

Interview



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Q1 What do you find most interesting about complex coronary intervention and coronary physiology?

I went into cardiology to combine the science of medicine and the practical skills of surgery. I enjoy finding a problem and doing my best to fix it. Complex intervention presents continual challenges and stepwise, logical problem solving that keeps my job interesting. No two cases or 2 days in the catheterisation laboratory (cath lab) are the same. You never know what you will get and that keeps you on your toes! Coronary physiology adds more accuracy to what we do. It helps me to plan my procedures and make me feel surer of the result. I use physiology and intravascular imaging in the vast majority of my cases because I hate guesswork; I like to feel as certain as can be as I perform intervention.

Q2 In light of the global COVID-19 pandemic, what do you believe are the biggest challenges currently facing the clinical interventional cardiology community?

I think the greatest challenge we will have ahead of us is dealing with the collateral damage from COVID-19. The pandemic and lockdown have really had an impact on patient care. Many

patients were dissuaded from seeking medical attention when they needed it. We are now seeing the knock-on effects from that as we recover and pick up the pieces. I also worry about the effect on cardiovascular morbidity and mortality because access to primary and secondary prevention was limited for some. I am concerned for the impact it has had on clinical research and clinical training. These are unprecedented times. I hope that we can get back on track as soon as we possibly can.

Q3 What motivated you to become a clinical triallist and what was the goal you set out to achieve when you embarked on this path?

In my mind one of the best aspects of cardiology is its strong evidence base. I love that from the beginning of our training we are taught to think about the science behind what we do. For me the most natural way to combine cardiology and academia was to design and conduct clinical trials. At an early stage in my training I was involved in recruitment and collecting data for studies in the UK. My interventional fellowship in Milan, Italy, taught me the importance of international collaboration and how clinical trials have shaped all the major



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developments in cardiology. I knew then that I wanted to start designing trials to answer my own clinical questions and it was the next natural step to embark upon a clinical trial for my PhD.

You conducted and led the Objective Randomised Blinded Investigation with Optimal Medical Therapy of Angioplasty in Stable Angina (ORBITA) trial. Could you elucidate the key findings?

The results of ORBITA were as surprising to me as they were to the many interventional cardiologists worldwide! This was the first placebo-controlled trial of angioplasty. The primary analysis showed a smaller than expected effect of angioplasty on treadmill exercise time and symptoms compared to placebo. The subsequent analyses showed even more interesting data: we found that one in five more patients reported being free from angina in the percutaneous coronary intervention (PCI) arm in a non-prespecified analysis. We also found that, when we stratified patients based on their pre-randomisation invasive physiology, the lower the fractional flow reserve (FFR) and the instantaneous wave-free ratio (iFR) index, the greater the placebo-controlled efficacy of PCI on improving stress echocardiography ischaemia. Also, the higher the pre-randomisation stress echocardiography score, the greater the improvement of frequency of angina with placebo-controlled PCI.

In your expert opinion, what key attributes are required for a successful clinical trialist, and what would be your advice to young scientists considering this career?

You need to find questions that truly need answering and design trials that will be clinically relevant and interesting. Completing any study is hard work and extremely challenging so, at the end of it, you should know it's something people will want to read about. Ideally the results of your trial will change practice but often that's very difficult, so you need to feel that your work will, at the very least, provide new data that add to the totality of our knowledge and will help us to make incremental steps towards the final answer.

As an advocate for rigorous testing of clinical practice and the use of evidence-based medicine in all phases of medical care, do you believe these standards are currently being upheld?

Yes, I do! I think we try very hard to uphold standards in medical care and use the evidence-base to inform what we do. Some teams are better than others at doing this, but in general I think cardiologists do a pretty good job at keeping up to date.

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Overall, you have more than 70 publications and are actively involved in the development and recruitment for various multicentre clinical trials. What are you working on next?



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My next big trial is ORBITA-2 which is currently in the recruitment phase. This will build on the work of ORBITA. It is the next placebo-controlled trial of angioplasty and will test whether PCI improves symptoms in a wider range of patients than those included in the first trial. My main focus at the moment is continuing to understand the link between stenosis, ischaemia, and symptoms in patients with stable coronary artery disease. I have three PhD students working on really interesting studies that will help us to know much more.

As a result of COVID-19, multiple new options for disseminating scientific developments have arisen. By what means do you stay up to date with the latest cutting-edge advancements in cardiology?

I think the challenging last few months have taught us that it is possible to connect globally and to keep learning even without our traditional face-to-face conferences and meetings. The organisers of scientific congresses have worked so hard to find new platforms and new ways to present information digitally. Social media has been an invaluable resource; it means we can have real time interactions with our peers which

has certainly improved a stressful experience. Some of this new experience has been fantastic and has allowed us to juggle conference attendance with busy day jobs and our home lives; however, I really miss the old times. Nothing can really replace the ability to chat face-to-face and I am looking forward to the return of the conventional meeting! But I am thankful that we have all been able to support each other across the world; I think that seeing each other again will be all the more precious given what we've all been through.

Within the 14 years of your clinical cardiology career, you have presented at multiple international cardiology conferences worldwide; why do you consider presenting at events to be of importance?

The dissemination of science is absolutely vital to our ability to advance knowledge and change practice. I have presented in all sorts of formats all over the world. Sometimes my audience has been interested in the results and other times they have been less happy to listen. Whatever the situation, I enjoy the challenge of explaining my work to others and the collaborations and future research that creates.