Cardiology Update

Dr Fiona Stewart

Consultant Cardiologist, ADHB

For all of us, 2020 has been dominated by COVID although we in New Zealand have fortunately, so far, had little experience with it. Cardiovascular concerns emerged early in the discussion around COVID. The virus binds in the lungs via ACE2 receptors. There were initial concerns that patients taking ACE inhibitors or ARBs would be more susceptible to the virus. Subsequent studies have not confirmed any risk from these agents. COVID causes multiple cardiovascular complications particularly myocarditis, a propensity to thrombosis and in children a Kawasaki-like inflammatory condition. Hydroxychloroquine promoted early for treatment of COVID but not now seen to be effective raised concerns about long QT and the risk of VT especially when given with azithromycin.

Heart Failure

ACE inhibitors, Beta blockers and spironolactone have been the mainstay of medical therapy for heart failure with reduced ejection fraction. Device therapy with CRT pacing and implantable defibrillators have improved outcome in selected groups of patients. Two new classes of medication have led to further significant improvements in survival – neprilysin inhibitors (Entresto – a combination of valsartan with sacubitril) and the SGLT2 (sodium-glucose cotransporter-2) inhibitors (Dapagliflozin).

To date, no effective treatment has been found for patients with heart failure and preserved ejection fraction other than treating any underlying cause.

Infiltrative Cardiac Diseases

With improved imaging cardiac sarcoidosis and amyloidosis is easier to diagnose. Survival in patients with transthyretin cardiac amyloidosis (TTR-CA), the most common form of amyloidosis in the elderly, has improved significantly with TTR stabilisers. Trials are continuing to find effective and affordable medication.

Ischaemic Heart Disease

The ISCHEMIA trial which looked at optimal management for patients with stable coronary disease and moderate to severe inducible ischaemia on stress testing compared an invasive vs noninvasive approach to management after a LMS or proximal LAD severe stenosis was ruled out by CT Coronary Angiography. No overall benefit in reducing cardiovascular events was seen with an invasive approach.

Optimal anticoagulation and antiplatelet therapy for patients with atrial fibrillation following PCI has been studied in a number of trials. The choice of agent and duration of therapy depends on the individual risk of ischaemia and bleeding. NOACs are preferred over warfarin except for mechanical valves and moderate to severe MS. Triple therapy with aspirin, clopidogrel or ticagrelor and the NOAC is continued for 7 days to 3 months depending on patient risk (usually 1/12) and then clopidogrel or ticagrelor with the NOAC for a maximum of 1 year. A NOAC alone is effective long term.

Atrial Fibrillation

NOACs are the preferred anticoagulants except for patients with moderate to severe MS and mechanical valves. Rivaroxaban is now indicated for patients with creatinine clearance >15ml/min. Bridging anticoagulation is rarely indicated preoperatively but it is important that the NOACs are not stopped too early before surgery.

Left atrial appendage occlusion with a Watchman or similar device is as effective as an anticoagulant in prevention thromboembolism for patients who cannot tolerate an anticoagulant.

For younger patients or patients with left ventricular impairment, maintenance of sinus rhythm with PVI gives the best results.

In the elderly, attention to heart rate control is important. If rate control is inadequate and increased medication is not tolerated, insertion of a pacemaker and AV node ablation usually leads to improved quality of life.

Supraventricular arrhythmias
Catheter ablation is the preferred first line treatment for most supraventricular arrhythmias rather than antiarrhythmic therapy.

Ventricular Tachycardia and VPBs
For patients with impaired LV function ablation of the VT or ectopic focus will usually lead to improved cardiac function and improve exercise tolerance.

Valvular Heart Disease
TAVI is now the preferred approach for most patients whether low, intermediate or high risk for surgery.

Wearable Devices
There is an explosion of wearable devices to monitor cardiac function now available on the market. Some, such as the Alive Cor or Kardia device now built into the I-Watch V will produce high quality ECG rhythm strips. Oxygen saturation monitoring will be available with the next model. Blood pressure monitoring is also available in a watch format. Patients are increasingly engaged with these health technologies which, when used well can significantly improve our diagnostic potential. They however increase cardiac anxiety and cardiac hypervigilance in many patients.