic measures while more serious bleeds may require fluid replacement and fresh frozen plasma. It is key “to get an early haematological opinion”, said Dr DeBono.

He also considered what should be done if patients need an operation or other intervention, as was the case in a quarter of patients during the RE-LY trial, for example. With NOACs having short half-lives, it may be possible to delay the procedure for a day or two. Clotting tests may also be useful. Dialysis or reversal agents should be considered but it is important to avoid neuraxial blockade e.g. epidural anaesthesia and anticoagulants, he said.

“Prevention is better than cure,” he concluded, reminding delegates not to anticoagulate low-risk patients.

Bleeding assessment

Dr Ron Pisters (University Medical Centre, Maastricht, The Netherlands) presented views on how and why we should assess bleeding. First, he said, think about stroke risk and then the risk of bleeding. AF, he said, is a cardiovascular risk factor and “not an arrhythmia *per se*”. He highlighted how only 50% of patients receive anticoagulation while 70% warrant it.

He described how the HAS-BLED score (table 2) has put “bleeding risk on the agenda”. Recommended in the ESC guidelines, HAS-BLED has had “extensive validation” and Dr Pisters believes it should be deployed to “advance the care of AF patients” and reduce the risk of bleeding.

GRASP-AF

An important session on stroke prevention in AF was hosted by NHS Improvement. Dr Richard Healicon (National Improvement Lead, NHS Improvement) updated the audience on progress with the GRASP-AF programme, which has seen over 2,200 practices uploading data on 285,000 patients with AF.

The average prevalence of AF has risen to 1.78% suggesting that 900,000 patients in England could suffer from this condition. The latest version of GRASP-AF gives the option of using either the CHADS₂ or CHA₂DS₂VASc risk assessment tool, and CHA₂DS₂VASc data is available on 26,000 patients so far. Anticoagulation rates have risen very slowly by 2.5%, which means that 44% of patients at high risk of stroke are still not anticoagulated.

Marion Kerr (Insight Health Economics) followed with an insightful economical analysis of stroke prevention in AF based on the latest GRASP-AF data. She estimated that every year 18,000 strokes and 5,500 deaths could be prevented in England with optimal stroke prevention. Potential cost savings to the NHS are around £133 million, while those to society could total £260 million.

Dr Matt Fay (Westcliffe Medical Practice, Shipley) spoke about improving stroke prevention and focused on addressing the misconception that aspirin is an effective and safer alternative to anticoagulation in AF. Dr Campbell Cowan (Leeds General Infirmary) highlighted that with the shift to CHA₂DS₂VASc as the risk assessment tool of choice, the threshold for anticoagulation was lowered significantly at the same time.

Anticoagulation

What makes an optimal anticoagulant? This was the question addressed by Professor Gordon McInnes (University of Glasgow) in a Bayer Healthcare sponsored symposium. All of the anticoagulants we have “are undoubtedly highly effective but have major limitations”, he said. Sometimes they need to be given parenterally and often more than once daily. They all have a potential to cause bleeding and have a narrow therapeutic index. Many have important interactions with other drugs and with foodstuffs. Thus monitoring

Table 2. The HAS-BLED bleeding risk score

H ypertension
1 point for uncontrolled high blood pressure, with a SBP \geq 160 mmHg
A bnormal kidney and/or liver function
1 point for impaired kidney or liver function 2 points for both
S troke
1 point for previous history of stroke, especially deep brain (lacunar) stroke
B leeding
1 point for previous history of bleeding, anaemia or predisposition to bleeding
L abile INR
1 point for unstable or high INRs, or poor time (less than 60%) in the therapeutic time range
E lderly
1 point for age \geq 65 or older
D rugs and/or alcohol
1 point for taking antiplatelet agents 1 point for consuming 8 or more alcoholic drinks per week (or 2 points for both)

Key: SBP = systolic blood pressure

is often necessary and there is a frequent need for dose adjustment. Onset and offset of drug action is relatively slow, which is a problem if there is a need for rapid effect and, conversely, if you need to stop them because of complications.

Professor McInnes reviewed all the anticoagulant classes and looked at the unmet needs in oral anticoagulants. We need drugs that are:

- rapidly active and can be rapidly inactivated
- have a wider therapeutic margin
- have low potential for food and drug interactions
- require infrequent dose adjustment
- avoid need for monitoring

This is the challenge, he said, faced by the new oral anticoagulant agents, which inhibit either thrombin or factor Xa (table 3).

