

**Background:** Treatment of in-stent restenosis of the femoropopliteal artery is challenging with a high rate of restenosis. Excimer laser atherectomy (ELA) has a theoretical advantage of ablating restenotic tissue and reducing or delaying the need for repeat revascularization. We present a retrospective analysis from our center on the outcomes of ELA in the treatment of in-stent restenosis of the femoropopliteal arteries.

**Methods:** Demographic, clinical, angiographic and procedural data was collected on all patients that underwent ELA for in-stent restenosis from January 2005 until June 2010. Major adverse events and one-year target lesion revascularization (TLR) and target vessel revascularization (TVR) were obtained by reviewing of medical records. Descriptive analysis was performed on all variables. Kaplan-Meier survival curves for TLR were plotted.

**Results:** 40 consecutive patients (mean age  $67.7 \pm 9.0$  years, 57.5% males) were included and followed for 1 year. The following variables were noted: mean ankle brachial index (ABI) of treated leg  $0.6 \pm 0.2$ ; diabetes 47.5%; history of smoking 82.5%; number of vessel runoffs of treated limb  $1.7 \pm 1.0$ ; hypertension 85.0%; lesion length  $210.4 \pm 104.0$  mm; lesion severity  $93.9 \pm 8.9\%$ ; vessel diameter  $5.6 \pm 0.7$  mm. 95% of patients received bivalirudin during the procedure and all were on aspirin and clopidogrel. Adjunctive balloon angioplasty was performed in 100% at a mean pressure of  $12.4 \pm 2.9$  atm. Acute procedural success ( $< 30\%$  angiographic residual narrowing) occurred in 92.5% of patients. Embolic filter protection (EFP) was used in 57.5% of patients. Bailout stenting was 50.0%. Macrodebris was noted in 65.2% of filters. The following adverse events were reported: distal embolization (DE) requiring treatment 2.5% (patient with no EFP); planned minor amputation 2.5%, planned major amputation 2.5%, total death 7.5% (all cardiac related). One perforation occurred treated successfully with stenting. At one year, TLR and TVR occurred in 48.7% and 48.7% respectively.

**Conclusion:** ELA has an overall favorable acute result in treating in-stent restenosis of the femoropopliteal artery. At one year TLR and TVR remain clinically high. DE also occurs significantly with ELA and EFP appears to be effective in capturing the debris.

## CRT-92

### Long-term Patency Rate After Nitinol Self-expandable Stent Implantation In Long Totally Occluded Femoropopliteal (tasc c&D) Lesions. (retrospective Study)

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**Purpose:** To evaluate the long term patency of nitinol self-expandable stents implanted in TASC C&D femoropopliteal lesions, and determine predictors of reocclusion or restenosis.

**Methods:** All patients treated by nitinol self-expandable stents for totally occluded long femoropopliteal lesions between January 2002 and December 2010 were reviewed. Patient demographics, clinical features, anatomic, and procedure factors were retrospectively analyzed. Outcomes evaluated included long-term primary patency rate at three years and predictors of reocclusion or restenosis.

**Results:** The study group included 240 TASC C&D limbs in 213 patients (mean age  $70.91 \pm 9.37$  years, male gender: 66.2%). One hundred-fifty four (72.3%) were suffering from claudication, while 59 limbs (27.6%) underwent treatment for critical limb ischemia, including 31 limbs (14.5%) with tissue loss. All the lesions were total occlusion of the femoral artery  $\pm$  the popliteal artery, with mean length of  $17.94 \pm 11.38$  cm, and 31.2% of the target lesions were heavily calcified. A total of 509 nitinol self-expandable stents were implanted (average, 2.1 stents/limb), with 95.8% technical success. There was one procedure related mortality or amputation. Follow-up was available for 240 limbs at a mean of  $36 \pm 22.6$  months. No patient required a major amputation during this follow-up period. Thirty-nine limbs (16.2%) experienced reocclusion and twenty-one limbs (8.7%) experienced restenosis, all these limbs underwent reintervention during the follow-up time. Primary patency rates at 1, 2 and 3 years were 99.2%, 87.4%, and 74.4% respectively. Independent predictors for reocclusion were male gender, severely calcified and TASC D lesions, while diabetes, smoking and TASC D lesions were the predictors for restenosis.

