

Report on ACC.13

The Annual Meeting of the American College of Cardiology

San Francisco, 09-11 March 2013

I am most grateful to Bayer Pty (Ltd) who kindly sponsored my air travel to and from San Francisco. Registration, accommodation and sustenance were for my own account.

The meeting venue was spacious and conveniently located within walking distance of most hotels. The contraction of the meeting to only 3 days from its previous 4½ days was a negative feature but was possibly the result of the continuing economic crisis in the Northern hemisphere reducing the number of attendees and diminishing the sponsorship available from industry. Further evidence of the diminishing sponsorship was a sharp decline in the number of satellite meetings offered by industry. In my view an additional factor decreasing attendance is the ever widening internet access to both meeting content as it happens and the other extensive continuing medical education programmes that are available to cardiologists. In this, the ACC is itself promoting its Life Long Learning programme for members which not only provides individually targeted education programmes and Maintenance of Certification (MoC) support, but also suggests to participants which additional programmes might be of use to them in improving the gaps detected in their knowledge. This year there was no printed programme to be handed out to attendees. The programme could be accessed only through an app downloaded to one's cell phone or iPad. Woe betide those who do not (yet) have such equipment! The ACC has also improved and extended its patient education website cardiosmart.org.

The following is a summary of the presentations I attended during the three days of the meeting:

Of note, the ACC prohibited the presentation of the PREVAIL trial during the opening session due to a violation of confidentiality by pre-publishing its results. PREVAIL studied the effects of a left atrial appendage occluder in non-valvar atrial fibrillation.

Atherosclerosis:

A CT study of mummies from Egypt, Peru, USA and the Aleutian Islands, some as old as 4 000 years, showed evidence of atherosclerosis (the presence of arterial calcification) in each despite their geographic and dietary differences.

Valentin Fuster gave a named lecture addressing the prevention and treatment of atherosclerotic disease. Research by his foundation has demonstrated that sustained life style changes can be brought about by educating children between the ages of 4 and 6 years. Beneficial life style changes can be brought about by bringing high risk adults into contact with one another. He also discussed 3-D carotid ultrasound which detects an additional 37% of atherosclerotic changes in adults. Atherosclerotic changes are highly prevalent in older individuals. Measuring this "burden of disease" in the carotids correlates more closely with the presence of coronary artery disease than the Framingham Risk Score, as well as correlating with cerebral white matter changes and cognitive decline.

Dyslipidaemia

Jane Armitage presented the HPS2-THRIVE trial which compared extended release niacin + laropiprant to placebo in patients on background therapy with simvastatin or simvastatin + ezetimibe. The study population of 25 673 patients had an average age of 65 years, were male in 83%, 78% had known coronary artery disease and 37% were diabetic. The average LDL cholesterol was 1.6 mmol/L. 25% of patients discontinued study medication because of flushing. Compliance was 78%. The active treatment was associated with an increase in diabetic complications, an increase in new onset diabetes, infection, gastrointestinal complaints and, particularly in China, a 6X increase in myopathy. There was no reduction in cardiovascular events. Mortality was increased by 9%.

Dr Helen Hobbs gave the Bishop Lecture, tracing her recognition of PCSK9 as an important contributor to lipid metabolism through to the development of an antibody inhibitor which has been shown potent effects in reducing LDL cholesterol and Lp(a) alone or when added to potent statin treatment.

Lamas presented the high-dose oral vitamin arm of the TACT study which was first presented at AHA 2012 and showed some benefit of EDTA chelation therapy. The trial has a 4X4 design that included high dose oral vitamins which have traditionally been included as part of chelation therapy. Vitamins were shown to have no effect.

Acute Coronary Syndromes

Deepak Bhatt presented the CHAMPION PHOENIX study which examined the effect of the ultra-short acting intravenous P₂Y₁₂ inhibitor cangrelor vs. clopidogrel (which was not front-loaded but given as 300 / 600 mg at the time of angiography) in acute coronary syndromes. Both arms received on going clopidogrel after the intervention. Cangrelor was superior in reducing MACE and early stent thrombosis.

The STREAM trial enrolled 2 000 patients presenting with ST elevation MI less than 2 hours after symptom onset who could not be submitted to coronary angiography within the next hour. They were randomised either to immediate thrombolysis with rescue PCI if required, or to immediate transfer for angiography and primary PCI. First medical contact occurred in just more than 60 minutes. Randomisation (mostly in the ambulance) took 30 minutes and thrombolysis was administered within 9 minutes. Rescue PCI was required in 37% of this group. The other 63% had non-urgent coronary angiography at 17 hours. PPCI in the immediate intervention group took 86 minutes. The results were in favour of thrombolysis with less heart failure and shock, confirming the guideline recommendations.

The REMINDER study compared eplerenone to placebo in STEMI patients without heart failure, commencing within 24 hours of presentation. There was a significant reduction in the primary endpoint driven mainly by surrogate markers of left ventricular dysfunction.

Intervention

A symposium was held discussing femoral and radial artery access. There is debate whether it is better to use fluoroscopic landmarks or ultrasound to determine the site of puncture.

