



The Society for Cardiovascular Angiography and Interventions

SCA&I President's Page

Interventional Pediatric Cardiology: Building on Years of Progress

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This President's Page features a conversation I had with three leaders in the field of pediatric/congenital cardiology. It is a unique opportunity to "hear" a candid discussion among colleagues who work in different

countries, but who face many of the same challenges and share the same goals.

I am honored to introduce Dr. Donald Hagler, Professor of Pediatrics in the Divisions of Pediatric Cardiology and Cardiovascular Diseases at the Mayo Clinic; Dr. Lee Benson, Director, Cardiac Diagnostic and Interventional Unit at The Hospital for Sick Children in Toronto; and Dr. Shakeel Qureshi, Head of Service, Pediatric Cardiology at Evelina Children's Hospital in London.

We've Come a Long Way

Dr. Hijazi: Let's begin by talking about some of the great changes in our field over the last 10–15 years.

Dr. Benson: There have been enormous changes in the way we treat congenital heart patients. One of the great advances in the past 3 or 4 years has been in our relationships with the surgeons. We've always shared the same goals, but surgeons and interventional cardiologists have started working together to create new treatment algorithms. It's really a partnership in management.

Dr. Qureshi: If you look at pediatric cardiology 20 or 30 years ago, and the treatments available, we've progressed from noninvasive imaging to diagnostic catheterization and from relatively simple to complex interventions. Diagnostic catheterization is gradually receding, and we're doing more and more interventions in the cath lab.

Dr. Hagler: We have seen tremendous change from diagnostic to interventional procedures and in the number of devices that have been developed. We've also made great progress in educational efforts with different kinds of meetings, such as PICS, where interventionalists come together to discuss problems and new ways of doing things.

Dr. Hijazi: PICS and other meetings, such as those in Italy and Germany, have really brought interventional congenital cardiology to the forefront by showing pediatric cardiologists how to do these procedures.

Practice Abroad

Dr. Hijazi: What are some of the challenges that pediatric cardiologists face abroad?

Dr. Qureshi: Working abroad in different centers is an important part of the learning experience. You're faced with local problems with technology, devices, availability of devices, differences in patient culture, and the cost of devices, equipment, and procedures. Sometimes you have to improvise.

Dr. Benson: And problems vary greatly from one locale to the next. In some underdeveloped areas, the

challenges are diagnostic and not interventional. Even when physicians there can make the diagnosis, they don't necessarily have the training or equipment to perform the procedures.

Education and Training

Dr. Qureshi: Within my own center in the UK, we face a different challenge. We have more technology and devices available than many countries outside of Europe, but I worry about the training of future pediatric cardiologists. There is a considerable reduction in training for diagnostic cardiac catheterization procedures. One problem is the European working time directive, which stipulates that a trainee cannot work more than 48 hr a week. Combine that with the other European directive to shorten training in specialties and subspecialties and you have shorter training and working hours. Trainees in Europe are likely to be much less experienced and have problems getting up to speed in complex technology.

Dr. Benson: Education is a really important issue. Training programs have become very technical. When presented with a lesion, the first thing a Fellow says is what the echo showed. It's been a long time since a Fellow told me about the second heart sound. I think that's a problem because you can't bring a patient into the catheter laboratory for a sophisticated procedure unless you have a very good understanding of the clinical science behind it—not just the interventional and technical science.

Help for Families

Dr. Hijazi: Lee, you are in the largest center in the world for pediatric cardiology. What resources do you have for families?

Dr. Benson: There are a number of supporting organizations within the hospital for families facing complex diseases—not just cardiac ones. They help them get through, first, the shock of the diagnosis. Fortunately, we also have a very active fetal echocardiography program. More than 80% of our complex lesions are identified prenatally. We have extensive prenatal counseling with the geneticist, social worker, and pediatric cardiologist. Within the division of cardiology, we've all agreed upon how we will treat a particular kind of lesion and what we will offer the families overall. We try very hard to support them. We recognize that it's a very stressful time.

Dr. Qureshi: We have similar resources in the United Kingdom. We also have a group of nurse counselors who previously worked in pediatric cardiology wards or intensive care. So they can talk to the parents

and provide interim support once the diagnosis has been made. In addition, we have a hospital support group for parents of children treated for congenital heart disease. Nationally, we have the Children's Heart Federation, a parent organization that supports children with congenital heart defects. We also have the British Heart Foundation and various associations for syndromes, so there is plenty of support.

Dr. Benson: We also have a website and a family-organized support group. The social workers interface with that, so they can facilitate a request from one parent to speak to another who has had a child with congenital heart disease.

Dr. Hijazi: Don, what about Mayo?

Dr. Hagler: We certainly have support groups, nurses, and a lot of the people come to the clinic already educated from reading websites.

Guidelines for Physicians and Families

Dr. Hijazi: Do you think these websites are helpful to families?

Dr. Qureshi: One of the challenges we face is the confusion and conflict caused when advice or recommendations given on North American websites are different from those on websites in the UK, Europe, or the rest of the world, for example, with regard to exercise. It would help to come up with universally accepted recommendations.

Dr. Benson: The American Heart Association has come out with recommendations from a consensus panel, but I can tell you that reading those recommendations doesn't help much when it comes to fine-tuning them to a patient's specific situation.

Dr. Hagler: I have a young patient who just had a prosthetic valve put in and he wants to play basketball. I had to tell him he can't. "Well, what if he wears a helmet?" asked his parents. So, I agree that those particular guidelines on endocarditis and sports management are difficult if you just look at the guidelines and try to translate them.

Device Development

Dr. Hagler: Our greatest challenge is continuing to develop devices and technology. The devices that have come along in the past 5 or 10 years have been tremendous. Perhaps, it will continue that way, but I think we need to encourage more research and device

development and to adapt new technology for pediatrics. That will take a lot of effort.

Dr. Benson: In Canada, we have only two or three companies dedicated to pediatric innovation, so nothing is the right size. I can't tell you the number of companies that I've approached to create a pediatric percutaneous sheath and dilator system that's just for kids. Nobody makes it or is interested in making it. Everything is for adults.

Dr. Hijazi: These companies have to report to their stockholders, so their primary interest is financial. Unfortunately, children, in the U.S. and abroad, get lost in the shuffle.

Dr. Qureshi: And hurdles are placed in the way of many small companies committed to pediatric cardiology interventions in North America and Europe.

Approval for New Devices

Dr. Hijazi: Don, as SCAI's representative and a liaison with the FDA, where do you see this going?

Dr. Hagler: Without a doubt there's significant interest at the National Institutes of Health (NIH) and at the higher levels of administration at the FDA. The Commissioner for Health and Human Services has pediatricians on his staff. He is genuinely interested in trying to develop pediatric research and pediatric devices, but the rest of the FDA has its own engineers and methods that have become engrained over years.

We need to involve the device manufacturers to get funding. It will take all pediatric cardiology interventionalists working together to tell the FDA, NIH, and the manufacturers, what devices we need to develop. I think the FDA is interested, they just don't know how to do it. Somehow, we, cardiologists as a group, have to develop a mechanism for approaching the FDA to help with new technology and device development.

Dr. Benson: I think we should strengthen the Pediatric Committee of SCAI to find solutions or compromises to these kinds of challenges. We need to set standards and be the first ones out there with collaborative studies. Perhaps, we could enhance the Committee to serve as the spokesperson for our very complicated specialty.

Dr. Hijazi: I think that's a great idea. Send us your thoughts and get involved in this important work in pediatric interventional cardiology. Please write to me about this, or any other topic, at president@scai.org.