

## ASK THE EXPERTS

# A focus on stenting for lower extremity peripheral arterial disease



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with holes in the heart (patent foramen ovale). He also specializes in blockages in the arteries to the kidneys (renal artery stenosis), which can lead to high blood pressure or kidney failure. In fact, Dr Dieter has published on new and potentially safer methods to treat blockages in the renal arteries. Dr Dieter performs minimally invasive abdominal aortic aneurysm repair (endograft) and has extensive training in the management of patients with claudication, as well as taking care of patients with critical limb ischemia and nonhealing ulcers (leg sores) – particularly in patients with diabetes.



**Aravinda Nanjundappa<sup>2</sup>** joined the faculty of the Brody School of Medicine at East Carolina University, Greenville, North Carolina, as an Assistant Professor and Director of Vascular Medicine and Peripheral Interventions in the Division of Cardiology. He has completed a vascular medicine and interventional peripheral vascular fellowship at Georgetown University and Washington Hospital Center (DC, USA), as well as completing residency training in internal medicine and a fellowship in cardiology at Seton Hall University (NJ, USA). He also completed a fellowship in interventional cardiology at the University of Florida

Health Sciences Center in Jacksonville (FL, USA). Specialties include vascular medicine and vascular interventions. His expertise includes the management of several conditions: claudication; critical limb ischemia; nonhealing ulcers; and renal artery stenosis. His speciality also includes the treatment of stroke patients, particularly patients with carotid artery disease requiring angioplasty/stenting.

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**Q Which patients benefit most from treatment with stents?**

In general, patients with longer and more complex lesions will benefit from stenting over angioplasty. In those patients in which angioplasty is attempted first, if there is a flow-limiting dissection, then these patients should receive a stent as well.

Stenting has better patency than balloon angioplasty, hence the subset of peripheral artery disease (PAD) patients that may benefit are:

- Patients with chronic total occlusions;
- Patients with critical limb ischemia or limb salvage.

**Q Are there any factors that occlude patients from this treatment?**

A number of factors go into deciding whether a patient should receive a stent. Those who are allergic to stents, have active infections with bacteremia and those who cannot or are not compliant with dual antiplatelet therapy probably should not receive a stent. Furthermore, caution needs to be taken when stents are used at flexion points around joints as there is a risk for stent fracture.

**Q In your opinion, how important was the introduction of drug-eluting stents to the field?**

Drug-eluting stents (DES) have the ability to address the Achilles' heel of stenting in the lower extremities. This has been seen with the use of DES in the coronaries. Despite significant advances in the dosing and elution kinetics, as well as polymers, DES for the superficial femoral artery have not overwhelmingly reduced the rates of restenosis.

The data have been promising so far for Zilver® PTX (Cook Medical, IN, USA) however, short segment lesions were treated.

**Q What evidence is there for some DES being more effective than others?**

It is still unclear at this point. Off-label use of DES from coronary arteries in below the knee interventions is helpful and several studies have shown improved limb salvage, lower amputation rates and even mortality benefit.

**Q Biodegradable stents have recently caused a lot of discussion, what are your views on this?**

The use of biodegradable stents, if they have similar efficacy and safety outcome data, have the ability to really change how we treat our patients. Ideally, if the stent is fully absorbed, then the acute problems of dissections and vessel recoil are addressed and long term, there are no issues with material left behind.

The shortcomings of bio-absorbable stents are that strut thickness makes deliverability difficult, the profile is larger and the data are limited.

**Q How important is a multidisciplinary approach for the treatment of atherosclerosis & stenosis?**

A multidisciplinary approach to patients with vascular disease is always important. Each discipline brings its own knowledge base and skill set to patient care and lesion treatment. This is particularly important today with a blurring and merging of vascular care.

**Q What are the current challenges facing treatment with stents? How might we start to solve these?**

The primary challenge we face today is restenosis of the stents. We will need better stents, drugs and biocompatible platforms to address this issue. Also the DES in PAD, with the right dosing of the drug and elution, may be a game changer.

**Q Are there any exciting developments in this field currently in clinical trials?**

Things to look out for in the pipeline include covered stents, partially covered stents, DES and bioabsorbable platforms.

**Q How do you see the field changing in the next 5–10 years?**

As mentioned earlier, on the horizon are bioabsorbable stents, better drugs to inhibit restenosis and more flexible stents and delivery systems. Furthermore, better biocompatibility is important to reduce the need for long-term antiplatelet therapy and reduce the risk of thrombosis.

The use of drug-eluting balloons will have a huge impact in PAD to reduce restenosis, and development of DES in PAD also could be field-changing.

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**Financial & competing interests disclosure**

*The authors have no relevant affiliations or financial involvement with any organization or entity with a*

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*No writing assistance was utilized in the production of this manuscript.*