The optimized techniques to use the Intravascular imaging technology for peripheral endovascular intervention in patients with peripheral arterial disease

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Peripheral endovascular treatment (EVT) is a minimally invasive approach for lower extremity revascularization to decrease risk of open surgery in multiple co-morbidities of patients with peripheral arterial disease (PAD).

Intravascular imaging technology, including optical coherence tomography (OCT) and intravascular ultrasound (IVUS) which has provided intraluminal imaging should encourage use as an adjunctive device for:

(1) guidewire/catheter passage by IVUS-guide intraluminal approach

(2) vessel preparation [OCT: penetrate calcification, limited in fibrous lesion]

(3) definitive therapy of arterial occlusive lesion. [DCB, stent]

The aim of study is to demonstrate techniques with case experience of IVUS and OCT in patients with PAD who underwent revascularization.

The identification of lesion characteristics during vessel preparation, including plaque morphology, calcium burden, and vessel dissection is the most important to determine definitive therapy device for EVT. Optimized vessel sizing by external elastic membrane measurement guide proper luminal gain by balloon angioplasty, DCB.1,3

For stenting, evaluation of scaffold apposition & expansion under OCT and IVUS can decrease the risk of in-stent restenosis (ISR). Minimum stent areas that should be achieved during stenting are promising the best stent patency.

The neointimal hyperplasia and neoatherosclerosis determine the proper special balloon or stent treatment for ISR.

The appropriate use of intravascular imaging in clinical practice of EVT should be summarized & encouraged for limb salvage strategy.2