

Interview

Interventional cardiology: a passion resulting in excellent outcomes



Samin K Sharma speaks to Caroline Telfer, Assistant Commissioning Editor

Dr Samin K Sharma, MD, is the Professor of Medicine (Cardiology) at the Mount Sinai Medical Center (NY, USA), known for performing over 1600 complex coronary and valvular interventions a year (the highest in the USA) with extremely low complication rates (<0.2%). He has had the highest success rate of angioplasty (New York State Department of Health Report) among interventional cardiologists in New York State from 1994–2003 and 2007–2008 receiving the prestigious double star status for statistically lower 30-day risk adjusted mortality. Samin Sharma has received many awards including 'Best Teacher', 'Physician of the Year' and the 'Governor's Excellence Award'. In 2012, he was named as a top doctor in US News and World Report.



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■ **What attracted you to a career in interventional cardiology?**

When I was finishing my training in medicine, interventional cardiology was just a paragraph in our medical textbooks, stating that there was a new technique evolving for opening the blockages. I, therefore, decided that I wanted to become an expert in this field where we would be able to open the blockages percutaneously. That was at the beginning of 1982; at that time, I had not yet come to the USA. My interest in the field of interventional cardiology continued when I came to the USA. Therefore, my goal was to become an expert in interventional cardiology. During my cardiology fellowship, I was able to switch rota with other fellows. Since work conducted in the catheterization laboratory is very busy, you have to be available all of the time in order to rotate with other fellows. I used to swap my nuclear rotation with their catheterization laboratory rotation, which kept my interest going. In 1988, I was asked to become the director of the catheterization laboratory at Elmhurst, which is a noninterventional laboratory; therefore, I declined this opportunity. I had to work for free in the interim at Mount Sinai Hospital, towards my career of interventional cardiology, which was a struggle. I had to take a chance to become an interventionalist and so here I am. That is the long answer to a simple question, but it all goes back to interventional cardiology, because of the immediate gratification it gives you, this is what really attracted me to pursue this field further.

■ **You mentioned that you trained in India. Can you explain a little about your background and how you came to America?**

I did all my training in India at Sawai ManSingh Medical College. I was in medical college from 1972 to 1978, as it is a 6-year program. From 1978 to 1982, I did my postdoctoral training in internal medicine, which is similar to a postgraduate degree. From 1978 to 1982, I did the MD in internal medicine, and then in 1983 I came to the USA, with a clear plan to settle here.

■ **What would you consider to be your greatest achievement to date?**

Personally, being able to develop the skills to perform complex interventional procedures with the lowest complication, in a nutshell, is my greatest achievement particularly when compared against other colleagues. In 1996, the New York state released, for the first time, a percutaneous coronary intervention report for the year 1994. The New York state independently follows every physician and every hospital, and 1996 I was listed at the top, with zero mortality of the 572 interventions I had performed. The greatest achievement for me was that in 6 years after training, I had perfected the art of intervention with the lowest rates of complication.

■ **Can you describe your typical working day?**

I work 6 days a week, taking Saturdays off. I call this a recovery or battery-charging day as you need to recover for 1 day per



week. On Sundays, I work from 8 am to 5 pm. On weekdays, I usually start working from approximately 6.15 am. On Wednesdays and Thursdays, I finish work at approximately 10 pm, and on Mondays, Tuesdays and Fridays, I finish work at approximately 12 am (midnight), which are very busy and hectic days as I perform procedures on an average of 15 patients each on those days.

■ **You have the record for the highest number of interventional procedures with such a low complication rate. What do you think is your secret for this really impressive history?**

Well I think it's very simple; you learn from your own mistakes. Over the years, I have learned from my mistakes in managing complex cases; I did have higher complications between 1991 and 1992, when I started performing complex interventional procedures. However, I quickly mastered the art of percutaneous coronary intervention and, subsequently, the complications significantly decreased even in the complex high-risk cases. I am focused and dedicated when I am in the operating room. That is the whole point. When you should be working with a patient, you should be fully dedicating 100% of your energy and attention to that patient.

It is important to me that the patient is confident in me. I may be very busy working in various rooms, but before I start a procedure, I always talk to the patient, shake their hand, introduce myself, so that the patient gains his/her full confidence in me. I have always believed that the confidence of the patient in the physician adds to the overall success, even if sometimes things are going sour during the procedure, the patient's confidence really prevails to get through those complexities.

■ **You did your initial training in India and you still have a lot of connections. Can you explain a little about your work over there?**

I came here with one dream: to make Mount Sinai the number one interventional catheterization laboratory in the country, which I have achieved. My second dream was to duplicate the same

system at the institution that educated me to become an expert. That's why, in 2004, where I studied in Jaipur (India), I started a small hospital, which is a part of a general hospital. In 2009, we were granted the land from the government of Rajasthan, and built a heart hospital, which will be functional after 4 years of work, in July 2013. This hospital will be affiliated with Mount Sinai. It will follow the same protocols, and provide the best service possible to my native Jaipur, but more importantly, the institution that trained me. I will also be travelling there every month for approximately 4 days, and I will take colleagues from the USA with me to provide additional specified training.

