

Restenosis Management

Endovascular therapies for treating coronary and peripheral artery disease continue to produce increasingly favorable results in challenging lesion subsets, and the number of therapeutic options being successfully employed in virtually every vascular bed is increasing. However, restenosis remains a significant limiting factor in the long-term success of such procedures, with no therapy impervious to the occurrence of at least some degree of restenosis. Several emerging therapeutic options show promise in reducing the rate of restenosis in treated vessels, and some can be used to treat restenosis when it does occur. In this issue of *Endovascular Today*, Robert Dieter, MD, and I provide a brief overview of many issues related to restenosis in the peripheral vasculature, including the impact of vascular biology, important risk factors for restenosis, and the prevalence of restenosis in the various vascular beds.

Drug-eluting stents (DESs) have made a significant impact on reducing restenosis rates in the coronary anatomy. Eberhard Grube, MD, and Lutz Buellesfeld, MD, provide a review of the coatings being used in conjunction with today's DES platforms, detailing the manner in which each coating interacts with the arterial system. Similar results have yet to be observed with DESs in the periphery, with fewer devices currently being evaluated in peripheral clinical trials and no devices approved for this indication. The natural anatomic challenges encountered in the peripheral vessels, such as the radial forces exerted in segments of the lower-extremities, can in some instances impact the structural integrity of the stent and may impact the long-term procedural success and rates of restenosis found after stenting.

Recent data suggesting improved results with self-expanding nitinol stents in the SFA have made femoropopliteal stenting a more attractive option for many interventionists. A number of new stent platforms have been developed specifically for use in lower-extremity locations and are now being evaluated. There are also emerging data regarding the use of covered stents in the SFA. In this issue, Gary Ansel, MD, Charles Botti, MD, and Mitchell Silver, MD, review for us their favorable experience using the Viabahn covered stent graft in the SFA to treat in-stent restenosis.

Several novel catheter-based therapies have recently emerged and are rapidly gaining acceptance in the interventional community. One example is cryoplasty, a simple and effective alternative to traditional angioplasty, with favorable

results thus far and indications that postprocedural restenosis rates are reduced. James Joye, MD, provides us with an overview of this technology, procedural results, and commentary on cryoplasty's effectiveness in treating in-stent restenosis.

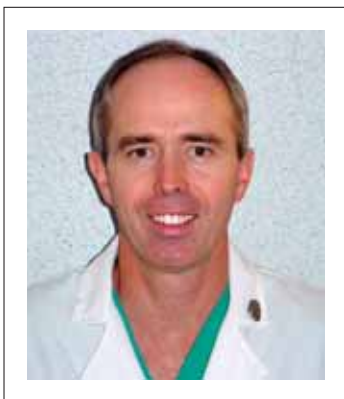
Two new options that have received much attention in the past year are plaque excision and laser atherectomy.

Although previous trials evaluating various methods of mechanical atherectomy have yielded less than optimal results, a growing number of physicians are making these therapies first-line options for atherosclerotic disease, citing better plaque debulking, improved patency rates, and effectiveness in treating in-stent restenosis. Barry Weinstock, MD, presents a comprehensive look at plaque excision and its role in restenosis management, and Giancarlo Biamino, MD, provides a review of laser therapy in this indication.

Brachytherapy has long held great promise for the prevention of restenosis in the coronary and peripheral vasculature. A number of clinical trials from the US and Austria have demonstrated the effectiveness of brachytherapy; however, negative results from the recently completed PARIS trial have stymied any further advancements in this field. Ron Waksman, MD, one of the real pioneers in the development of brachytherapy, will update us on the status of this once promising modality.

Many of these new "anti-restenosis" therapies are expensive, and a comprehensive cost analysis of each peripheral therapeutic option is yet to be performed. Until sufficient long-term restenosis data are available, such an analysis will be difficult. However, Virginia Oliva, MD, and Ross Milner, MD, have provided for us some points to consider in evaluating the cost-effectiveness of endovascular techniques versus surgical approaches based on experience at their facility.

We all look forward to the day when restenosis after peripheral interventions will be a non-issue. Until then, we at *Endovascular Today* will continue to update you on the latest advances in the development of these promising antirestenosis therapies. ■



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