**Conclusions:** Nitinol self-expandable stent implantation can be safely performed in long, totally occluded and heavily calcified femoropopliteal (TASC C&D) lesions, with highly comparable long-term primary patency rate to venous bypass surgery. TASC D lesion is the most important predictor for reocclusion or restenosis.

## CRT-93

### Prevalence Of Internal Pudendal Artery Disease In Diabetic Patients With Erectile Dysfunction And Angiographically Documented Multi-vessel Coronary Artery Disease

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**Background:** ED shares common risk factors of CAD, and is increasingly recognized as a well established risk factor for future cardiovascular events. We set out to explore the prevalence of significant atherosclerotic disease of the internal pudendal arteries (IPA) in diabetic men with erectile dysfunction (ED) and angiographically documented multi-vessel coronary artery disease (CAD).

**Methods:** We enrolled 30 consecutive diabetic patients with ED undergoing elective coronary catheterization. Erectile function was evaluated using the abbreviated 5-item questionnaire known as the Sexual Health Inventory for Men. Distal aortography was first performed, followed by selective internal iliac arteriography. Significant IPA disease was defined as 50% or more luminal obstruction seen in the projection that best delineates the takeoff of the artery.

**Results:** The mean age of the whole series was  $59.6 \pm 8.4$  years. The mean duration of diabetes mellitus was  $8.1 \pm 7.1$  years, and the mean duration of ED was  $4.3 \pm 3.2$  years. Significant IPA disease (stenosis/occlusion) was found in 11 (36.7%) patients; unilateral in 6 (20%) patients, and bilateral in 5 (16.7%) ones. Significant internal iliac artery disease (stenosis/occlusion) was found in 6 (20%) patients; unilateral in 4 (13.3%) patients, and bilateral in 2 (6.7%) ones. Significant IPA disease correlated positively with age and negatively with estimated creatinine clearance ( $p < 0.05$  for both).

**Conclusions:** In diabetic male patients with ED who have angiographically documented multi vessel CAD, significant IPA obstruction (stenosis/occlusion) is rather frequent, and it correlates positively with age, and negatively with the estimated creatinine clearance.

## CRT-91

### Single Versus Double Cryoplasty Inflation for Treatment of Above and Below Knee Peripheral Arterial Disease

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**Background:** Cryoplasty is one form of treatment for peripheral arterial disease (PAD). It combines the dilatation force of conventional angioplasty with cold energy applied to vascular smooth muscle cells provoking apoptosis and reducing myointimal hyperplasia. The first inflation breaks calcium. The second prevents matrix recoil. This study compares the six month results of single versus double cryoplasty inflations.

**Methods:** This is a retrospective cohort. 101 patients were enrolled. Their charts were reviewed to determine age, gender, Rutherford Class, lesion number, location, severity, number of cryoplasty inflations, and immediate results. Symptoms, ankle brachial indices (ABI), arterial Doppler and repeat angiography were reviewed at 6 months. Angiographic success was defined as  $< 30\%$  residual stenosis. Any atherectomy was an exclusion criterion.

**Results:** Of the 101, thirty seven were excluded after use of a debulking device or were lost to follow up. The baseline characteristics of those receiving single versus double inflations were evaluated. All patients were Rutherford class III to V. 21 had baseline tissue loss. Above knee PAD was noted in 69% and below knee in 31%. All treated lesions had  $> 70\%$  stenosis and 31% were chronic total occlusions. Double inflations were used in 56% and single in 44%. Double inflations were used more than single in above knee PAD compared to below knee. Immediate angiographic success was achieved in 100% of cases with both single and double inflations. Stenting was performed in 8 patients (all above knee) of which 6 had single inflations. Symptoms, ABI, and arterial Dopplers showed improvement at 6 months in both groups. At six months, all patients had healed ulcers except 2 who underwent amputation due to below knee disease. Both had single inflations. Repeat angiography was performed in 67% within 6 months. Ninety percent of those were planned interventions of another vessel. Restenosis was detected in 14% (6 single and 3 double inflations). Of those, six were below knee.

**Conclusion:** Single and double inflations showed similar success rates in treating above and below knee PAD. Restenosis was more frequent with below knee single inflations. A larger study is necessary to detect differences between single versus double inflations both below and above knee.