■ **I've read about you bringing physicians from India to train with you at Mount Sinai, can you tell us about this?**

Yes, we are looking at an exchange program, where some people who need experience particularly in exotic medical diseases, can come to Mount Sinai for training. They will, therefore, be able to rotate to my hospital in Jaipur.

■ **In your opinion, what is the most important advancement that has been made in the field of interventional cardiology in the last 10 years?**

In my opinion, I would have to say the drug-eluting stents. Transcatheter aortic valve implantation, in my opinion, after drug-eluting stents, is the most important advancement in the last 10 years.

■ **You mentioned drug-eluting stents, you have publications on the XIENCE V USA study. What was the purpose of this study?**

This study was very interesting. Of course we knew that XIENCE V® (Abbott Vascular, CA, USA) has the lowest stent thrombosis. We have learned that even in the complex cases, XIENCE drug-eluting stents have low thrombosis, but most importantly, in my opinion, was that we can interrupt the dual antiplatelet therapy after a few months of drug-eluting stent deployment. What is the minimum duration of dual antiplatelet therapy after drug-eluting stents? Recent data have suggested



that even after 3 months, and definitely after 6 months, a brief interruption of antiplatelet-therapy will not give rise to any stent thrombosis. If I take one single message from the XIENCE V USA study, it would be that even in a complex case with the XIENCE V stent, you can safely interrupt antiplatelet therapy after 6 months and not worry about stent thrombosis.

■ **Was there anything that surprised you about the outcomes of the study?**

I wouldn't say that it was a surprise. I think that we knew about it, but we needed some prospective data. Once we started using XIENCE, we knew it was a superb stent with very low stent thrombosis. We are starting the trial comparing the newer bioabsorbable stent with XIENCE. XIENCE stent may be better compared with the bioabsorbable stent; however, the bioabsorbable stent will work in a different concept, and makes the stented artery normal after 1–2 years. My point of view is that XIENCE is an excellent stent and we knew about it. I am not surprised by the trial results, it just prospectively supplemented our prevailing opinion.

■ **You were the first physician to implant a patient with the XIENCE Xpedition in the USA**

We did the same thing with XIENCE V on 2 July 2008. For both of the XIENCE stents, I was the first implantor. To me, Xpedition is a great advancement over XIENCE and XIENCE prime, largely because of two things: first, the shaft and the body are very strong; second is that the less compliant balloon. The XIENCE prime had an overhanging of the balloon causing dissection, and 80–90% of times you had to postdilate. However, as of now with the XIENCE Xpedition, the pushability is better. Second, we can go up to 16 atm and I've probably performed approximately 500 procedures and have not seen any edge dissections and need for postdilatation is <50%.

■ **Is it a big improvement from the previous ones?**

Yes, it is a very big improvement. The same can be said for resolute integrity as well. The stent is so good and flexible, it will go

into various areas where XIENCE V did not go.

■ **Where do you see the future of drug-eluting stents?**

I think the future is still very bright. We knew second-generation stents were effective, but they are also very safe. Now, there is a shorter duration of antiplatelet therapy with a 6-month guideline in Europe; however, in the USA is still 1 year, but I am sure they will change it soon. Therefore, with the shorter antiplatelet duration, it is going to change the practice and yet be effective for the drug-eluting stents.

■ **Where do you see the field of interventional cardiology in 5 years time? What advances do you predict will be made and what do you think will be the most important of these advances?**

I think one of the big issues at present is the bioabsorbable stent. Therefore, I would say one of the advances has to be to identify the role where this will fit into our clinical practice; we will definitely understand that in the next few years. Although the use of the bioabsorbable stent will be more driven by public demand rather than science or trial results. Second, will be decreasing the sheath size of transcatheter aortic valve replacement, thus, decreasing the catheter size, which is a very big thing to reduce vascular and neurological complications. If we can cut down the sheath size to approximately 14 F, which is in the pipeline, instead of the current 18–24 F, the transcatheter aortic valve replacement will become safer. This will go a long way to improve safety of the procedure and remove that blemish. Transcatheter aortic valve replacement procedures have doubled the incidence of stroke compared with surgical valve replacement.

Third, some kind of therapy for the mitral valve regurgitation. The mitral clip, which is going to the US FDA for approval shortly, is still a very complex device. As there are a few in the pipeline, I'm sure there'll be simpler mitral valve repair percutaneous devices that will come into the market in the next 5 years and that will be very important.

Fourth, treatment of resistant hypertension with radiofrequency ablation will be the next frontier



■ Is there anything else that you would like to add?

My advice to anyone in this field is that it's a very difficult field, it is very demanding, but if you concentrate and work with systematic protocols, anybody can get the results that we have obtained by dedication and hard work. Everything has to be carried out systematically, in a protocol fashion.

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