Table 3. Profiles of the available novel oral anticoagulants (NOACs)

	Dabigatran	Apixaban	Rivaroxaban
Target	Factor IIa	Factor Xa	Factor Xa
Dosing	Twice daily	Twice daily	Once daily
Half-life (h)	12–14	8–13	5–13
Renal excretion (%)	80	25	33
Drug interactions	Potent inhibitors or inducers of P-gp	Potent inhibitors of CYP3A4	Potent inhibitors of CYP3A4 or P-gp

Key: CYP3A4 = cytochrome P450 3A4; P-gp = P-glycoprotein

Adapted from: Wisler JW, Becker RC. *Crit Pathways in Cardiol* 2012;11:55–6 and other sources

Highlights from abstracts, posters and basic sciences

The scientific sessions saw vibrant contribution from many electrophysiology and device centres showcasing data from the latest in cutting-edge research and good clinical practice. Around half of 130 abstracts submitted were selected for presentation as oral and poster (moderated and standard) communications.

Presentations included risk stratification for sudden cardiac death, which continues to be an important research area with promising data from a new proposed algorithm. Interest is growing in Patient Reported Outcome Measures (PROMs) in ablation procedures and the implications of reporting these measures in the context of commissioning for procedures. The high incidence of AF in pacing population (identified with pacemaker interrogation) was also presented especially the importance that, when asymptomatic, patients may not receive appropriate antithrombotic therapy. Data were presented from two separate centres on the practice of pacemaker implantation following open heart surgery. The requirements from different types of operations were highlighted and the incidence appeared to be related to surgical complexity.

Awards

Congratulations were given to the AA-Excellence in Practice award winners at the congress: Martin Harman (for Outstanding Contribution to Arrhythmia Services), Dr Carolyn Dean (for Outstanding Medical Contribution to Cardiac Rhythm Management), Melloney Ferrar (for Outstanding Contribution to Arrhythmia Management) and Professor Gregory Lip and Dr Deirdre Lane (Team of the Year). In the Young Investigators Competition, awards went to: Louisa Malcolm-Lawes (Clinical) and James Harrison (Basic Science). HRC 2013 will take place on 20th–23rd October 2013 at the ICC, Birmingham ●

Reviewing the NOACs, which included dabigatran, rivaroxaban and apixaban, he said these offered “real potential” (table 3). All are oral agents and have a relatively brief time to maximum serum concentration and none require anticoagulation monitoring, he said. All have a fairly intermediate half-life – some may be taken once rather than twice daily, which may be an important “practical, pragmatic difference between these drugs,” he said. They also have differences in bioavailability and protein binding.

In terms of drug interactions, Professor McInnes said that there was no evidence so far of interactions with foodstuffs with the NOACs but there is potential for interactions with some powerful enzyme inducers, which tend to be limited to select patient groups, such as those being treated for systemic fungal infections/HIV for example. Looking at drug clearance, he said that agents such as rivaroxaban and apixaban which favour hepatic metabolism, may offer “a potential safety margin” in patients with renal impairment.

NOACs and VTE

Dr Alexander Cohen (Kings College Hospital, London) presented on an unlikely but clinically extremely important topic for HRC – treatment of venous thromboembolism (VTE). He reminded delegates that every year more patients die from VTE than from HIV, breast cancer and road traffic accidents, put together and might account for as many as 60,000 deaths per annum in the UK. In addition, VTE can also lead to significant morbidity in the form of pulmonary hypertension and

post-thrombotic syndrome. He presented “secondary prevention” data comparing NOACs with standard therapy of parenteral anticoagulant plus warfarin, with emphasis on the EINSTEIN programme utilising rivaroxaban. EINSTEIN-DVT and EINSTEIN-PE both demonstrated non-inferiority over standard therapy in terms of preventing recurrent thromboembolism with comparable safety data to the warfarin-based regime. A similar finding was seen with dabigatran in the RE-COVER programme.

EINSTEIN-Extension compared the safety and efficacy of rivaroxaban to placebo in the secondary prevention of recurrent symptomatic venous thromboembolism, by prolonging preventative treatment by six or 12 months beyond a completed course of anticoagulation therapy. This showed that in the placebo group the recurrence rate was significant at 7.1% and that rivaroxaban reduced recurrence by 82%, at the cost of a slight increase in bleeding complications.

Devices, leads and other complications

One of the highlights of the conference was a session devoted to a lead used with implantable cardioverter defibrillators, which is prone to early failure (St Jude Medical Riata), and which is the subject of medical device alert issued by the Medical Healthcare products Regulatory Agency (MHRA). Delegates learned that the next generation lead is less likely to fail.



More reports from HRC 2012 are available at www.bjcardio.co.uk