Micropuncture techniques may be considered but have at times resulted in extravascular placement of sheath due to the fine guidewire entering under the intima. In radial artery access front-only and back wall puncture do not appear to influence outcome. Radial artery occlusion is frequently asymptomatic but may pose problems with subsequent access. It was advised not to attempt to mechanically reopen an occluded radial as this may result in distal embolization and more severe ischaemia. One potentially successful option is to temporarily occlude the ulnar artery to “push” blood in the direction of the occluded radial.

A randomised trial of high dose (40 mg) rosuvastatin on a background of IV fluid and N-acetylcysteine showed a reduction in contrast-induced nephropathy. One of the commentators pointed out that the endpoint of a rise in creatinine might not have clinical significance and that it was necessary to show a reduction in persistent kidney injury.

The p-selectin inhibitor inclucumab reduced markers of myocardial injury during primary PCI for non-ST segment elevation MI.

Alice Jacobs presented a trial in which carefully selected and adequately trained operators in hospitals without on-site cardiac surgery undertook elective PCI in patients without complex lesions, graft disease or LV dysfunction. An ambulance was kept on standby to effect rapid transfer if required. Results at 3 and 12 months were no different to the hospitals with on-site cardiac surgery. In the trial only one patient required urgent transfer for surgery and survived.

Heart Failure

The STOP HF trial evaluated 1 100 patients at risk for heart failure. BNP was measured annually. In half the treating doctor and the patient were aware of the result, the other half not. Follow-up was for 4.2 years. BNP tended to increase over time. Those whose BNP was known had a lower incidence of heart failure, MACE and hospitalisations, coupled with more frequent prescription of RAAS inhibitors though BP was no different in the 2 groups.

A retrospective analysis of the DIG trial suggested a reduction in mortality and hospital readmission of around 30%.

The RELAX study showed that PDE-5 inhibition with sildenafil did not improve the effort tolerance of patients with heart failure with preserved left ventricular failure (so-called HeF-PEF) over 24 weeks.

The ASTRONAUT study followed 1 782 patients for 11.2 months after hospitalisation for heart failure to evaluate whether the addition of the renin inhibitor aliskiren to standard therapy would reduce rehospitalisation. The NT proBNP decreased and remained lower in both groups. Rehospitalisation occurred in very close to half of all subjects. Aliskiren was associated with an increased incidence of hypotension, hyperkalaemia and kidney injury, and an increased mortality in diabetics for the same reasons.

RED-HF examined the effect of darbopoeitin-alpha in patients with mild anaemia and heart failure. With the erythropoietin analog the haemoglobin increased from 11.2 to 13.3 g/dl. This was not accompanied by any effect upon the primary endpoint of death or hospitalisation for heart failure. A non-significant improvement in the quality of life score was recorded. Active treatment was associated with increases in cerebral ischaemic events and thrombo-embolism.

Transcatheter aortic valve replacement (TAVR)

In the Maseri-Florio lecture Alain Cribier detailed the development of TAVR from the first aortic balloon valvotomy which he performed in 1985. A barrier to the more rapid development of this procedure has been that it has been used first in the sickest patients, whereas new techniques are generally applied to the least sick patients first and then to progressively more ill patients as confidence develops in the procedure.

The 3-year PARTNER B results were presented. The study included 699 high risk patients with critical aortic stenosis submitted to either TAVR or surgical aortic valve replacement (SAVR). These patients had an average age of 84 years, 40% had prior CABG, 40% AF and 43% COPD. There was a 91% follow-up. Their 3-year mortality was 40%. No differences in outcome were detectable between the two groups. At 3 years there was no difference in the overall stroke rate. The Edwards Sapiens valve maintained its valve area, continued to function normally without any features of degeneration but with a slight increase in the incidence of severe aortic regurgitation. Mortality predictors were BMI, PVD, the mean valve gradient and the presence of liver disease. More than mild mitral regurgitation and the STS score impacted the SAVR mortality rate whereas AF and even mild residual aortic regurgitation affected the outcome of TAVR.

Coronary bypass surgery

Three trials compared off-pump to on-pump coronary bypass surgery. The smallest of them, the PRAGUE study with 206 patients, suggested a benefit of off-pump surgery in the highest risk patients but the overall results failed to find any benefit.

PULMONARY EMBOLISM

A study comparing heparin with heparin and tenecteplase in 1 006 stable patients with pulmonary embolism with evidence of RV dysfunction or myocardial injury used the combined primary endpoint of death and haemodynamic collapse. The “benefit” of the combination treatment lay in a reduction in haemodynamic collapse although mortality was unaffected and there was an accompanying increase in major bleeding.

REGISTRIES

A joint meeting between the ACC and the cardiac societies of Australia and New Zealand discussed the use of registries. Registries, of which there are more than 40 in the USA, need to be “sold” to practitioners on the basis of providing better patient care. The ultimate aim is to effect quality improvement. They have found it important to provide quarterly reports both to sites and clusters. However, the principle of registry participation alone has been associated with improvement in quality of care that may not result only from the feedback provided. It was agreed quality improvement could not be achieved without targeting ineffective sites. Both groups discussed the need for incentivising participation and the need for resources to ensure data flow from smaller and remote sites.