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ESC Congress 2017 – what did we learn?

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As the dust settles on the European Society of Cardiology (ESC) Congress 2017, we can reflect on another very successful annual meeting in terms of attendance, logistics and scientific content. With a regular attendance of more than 30,000, in recent years the ESC Congress has grown to be the largest of the meetings organised by the major professional societies in cardiovascular medicine in Europe and the USA. The meeting took place in Barcelona against the background of terrorist attacks in the city centre and the surrounding area a week earlier. Security was somewhat higher but the attendance was not affected, and official figures reported that 31,705 delegates from a record-breaking number of 153 different countries attended. These figures are also noteworthy against the background of new restrictions relating to direct sponsorship of physician delegates by industry[1].

The spotlight of the congress this year was on interventional cardiology, in commemoration of the 40th anniversary of the first percutaneous coronary intervention (PCI) by Andreas Grüntzig on 16 September 1977. To coincide with the congress and with this anniversary, EuroIntervention, the European Heart Journal and The Lancet all presented special commemorative issues on the history of PCI[2,3]. In addition, a number of dedicated sessions shone a light on the historical aspects of the development and growth of PCI, remembering the pioneers who drove the field in its youth and adolescence and the patients who entrusted their fate to these new techniques and treatments. None who were present at the session on the history of PCI organised by our Association will forget the sight of Antonio Colombo taking the podium in cowboy hat and neck scarf to highlight the important contribution of "interventional cowboys" – the term used in the very best sense of the word – in advancing the field of percutaneous cardiac intervention.

Continuing the focus on intervention, four new guideline documents were presented for the first time by the Committee for Practice Guidelines, all of which have direct relevance for interventional cardiologists. Borja Ibanez and Stefan James led the document on ST-elevation myocardial infarction[4], Marco Valgimigli chaired the focused update on dual antiplatelet therapy[5], Helmut Baumgartner and Volkmar Falk led the valvular heart disease document[6], and Victor Aboyans and Jean-Baptiste Ricco produced a new guideline on the management of peripheral arterial disease[7]. These documents are available to download for free on the ESC website and in the increasingly popular ESC Pocket Guidelines app.

The ESC Congress continues to attract high-quality, large-scale, multicentre, late-breaking clinical trials, and this year was no exception. A number of trials were of particular interest to interventional cardiologists.

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There can be few areas of interventional cardiology that attract such frequent discussion as the question of how best to manage antiplatelet therapy in patients with an indication for oral anticoagulation who are undergoing PCI. In the RE-DUAL PCI trial, 2,725 PCI patients were randomly allocated to triple therapy with a vitamin K antagonist, a $P2Y_{12}$ inhibitor (mainly clopidogrel [in 88%]) and aspirin versus two dual therapy regimens consisting of dabigatran either 110 mg or 150 mg twice daily plus a $P2Y_{12}$ inhibitor[8]. The main finding was that the incidence of bleeding (major and clinically relevant non-major) was reduced with both the 110 mg and 150 mg dual therapy regimens (hazard ratio [HR] 0.52, 95% CI: 0.42 to 0.63; p<0.001 for non-inferiority; p<0.001 for superiority; and HR 0.72, 95% CI: 0.58 to 0.88; p<0.001 for non-inferiority; respectively) without a significant increase in the risk of death/thromboembolic complications/revascularisation. Nevertheless, there was a signal of concern regarding an increased risk of myocardial infarction and stent thrombosis in the dual therapy group treated with dabigatran 110 mg. As the trial was not powered to assess fully the risk of these events, although the differences were not statistically significant, this concern needs to be taken seriously. All in all, the data provide some additional support to the guideline-recommended approach to these patients: this consists of a tailored approach based on assessment of the overall ischaemic and bleeding risks – either a short duration triple therapy (between one and six months) or, as an alternative, dual therapy with anticoagulation and clopidogrel[5].

The BIOFLOW-V investigators presented the primary results of a multicentre clinical trial comparing the Orsiro biodegradable polymer sirolimus-eluting stent (Biotronik, Bülach, Switzerland) with the durable polymer everolimus-eluting XIENCE stent (Abbott Vascular, Santa Clara, CA, USA)[9]. The Orsiro stent has been quite widely used in Europe for a number of years and this trial was designed with a view to generating data for approval in the USA. Although a rather complicated Bayesian testing approach was used in the trial design and analysis, the main message was clear: the BIOFLOW-V data built on earlier randomised trials and show that the Orsiro stent has a clinical performance broadly in line with other new-generation drug-eluting stents[10].

In terms of antiplatelet therapy after PCI in patients presenting with ACS, current guidelines recommend preferential use of more potent ADP receptor antagonists, generally for 12 months[5]. Both prasugrel and ticagrelor are well established as standard of care. In addition, a general recommendation is made against the use of platelet function testing[5]. Against this background, the TROPICAL-ACS trial investigated a strategy of therapy de-escalation after one week guided by platelet function testing and showed comparable results in terms of net clinical outcomes compared with standard therapy of 12 months of prasugrel (HR 0.81, 95% CI: 0.62-1.06; $p_{non\text{-}inferiority}$=0.0004; $p_{superiority}$=0.12) though no difference in terms of bleeding events (BARC 2 or more; HR 0.82, 95% CI: 0.59-1.13; p=0.23)[11]. These data suggest that a de-escalation strategy might be a reasonable alternative for selected patients, adding to data from another recent randomised trial of de-escalation without platelet function testing[12].

Javier Escaned and colleagues presented the results of the SYNTAX II study comparing outcomes of patients with multivessel coronary artery disease treated with Heart Team decision making, contemporary PCI management including invasive haemodynamic assessment of lesions, intravascular imaging-guided stenting and new-generation drug-eluting stents[13]. The primary endpoint was a composite of death, stroke, myocardial infarction and revascularisation at one year, and the primary analysis was against a historical control group of patients with similar risk enrolled in the PCI group of the SYNTAX trial. The main finding was that the primary endpoint was significantly reduced in the SYNTAX II patients (HR 0.58, 95% CI: 0.39-0.85, p=0.006). Although the limitations inherent to a historical control comparison are clear, the study provides a rationale for a new trial re-testing the clear advantage seen heretofore with bypass surgery in this patient group.

There was, of course, much more to discuss including favourable data for secondary prevention of coronary and peripheral arterial disease with a combination of low-dose non-vitamin K antagonist and aspirin (the COMPASS trial)[14], and what might be interpreted as proof of principle for the inflammatory hypothesis of atherothrombosis in the CANTOS trial[15]. Space does not permit further discussion on these trials but of course the full details of the studies including slides and videos of the presentations remain available for all ESC members online at the excellent ESC365 portal (www.congress365.escardio.org). With the memory of this year's excellent meeting still fresh in our minds, we in Munich can already start to look forward to welcoming our community for next year's annual congress.

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