



PERIPHERAL VASCULAR INTERVENTION

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The Use Of Bioresorbable Scaffold Stent for Treatment of Peripheral Vascular Disease

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Increased Functional Exercise Capacity Following Balloon Pulmonary Angioplasty in Chronic Thromboembolic Pulmonary Hypertension: Single-center Experience



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INTRODUCTION Balloon pulmonary angioplasty (BPA) is an alternative therapy for those patients with chronic thromboembolic pulmonary hypertension (CTEPH) who are not surgical candidates for pulmonary thromboendarterectomy (PTE). Currently, most of the BPA reports are from outside the United States. We sought to evaluate the effects of BPA on functional exercise capacity in CTEPH patients at our center.

METHODS We performed a retrospective review of all CTEPH patients who underwent BPA at Temple University Hospital in Philadelphia, PA, from June 2016 to July 2017. Patients' functional exercise capacity was assessed using serial six-minute walk tests before and at 1, 3, and 6 months after BPA. Invasive hemodynamics immediately before and after BPA were also evaluated.

RESULTS A total of 11 patients underwent BPA in 21 sessions. The mean age was 58 ± 20.1 years, 82% were males, 36% were Caucasians and 46% were African-Americans, with a mean ejection fraction of 57.7% ± 20.1. The hemodynamic data pre-BPA and immediately post-BPA were not significantly different. At 1, 3, and 6 months following BPA, there was marked improvement in functional exercise capacity (See Figure 1). There were no procedure-related deaths and one patient required brief intubation for less than 12 hours.

CONCLUSION Our study showed that BPA improves functional exercise capacity in those CTEPH patients who are ineligible for surgical thromboendarterectomy.

INTRODUCTION Drug-eluting stents have been used for treatment of peripheral vascular disease of patients with symptoms refractory to optimal medical therapy. Novel stents using bioresorbable vascular scaffolds (BVS) can overcome the constrictive remodeling and natural endothelial elastic recoil. We aimed to analyze clinical and procedural outcomes of BVS for treatment of symptomatic PAD.

METHODS We searched PubMed and Cochrane for all the clinical data that used BVS for symptomatic PAD. Primary outcomes of interest were amputation and clinically driven target lesion revascularization (TLR). Secondary outcomes included death, bypass surgery, definite or probable stent thrombosis (ST) and pseudoaneurysm. We calculated the number of events for each outcome and reported the percentage as well.

RESULTS Out of 25 articles, three clinical case-control studies were included. The pooled data provided 79 patients treated with BVS. Mean follow-up was 12 months. Lesions were located mainly in the femoro-popliteal area followed by iliac artery. There was no amputation in any of the patients. There was 8% clinically driven TLR. There was 1 (2%) bypass surgery due to an occlusion on a previous bypass that led to stent thrombosis as well. There were 8 TLRs (5%), 4 ST (5%), and 1 pseudoaneurysm (2%). There were no reported deaths.

CONCLUSION This is the first analysis of all available clinical data to evaluate the use of BVS for PAD. BVS is safe and feasible for treating PAD. Lesion size and length might lead to different outcomes. In-deep analysis of different anatomical lesions should be pursued.

Outcomes n (%)	Lammer.2016 35	Peeters.2005 20	Varcoe.2015 14	Total 79
Death	0	0	0	0
Amputation	0	0	0	0
Bypass Surgery	0	0	1 (14)	1 (2)
TLR	4 (13)	1 (5)	1 (14)	8 (5)
Scaffold Thrombosis	1 (3)	1 (5)	2 (14)	4(5)
False Aneurysm	-	1 (5)	0	1 (2)