Update on Advantages and Limitations of Biodegradable (Biotronik) Metal Stents: Are They Better Than PTA Alone? 12-Month Results

NOTES

Marc Bosiers, MD, Dendermonde, Belgium; Koen Deloose, MD, Dendermonde, Belgium; Jürgen Verbist, MD, Bonheiden, Belgium; Patrick Peeters, MD, Bonheiden, Belgium

Background
Biodegradable stents are discussed as a means to combine a mechanical prevention of vessel recoil with various advantages on the long-term perspective when compared to permanent implants, including the possibility for late outward vessel remodelling, and improved reintervention options. In the current communication, clinical results of a first application of the recently developed balloon expandable absorbable metal stent (AMS) on magnesium alloy basis, for treatment of infrapopliteal lesions in patients with critical limb ischemia (CLI) is presented.

Methods
Twenty patients with symptomatic CLI yielding rest pain or tissue loss, caused by peripheral arterial disease in below-the-knee region were treated. The stenosed area was maximally stented by two AMS implants of 15 mm in length.

Results
Angiographic procedural success was achieved in all 20 patients and postprocedural IVUS control confirmed a homogenous and complete stent inflation in all patients. According to the Kaplan Meier method, 12-month survival primary patency, secondary patency and limb salvage rates were calculated to be 85.0%, 73.3%, 78.9%, and 94.7%, respectively. Analysis of blood sample parameters and histological analysis of an explanted specimen did not reveal any toxic behavior of the implanted alloy and former stent material turned out to be almost completely disappeared.

Conclusions
After 12 months, the resulting values for primary clinical patency and limb salvage indicate a promising performance in the treatment of below-the-knee lesions in CLI patients using AMS.