Morton J. Kern, MD

A past president of SCAI discusses future technology uptake and trends in access and imaging.

What is the current status of bioabsorbable stents in the United States? How far away are we from approval, and how do you foresee this technology's uptake going?

I believe there are centers in the United States that are in the first stages of their experience with bioabsorbable stents, as compared to Europe, where the experience is relatively well advanced. The initial data that I'm aware of across the world, as reported in the journals, is favorable. There are still some late events, but it seems to be going very well.

How far away from approval are we in the United States? That's a little bit harder to answer. My guess is, I won't see bioabsorbable stents in common practice for 2 years or thereabouts. I do think, if the long-term outcomes are consistent across groups, that this is potentially a game changer. I think people will like bioabsorbable stents, provided the outcomes are similar to those we have seen so far.

Although the trend toward radial access becomes increasingly popular, what contraindications to radial should physicians keep in mind when selecting an access site?

I think radial access should be the default approach to cardiac catheterization in the modern era, so almost all patients should be suitable. The restrictions that we teach our fellows on the application of radial access include poor perfusion of the hand with an insufficient ulnar circulation—so, a "bad" or a type C Allen's test result would be a relative contraindication. For a new program's initial training period for radial artery catheterization, we suggest they limit the use to larger individuals, and defer small, elderly women who have smaller arteries.

We also limit radial access in patients on dialysis who may need the other radial artery for a dialysis shunt. We are somewhat limiting the application for bypass graft surgery—patients who may need a radial artery if we think that's a potential requirement.

Other than that, there is no restriction, and radial access should be considered as a method of first choice. If difficulty occurs, it is always easy to switch over to the femoral access site. We have experienced great benefit; particularly in STEMI patients with the radial approach, there is almost no bleeding at all after the procedure.

Do you ever recommend using a hybrid of intravascular ultrasound (IVUS) and optical coherence tomography (OCT)? When would you do both IVUS and fractional flow reserve (FFR)?

I don't have any hybrid (IVUS/OCT) catheters, so I do either one or the other. I don't think there's a reason to do both IVUS and OCT. There may be an advantage to doing near-infrared spectroscopy (Infraredx catheter system, Infraredx, Inc., Burlington, MA) and IVUS because you get additional information. I think the tissue characterization of OCT is better than IVUS and you can also get the vessel size with OCT.

When to do both IVUS and FFR is a pretty easy question. FFR is for physiological assessment: do you need to do the lesion? If yes, and you want to know how to treat the lesion after you've decided to treat it, then you use IVUS or OCT for vessel and stent sizing and plaque composition.

What is your number one tip for effectively using FFR?

The number one tip for the use of FFR is that when you have uncertainty about a lesion, you should always use it. If you don't know whether that lesion needs to be treated, do not guess—use FFR.

Now, from a technical point of view, I think it's worthwhile to use intravenous adenosine. It's easier, weight-based, independent of the operator, and, in most cases, provides a steady state. But before that, any time the operator is uncertain about whether the lesion is producing ischemia, I think FFR is mandatory.

One of the current challenges to TAVR uptake is training. What are your thoughts on current training programs, and what do you think will be the future of TAVR training?

I am in the process of undergoing TAVR training right now, even though our center doesn't do the procedure yet. I'm working my way through the online courses put out by the manufacturer of the currently approved valve, and then we're going to proceed to a center that is performing TAVR (like UCLA), and take our patients and scrub in with the experienced operators. Then, I think we'll be ready to go.

I don't think there's any particular difference between this training program and any other training program,

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except the steps are more involved, and a team of operators using CT scanning and transesophageal echo are required to join in. I think the training of the whole team is what is going to be the most difficult part.

Outside of training, what else will centers need to do to bring TAVR to their institution?

I think centers can form a valve clinic and get the members of the heart team for valve treatment all together and involved earlier than when the TAVR valve arrives. This is what we are in process of doing. We have begun a valve clinic to see all potential patients who might be candidates for TAVR and initiate their evaluation as if they were proceeding on to TAVR.

Is there a current decline in percutaneous coronary intervention (PCI) volume? Why, and what do you think can/will impact overall volume?

There has been a decline in PCI volumes over the last 5 years, and I believe it is due to the fact that we are doing a better job with drug-eluting stents and medical therapy for coronary artery disease. We also have the knowledge that outcomes with medical therapy are very good and that more people who were previously treated with a stent can now be treated medically and have the intervention postponed or avoided. I think FFR use also appropriately reduced the number of some stents and avoided unnecessary stents. PCI volumes will likely continue to decline over this decade and then stabilize at a certain level as an appropriate response to the presence of coronary artery disease and myocardial ischemia reaching their treatment limits.

I don't think that we are going to see PCI volume go up any time soon because appropriateness for treatment, good medical care, and good stents have resulted in the reduction of clinically symptomatic disease.

Do you recommend the use of glycoprotein IIb/IIIa inhibitors in STEMI patients?

Yes, I do, because some patients do not absorb their oral antiplatelet drugs fast enough or because the thrombus burden is extremely large and active. I like glycoprotein IIb/IIIa inhibitors in most patients with STEMIs (not every STEMI) and, especially in those who have massive thrombus burden, I prefer to have a little extra antiplatelet therapy on board.

Patients who do not receive glycoprotein blockers include those who have already been pretreated with substantial antiplatelet drugs, those who might have an extreme risk of bleeding, or those who were receiving a high dose of intravenous heparin. I may not give them glycoprotein inhibitors right away. This opinion, of course, varies among physicians.

What was the most important take-home point from the SCAI meeting this year?

The take-home message this year was, "Quality counts." Attention at the meeting was focused on the quality of PCI treatment, the quality of work in the cath lab, and the quality of interventional cardiologists. We even had a separate track called the "Quality Track," which emphasized aspects of care beyond just the placement of a stent or the management of a complication.

For next year's meeting (May 2014), we will continue emphasizing the "best of the best" interventional teaching, techniques, and assessment of complications and outcomes. We will refine our quality teaching track so that all interventionists can be quality champions in their hospitals and work to make the best of their work lives, hospital lives, and patient care—all based around best results and quality.

We are also going to go to an enhanced experience using social media in the program. Before the meeting (and at the meeting), we will teach everyone to use smartphone applications for polling the audience, getting questions to experts, sending notifications about stimulating on-going sessions, and doing lots of expert interaction all through the attendees' smartphones. I think we're going to have a unique and fantastic meeting.

Tell us a little about your current areas of research.

I'm continuing to work within the FAME studies and am in the process of joining the FAME III study with Dr. Bill Fearon, which will compare CABG to FFR-directed multivessel PCI. I'm working with one of my young colleagues on understanding the observed hemodynamic variance of intravenous adenosine infusions. I'm very interested in pressure-flow relations using coronary flow velocity and pressure to understand basal stenosis physiology and whether this approach will truly challenge the hyperemic stenosis physiology.

I am enjoying transitioning into my senior interventional years. I just released an SCAI interventional board review book, which is produced with the help of numerous colleagues in the society. I have found that being part of the SCAI meeting and society has really enhanced my professional and personal life, and I encourage others to join the SCAI, especially this year given the current status of interventional cardiology. ■

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