DRUG-ELUTING STENT SOLUTIONS

Impact of Drug-Eluting Stents on Patients

This monthly column in Cath Lab Digest *reviews important points of distinction in drug-eluting stents, from characteristics to techniques, to provide valuable and relevant information about this technology.*

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Dr. Hermiller received his undergraduate degree from Miami University in Oxford, Ohio, and earned his MD from Ohio State University School of Medicine in Columbus, Ohio. He finished his internship and residency in internal medicine at the National Naval Medical Center in Bethesda, Maryland. He completed his cardiology fellowship at Duke University Medical Center in Durham, North Carolina.

Currently, Dr. Hermiller is the Director of the Interventional Fellowship Program at St. Vincent Hospital. He is heavily involved in cardiac research for St. Vincent Hospital and The Heart Center of Indiana. He is a member of the American College of Cardiology, the American Medical Association, American College of Physicians and the Society for Angiography Intervention.

Q Drug-eluting stents (DES) have been available in the United States for several years now. How is your practice different today than it was prior to the introduction of this technology?

A The biggest change has been an expansion in the types of patients we can treat with transcatheter therapies. Since the introduction of DES, many patients who were previously sent to surgery are now treated in the cath lab. We can now approach patients who for one reason or another were not candidates for bypass surgery. Furthermore, the number of patients with restenotic lesions who require repeat surgery has dramatically fallen. Before DES, this group used to make up 10 to 15 percent of my patients, and now this number is in the low single digits. Patients clearly benefit from this reduction in restenosis with DES (Figure 1).

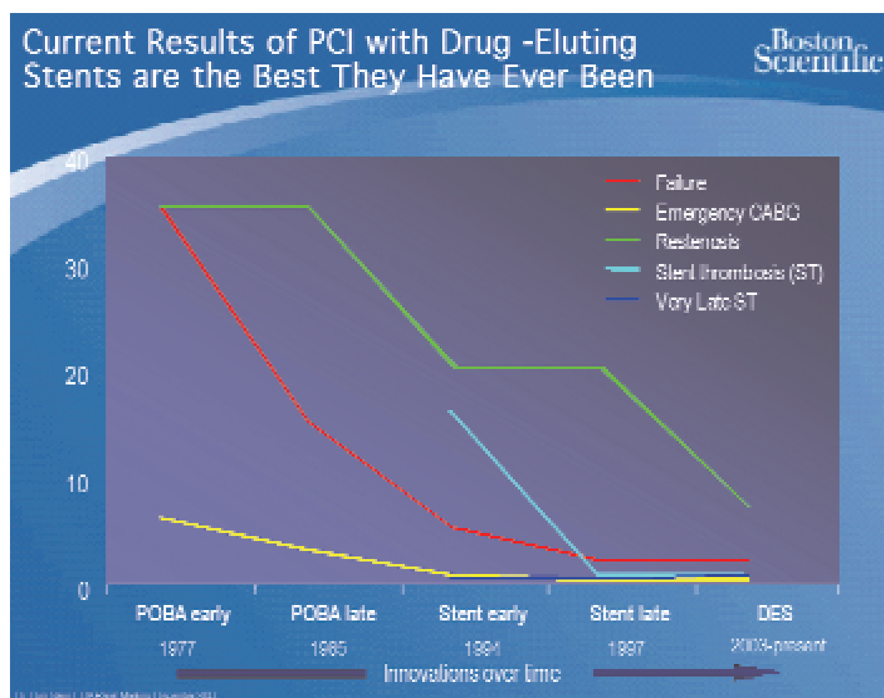

Figure 1. Evolution of PCI (1977 – present)

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Q What are the most common questions patients ask you about DES? How do you respond?

A I find it somewhat ironic that the stent world has flipped upside-down in the past few years. Patients once demanded DES, and now they are scared of the technology, primarily due to recent news coverage regarding stent thrombosis. Patients ask three main questions about DES:

- *What is my chance of getting a blood clot inside the stent?*

I inform patients that the risk of developing late-stent thrombosis is very small, occurring in roughly four out of every 1,000 patients between one and four years after implantation. This is extremely low, particularly compared to the patient's risk of a cardiac event posed just by having coronary disease. I also tell them that although the incidence of late-stent thrombosis with bare-metal stents (BMS) is probably lower than with DES, BMS patients are not immune from the complication.

- *Are DES less safe than BMS?*

I explain to patients that despite a slight risk of late-stent thrombosis, DES reduce the risk of restenosis by at least 50 percent compared to BMS. Approximately one-third of patients with BMS develop restenosis, and about 20 percent of these patients require a repeat intervention to open the artery once again. I say that restenosis is not a benign event, and that patients who develop restenosis have an approximately 30-percent chance of developing an acute coronary syndrome and a 10-percent chance of a myocardial infarction.

- *Are DES really the best treatment for me, compared to BMS?*

My response to this question is that choosing the best treatment is really a balancing act between the small risk of late-stent thrombosis with DES and the risk of restenosis – and complications associated with restenosis and its treatment – with BMS.

Q Is there anything else you look at when evaluating a patient for a DES?

A I make sure that a patient can take aspirin and Plavix® medication. With the late-stent thrombosis issue, I've been much more aggressive in trying to determine if a patient is going to be compliant with his or her medicines. If a patient is not going to take Plavix medication and will probably have a hard time staying on aspirin, I avoid implanting a DES.

Q Can you please describe personal experiences that illustrate the benefits of DES?

A One patient who comes to mind is a man in his mid-50s who underwent bypass surgery six or seven years before he came back with recurrent angina. All of his grafts had failed, and he had a tight distal lesion in a native artery that was very complex and certainly put him at an exceptionally high risk for restenosis. He had basically no other options. He wasn't a candidate for repeat surgery, so not only was he disabled from his angina but he would probably die in a very short time. With DES, we were able to treat him, and more than two years later he is doing well. Repeat angiography shows the vessels are widely patent. We just would not have seen such a good outcome with BMS.

The safety and effectiveness of the TAXUS® Express™ Stent have not been established in patients for longer than 12 months.

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