

## **Summary & Conclusion**

Peripheral arterial disease is a nearly pandemic condition that has the potential to cause loss of limb, or even loss of life. Peripheral artery disease manifests as insufficient tissue perfusion caused by existing atherosclerosis that may be acutely compounded by either emboli or thrombi.

Current data unambiguously document that peripheral artery disease is under-recognized by physicians, allied health-care professionals and by the public. Moreover, it is suboptimally treated compared with other clinical manifestations of atherosclerosis.

Peripheral artery disease patients may affect upper and/or lower extremity and it may be asymptomatic, present with intermittent claudication, chronic critical limb ischemia or acute limb ischemia.

Vascular imaging has evolved to the point where the diagnosis of most vascular disease can be made noninvasively.

Revascularization by percutaneous catheter techniques or surgery is required when intermittent claudication progresses to rest pain, non-healing ulcers, or acute arterial occlusion. It may also be needed for patients with lifestyle-limiting claudication and significant symptoms. Today's vascular surgeon is in a unique position to combine his or her classical surgical training with their catheter-based interventions.

Considering all aspects of revascularisation, it seems realistic to foresee an era where endovascular interventions will be the first choice, followed by hybrid procedures. In complicated multi-segmental disease, however, bypass surgery may remain the first choice.

The proportion of endovascular treatments is steadily increasing, more frequently based on observational studies than on randomised controlled trials. The role of guidelines is therefore important to guide the profession in the assessment of most relevant treatment.

Certainly, the potential advantages of percutaneous therapy as compared to surgical reconstruction are significant: No General anesthesia or lengthy incisions, shorter hospitalization, lower morbidity and mortality, earlier intervention in the course of the disease, and less complicated reapplication in the event of disease recurrence.

As more endovascular techniques are performed, the number of interventionists rises and the array of endovascular techniques continues to expand, we will increasingly encounter complications from these procedures. Some of the complications are simply a function of access, such as arteriovenous fistula, bleeding, and pseudoaneurysm. Others are specific to the type of procedure being performed on the target vessel.

Currently, there are no new recommendations for drug treatment in chronic critical limb ischemia, with the exception that therapeutic angiogenesis renders some hope to improve ulcer healing and reduce amputation rates.

Larger studies on various vascular growth factors such as non-viral 1 fibroblast growth factor and hepatocyte growth factor, gene-therapy as well as stem-cell therapy are underway. Many questions remain unresolved, including the optimal delivery route, dosing, the long-term outcome and relative safety.

More specific peripheral artery disease research is needed for risk management and to apply the best possible evaluation of evidence for treatment strategies. Better strategies for funding are required based on, for example, public/private initiatives.