WACARDIOLOGY

Dr Edmund Lee MBBS (WA) FRACP
CARDIOLOGIST
St John of God Murdoch Medical Clinic
Suite 34/100 Murdoch Drive
Murdoch WA 6150
Tel: (08) 9366 1916
Fax: (08) 9311 4147

TOP 10 DEVELOPMENTS IN CARDIOLOGY 2015

1) **SPRINT Trial** – BP control is important and the ideal BP target is still a debate. This trial randomised over 9000 high risk hypertension aged over 50 to <120/80 vs 140/90. The trial was stopped early due to a significant reduction in end-points including mortality by 25%. However, there were significantly more hypotension, electrolyte disturbances, acute kidney injury and syncope in the intensive arm. The challenge will be how to apply this data in real-world practice.

2) **PCSK9 inhibitors** – These antibodies inhibit LDL receptor breakdown and can lower LDL by a further 30-70%. There are now a number of phase 3 RCTs looking at reduction of hard clinical endpoints. The drugs in phase 2 trials seem to be safe and well tolerated. So what level of LDL targets do we now aim for? What are the long-term side-effects of very low levels of LDL? The drug companies have jumped onto the bandwagon and there are now 12 PCSK9 drugs in development. A PCSK9 inhibitor has just been TGA approved.

3) **IMPROVE-IT** – On the same theme, there is now a large RCT showing a modest reduction of hard clinical endpoints with ezetrol. Ezetrol inhibits cholesterol absorption and is very well tolerated with no excess side-effects compared to placebo. Given the excellent tolerability and the availability of combination tablets, it is now being prescribed more often for secondary prevention to achieve LDL targets. It is also an option for primary prevention in patients intolerant of statins.

4) **DAPT and PEGASUS** – The duration of dual antiplatelet therapy after stenting or MI remains a contentious issue. The current guidelines recommend 12 months after Drug-Eluting Stents or after MI but these 2 trials demonstrate that there is a continued reduction in hard clinical endpoints with 3 years vs 12 months of DAPT. Bleeding remains a problem.

5) **STAR-AF 2** – This trial really contradicts the findings of STAR-AF 1! This trial found that ablation beyond the pulmonary veins did not improve outcomes. For EP specialists who don't like spending hours doing roof/mitral lines or ablating CFAE (complex fractionated atrial electrograms) it's a huge relief. For the 'expert' AF ablators, it merely implies that if you do extra ablations and do it poorly, patients have more events. Very aggressive and extensive ablations are also not completely benign. We are now seeing patients with pulmonary vein stenosis, stiff left atrial syndrome and significant LA dyssynchrony.

   On a separate note, there were a number of RCTs showing that weight loss and improvement in fitness delivered potent antiarrhythmic effects.

6) **NOAC reversal agent** - The dabigatran reversal agent idarucizumab received FDA approval in October. The factor Xa reversal agent andexanet alfa (concentrated factor 10) safely reversed the anticoagulant effect of apixaban and rivaroxaban in older volunteers. FDA approval for andexanet will likely come soon.

7) **SIMPLICITY 3 –** This negative trial on renal denervation have made Medtronic go back to the drawing board. It was a very promising and safe therapy for patients with resistant hypertension on multiple anti-hypertensive medications. Fortunately, the technology is not dead and there are still a number of companies doing trials on their devices and we eagerly await the results of those trials.

8) **LEADLESS PACEMAKERS –** These pacemakers are placed through the femoral vein and are completely retrievable. Currently, they only provide ventricular pacing but newer generations should allow a similar device to be implanted into the right atrium and connected wirelessly to allow DDD pacing. Future devices will also connect to subcutaneous ICDs wirelessly to make a leadless ICD. There are two devices that have earned CE mark and both will be FDA approved soon.

9) **NO BRIDGING REQUIRED -** This year, two studies, one observational and one a large randomized clinical trial (BRIDGE), demonstrated that bridging resulted in higher bleeding rates and no lowering in thrombotic events. In the observational trial, bleeding was 17 times higher with bridging. A big caveat: investigators from the BRIDGE trial excluded high-risk patients with mechanical valves and previous stroke. So we don't know the answer for these patients. For most, though, less is clearly more.

10) **ANRI –** A new class of medication for the treatment of chronic heart failure called an Angiotensin Receptor Neprilysin inhibitor was shown to reduce mortality by 20% compared to enalapril. A Neprilysin inhibitor prevents breakdown of vasoactive peptides (such as Natriuretic peptides and substance P) which is said to reduce neurohormal activation, myocardial fibrosis, and positive remodelling. This drug is now FDA approved and should be TGA approved soon.

Dr Edmund Lee

December 2015