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Prevalence of Coronary Artery Disease in Patients of Critical Limb Ischemia Undergoing Endovascular Therapy in Asian Population

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Background: Peripheral vascular disease (PVD) is known to be a risk factor of significant coronary artery disease (CAD). The aim of this study was to analyze the prevalence of CAD in patients of critical limb ischemia undergoing endovascular therapy in Asian population.
Methods: A total of 286 consecutive critical limb ischemia (CLI) patients (pts) were treated by endovascular therapy (EVT). 252 pts [male 76.1%, age 67.4 ± 10.4] who underwent coronary angioplasty (CAG) before or after EVT were enrolled between November 2004 and October 2012. CAD was defined as angiographic stenosis ≥ 50% and significant CAD as ≥ 70% stenosis.
Results: At baseline, the incidence of hypertension was 70.6%, diabetes 73.0%, dyslipidemia 12.6%, cerebrovascular disease 17%, chronic kidney disease 23.0% and atrial fibrillation 9.1%. 58% pts had wounds (including DM foot, 49.2%), gangrene 9.1%, claudication 11.9%, resting pain 21.4% and Buerger's disease 3.1%. CAG results showed 62.5% with CAD and 50.6% with significant CAD. Among pts with significant CAD, 16.2% had undergone previous percutaneous coronary intervention (PCI) and 73 Pts (28.9%) received PCI during admission for EVT. Left main disease was observed in 8.3%, multi-vessel disease in 35.7%, and chronic total occlusion treated with medical therapy in 11.5%.
Conclusion: In this study, approximately 66.2% of pts with CLI undergoing EVT may have significant CAD in Asian population. Pts with PVD showed a significant association with CAD. Therefore, intensive anti- management and close clinical follow up would be needed.

Variable.n(%)	Total (n=252)	CAD (n=167)
Male	192 (76.1)	128 (76.6)
Age	67.4 ± 10.4	68.8 ± 8.17
BMI	23.1 ± 3.4	23.0 ± 3.5
Systolic blood pressure; SBP	147.5 ± 27.2	146.8 ± 28.5
Dystolic blood pressure; DBP	71.9 ± 12.7	71.3 ± 13.0
Heart rate	76.6 ± 14.1	75.8 ± 14.5
LV ejection fraction	55.1 ± 8.3	53.5 ± 10.
Diagnosis - DM Foot ulcer	124 (49.2)	85 (50.8)
Diagnosis - Wound	147 (58.3)	100 (59.8)
Diagnosis - Gangren	23 (9.1)	15 (8.9)
Diagnosis - Claudication	30 (11.9)	16 (9.5)
Diagnosis - Resting_pain	54 (21.4)	32 (19.1)
Diagnosis - Buergers	8 (3.1)	2 (1.1)
Hypertension	178 (70.6)	124 (74.2)
Diabetes	184 (73)	129 (77.2)
Insulin	89 (35.3)	67 (40.1)
Medicationsl	92 (36.5)	61 (36.5)
Diet	5 (1.9)	2 (1.1)
Dyslipidemia	32 (12.6)	22 (13.1)
Cerebrovascular disease	43 (17)	34 (20.3)
Hemorrhagic	3 (1.1)	3 (1.7)
Stoke	40 (15.8)	31 (18.5)
Peripheral vessel disease	131 (51.9)	92 (55)
Chronic kidney disease	58 (23.0)	40 (23.9)
Dialysis	41 (16.2)	28 (16.7)
Atrial fibrillation	23 (9.1)	15 (8.9)
Chronic heart failure	13 (5.1)	9 (5.3)
Coronary artery bypass graft; CABG	10 (3.9)	10 (5.9)
Percutaneous coronary intervention; PCI	41 (16.2)	41 (24.5)
PCI with PTA	73 (28.9)	73 (43.7)
Fixed lesion - Left main; LM (include Stented site)	21 (8.3)	18 (10.7)
Fixed lesion - Left artery desending; LAD (include Stented site)	92 (36.5)	92 (55)
Fixed lesion - Left circumflex; LCx (include Stented site)	77 (30.5)	77 (46.1)
Fixed lesion - Right coronary artery; RCA (include Stented site)	87 (34.5)	87 (52)
Multivessel disease	90 (35.7)	87 (52)
Count of vessel	79 (31.3)	79 (47.3)
Limb side - Right limb	169 (67.0)	116 (69.4)
Limb side - Left limb	155 (61.5)	106 (63.4)
Limb side - Both limb	72 (28.5)	55 (32.9)
Above The Knee	180 (71.4)	123 (73.6)
Below The Knee	149 (59.1)	100 (59.8)
Lesion site - distal Aorta	3 (1.1)	1 (0.5)
Lesion site - Iliac	80 (31.7)	58 (34.7)
Lesion site - Femoral	123 (48.8)	85 (50.8)
Lesion site - Popliteal	17 (6.7)	8 (4.7)
Lesion site - Tibial	145 (57.5)	98 (58.6)
Lesion site - Peroneal artery	37 (14.6)	28 (16.7)
[In-hospital medication] Aspirin	252 (100.0)	167 (100.0)
[In-hospital medication] Clopidogrel	229 (90.8)	154 (92.2)
[In-hospital medication] Cilostazol	140 (55.5)	96 (57.4)
[In-hospital medication] Warfarin	20 (7.9)	11 (6.5)
[In-hospital medication] Sarpogrelate	105 (41.6)	69 (41.3)
[In-hospital medication] Diuretic	60 (23.8)	38 (22.7)
[In-hospital medication] ß-blockers	81 (32.1)	64 (38.3)
[In-hospital medication] Ca+blockers	129 (51.1)	88 (52.6)
[In-hospital medication] ACE-inhibitors	61 (24.2)	50 (29.9)
[In-hospital medication] ARBs	102 (40.4)	69 (41.3)
[In-hospital medication] Statins	178 (70.6)	121 (72.4)

