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## **What does the future hold for Cardiology? Are we the disruptors or disruptee's?**

It's been a great privilege and honour to be the Chairman of the SA Heart® Congress 2018 scientific committee. It has been a road with some challenges, but I mostly have admiration for my fellow committee members and the SA Heart® Exco who all played a valuable role. The focus has been on what does the future hold in cardiology?

### **Will we be able to repair most valvular diseases percutaneously in the next decade?**

The aortic valve, once the sacred domain of the cardiac surgeon, has succumbed to innovation introduced by the interventional cardiologist. Transcatheter aortic valve replacement (TAVR) for the aortic valve, initially introduced as a percutaneous therapeutic option for high-risk inoperable patients, has now become the domain of the heart team, where cardiologist and cardiac surgeon work side by side, offering this as a routine procedure for intermediate (and possibly soon even in low-risk patients), in most large centres. The dream of 10 years ago has become the reality of today.

### **Will the mitral valve be next?**

The mitra-clip is already in clinical use, and may prove to be beneficial in some patients. However, the mitral valve is more complex, and we will in all likelihood require several variants and options going forward to tackle the various pathologies. The challenge to include an annuloplasty in a percutaneous approach to mitral valve repair (an integral component of surgical valve repair strategies), has not yet been overcome successfully. Valve-in-valve percutaneous mitral valve replacement is already a reality, but the race to develop a percutaneous valve that can be deployed in the mitral position in patients who have not undergone previous mitral valve surgery is still on.

The intervention vs. medical therapy vs. surgery debate for the management of stable coronary artery disease still continues. The Orbita data, which is a multicentre randomised trial of PCI versus placebo for angina relief that was performed at 5 sites in the UK, concluded that in stable angina with severe coronary stenosis PCI did not increase exercise time by more than the effect of the placebo procedure at 6 weeks. The great stable angina debate will highlight all the controversies of this study and others at SAHA 2018.

#### **Will medical therapy replace all forms of intervention in the future?**

The Glagov study showed plaque reduction as measured by IVUS in patients receiving PCSK9 inhibitors – is this the beginning of plaque reduction via medical therapy?

How would the LDL receptor disruptors like inclisiran play a role, especially with their need to be only administered 6-monthly? Certainly, better compliance, lower LDLs, less plaque burden and maybe ... plaque regression? Only the future will tell.

#### **How will big data disrupt the way we currently practise?**

Artificial intelligence is already replacing lawyers, especially for contract work, and how will the cardiologist be affected? ECG interpretation is already at a stage where, in most cases, the Artificial intelligence programme would correctly interpret the ECG and give a differential diagnosis. Hence, this lowers the chances of missing a critical diagnosis like STEMIs and shorter door to balloon times.

Robotics are already in daily use for electrophysiological studies (EP) and ablations, with virtual reality playing an important role – especially as demonstrated in paediatric ablations and EP studies. The next step would be MRI-guided interventional catheters that are robotically guided, so obviating the use of x-rays and increasing the accuracy and predictability of interventional cardiology.

**Is the eradication of cardiovascular disease a possibility in the future – especially in the era of vaccines, early detection, preventative medicine, better predictive models using big data analytics, robotics, artificial intelligence and virtual reality?**

Or should we rather be asking: **How will we use the new disruptive technologies to deliver a better healthcare system for everyone in a just and equitable manner?**