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Comparison of Revascularization Outcomes for Patients with Lifestyle Limiting Claudication to Critical Limb Ischemia

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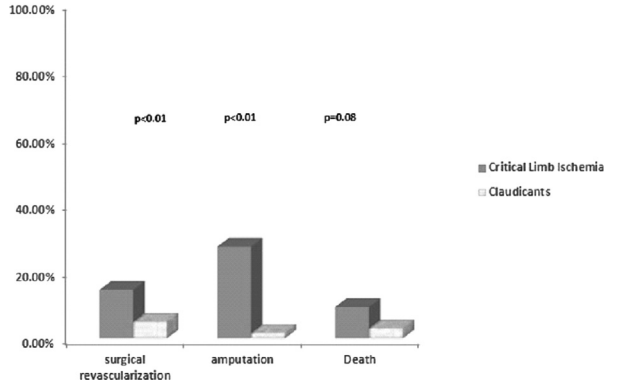
Background: There is limited data regarding differences in patency and clinical outcomes of patients with life style limiting claudication and Critical Limb Ischemia (CLI).
Methods: Retrospective data analysis was conducted from the ongoing *XL*PAD registry between July, 2005-October, 2013 to report clinical and revascularization

outcomes of Superficial Femoral (SFA), Popliteal and Below the Knee (BTK) vessels for Claudicants vs. CLI.
Results: A total of 559 interventions were performed on 343 patients (Claudicants 77% vs. CLI 23%). Diabetes Mellitus and Chronic Kidney disease were more prevalent in the CLI group as compared to Claudicants (71.8% vs. 54%, p<0.01 and 30.8% vs. 13.4%, p<0.01 respectively). Stent implantation was significantly lower in CLI patients (67.1% vs. 47.6%, p<0.01 respectively). Lesion lengths and frequency of chronic total occlusions were similar in both groups (105.3 ± 80.4 vs. 122.1 ± 77.6, p=0.08; 65.0% vs. 75.1%, p=0.2 respectively). Statin therapy was lesser used in CLI as compared to Claudicants (76.1% vs. 87.3%, p=0.05).Although repeat revascularization rates were similar in both groups (16.2% vs. 17.6%, p=0.7 respectively), surgical revascularization and amputation rates were higher in CLI (14.5% vs. 4.9%, p<0.01 and 27.4% vs. 1.6%, p<0.01 respectively. Likewise, mortality rates were also higher in the CLI cohort (9.4% vs. 3%, p=0.008).
Conclusions: CLI patients have lower rates of stenting but significantly higher frequency of surgical revascularization and amputations.

Figure-1 Complication rates between CLI vs. Claudicants



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Peace Registry: Patency Evaluation After Implantation of the Pulsar - 18 Self - Expanding Nitinol Stent in the Superficial Femoral and Popliteal Arteries

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Purpose: Patency evaluation of the self-expandable Pulsar-18 nitinol stent in patients for the treatment of femoro-popliteal occlusive disease in a national multicenter prospective all comers registry with a follow up period of 12 months.
Methods: Between 01/2012 and 08/2012 this all comers multicenter prospective registry enrolled 118 patients (64 male patients) with 151 symptomatic femoro-popliteal lesions Rutherford category II - V for recanalization and implantation of the Pulsar-18 nitinol stent. Primary patency was defined as no binary restenosis on duplex ultrasound (PSVR < 2,5) and respectively no target lesion revascularization performed within 12 months follow up. Drug eluting balloons were not allowed in this registry.
Results: Average lesion length of the femoro-popliteal segment was 111,5 ± 71,4 mm. According to the TASC classification 48 / 151 lesions were TASC D lesions. Mean stent implantation length was 122,7 ± 64,5 mm. A total occlusion was present in 84 of the 150 (56,7 %) treated lesions. Involvement of popliteal segment I-III was present in 28 (18,7 %) lesions. Primary patency after 6 and 12 months was 91,7 % and 79,5%. The clinically driven overall freedom from target lesion revascularization (FTLR) was 93,2 % after 6 months and 81 % after 12 months. ABI, pain free walking distance and Rutherford category improved significantly (p < 0,001) after 6 months and after 12 months. The restenosis rate in patients with diabetes (p = 1,0) and renal insufficiency (p = 0,8) was not significantly higher. Overlapping stents showed a non-significant trend for higher incidence of a significant restenosis. Popliteal stent implantation (P I - III segment) was not associated with a significant higher restenosis rate (p=0,3) after 12 months. For recanalization of chronic total occlusions (CTO) we did not find a significant difference (p = 0,67) in restenosis rate compared to non CTO lesions.
Conclusions: In this all comers registry using the Pulsar-18 self-expandable nitinol stent endovascular intervention of femoro-popliteal disease with a mean lesion length of 111,5 mm for revascularization had a promising primary patency and freedom from target lesion revascularization rate after 6 and 12 months. Diabetes had no negative impact on the patency rate. The primary patency rate in popliteal segments was acceptable with 71,4 % after 12 months.

Renal Intervention

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Efficacy and Safety of Transradial Approach to Renal Artery Interventions

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Background: Coronary interventions are routinely performed using transradial approach. But there is scarcity of studies evaluating the safety and efficacy of transradial approach to renal artery interventions. Thus further studies are needed to assess the efficacy and safety of this approach to renal artery interventions.
Methods: We conducted a retrospective chart review of all patients who underwent renal artery intervention at our institution from January 2000 through May 2012 and collected demographic, clinical and procedural characteristics. The patients were divided into two groups based on transradial or transfemoral approach for the procedure and outcomes were evaluated during the index hospitalization. The primary endpoint was the success rate of the approach, which was defined as successful completion of the procedure in achieving less than 30% residual stenosis without crossing over to any alternative approach. Secondary endpoints were major access site bleeding, time to discharge in hours after the end of the procedure, occurrence of cerebrovascular accident (CVA) or transient ischemic attack (TIA), and all cause mortality during the hospitalization.
Results: A total of 42 patients in the radial group and 35 patients in the femoral group underwent renal artery interventions on 59 and 51 lesions respectively. There were no significant differences in the baseline demographic and clinical characteristics between the two groups. There were a mean of 1.07 (± 0.51) stents placed in the radial group and 1.23 (± 0.77) stents placed in the femoral group. The primary endpoint was achieved in 40 (95%) and 35 (100%) patients in the radial and femoral groups respectively (p=0.50). There were no differences between radial and femoral groups in regard to major access site bleeding (0% in each group), time to discharge in hours (34.6 ± 33.0 vs. 39.8 ± 66.5, p= 0.25), CVA/TIA (2% vs. 0%, p=1.00) and all cause mortality during hospitalization (0% in each group) respectively.
Conclusion: Radial approach is an equally effective and safe alternative to transfemoral approach for renal artery interventions.

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Arterial Spasm During Renal Denervation: Is it a Complication?

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Background: In our center 11 patients (3 women. Average age 59.4 ± 16 years) affected by resistant hypertension were submitted to transcatheter renal denervation (TREND) between November 2011 and June 2013. 6 patients presented signs of hypertensive vascular damage. The patients were taking an average of 4 antihypertensive drugs in dosage ceiling, including a diuretic. The values of mean arterial pressure were: 176/98 ± 17/14 mmHg.