



# Predictors of Restenosis following Endoluminal Bypass Implantation for Femoro-Popliteal Lesions.

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## Study Background

- Previously several studies reported good outcomes of VIABAHN for femoro-popliteal lesion, and randomized study showed comparable patency rate compared to bare nitinol stent<sup>(1)</sup> or surgical treatment<sup>(2)</sup>.
- However, little is known about predictors of restenosis.
- Main objective in this analysis is to identify the predictors for restenosis of endoluminal bypass.

(1) Lammer et al. J Am Coll Cardiol 2013;62:1320-7  
 (2) K McQuade et al. J Vasc Surg 2010;52:584-91.

## Methods

- Retrospective analysis.
- Jan,2017 ~ Apr,2018 in our institution.
- Consecutive cases undergoing EVT for femoro-popliteal lesion with VIABAHN.
- Index procedure and medical treatment were at discretion of attending physician.
- Primary endpoint: Primary patency (defined as no evidence of significant restenosis), Assisted Primary Patency (defined as stent graft that had not occluded at any time) and Clinical Driven-Target Lesion Revascularization(CD-TLR).
- Secondary endpoint: MACE (composite of all cause death, stroke, and myocardial infarction), MALE (composite of all re-intervention, and major amputation), device infection and graft thrombosis.

## Results

Baseline Characteristics	N=87
Male	58.1%
Age, y	75.4 ± 12.7
Risk factors	
Diabetes	62.7%
IDDM	31.3%
Hypertension	86.0%
Dyslipidemia	57.0%
Smoking	61.6%
Current Smoking	5.8%
Chronic Kidney Disease	58.1%
Hemodialysis	27.9%
Past interventional data	
CAD	60.4%
Post PCI	45.3%
Post EVT	50.0%
Post CABG	12.8%
Medication	
Statin	81.4%
DAPT	93.0%
Anticoagulant	10.5%
Cilostazole	74.4%

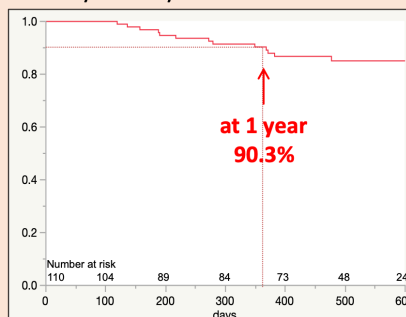
## Results

Lesion Characteristics	N=110
ABI (n=103)	0.65 ± 0.16
CLI	29.1%
SFA	97.2%
Popliteal artery	27.2%
TASC II D	33.6%
Occlusion	57.8% (53)
Lesion length	270.7 ± 78.3mm
PACSS 3or4	47.3%
ISR	20.1%
Distal runoff=0	7.2%
Procedural Characteristics	
Procedure time	98.4 ± 44.9min
Rx dose	285 ± 202mGy
Contrast dose	115 ± 48ml
Post-ABI	0.97 ± 0.17
Distal puncture	20.9%
IVUS use	100%
Stent number	2.1 ± 0.6
Minimum stent diameter=5mm	31.0% (34)

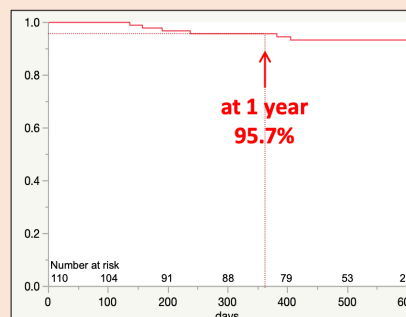
Endpoints	non-HD
Follow-up period	481 days (409, 618)
Primary Patency	87.3 %
freedom from CD-TLR	93.7 %
Graft Thrombosis*	5.5% (6)*
Secondary Outcome	
MACE	15.5% (17)
all cause death	12.7% (14)
myocardial infarction	0% (0)
stroke	4.5% (5)
MALE	11.8% (13)
major amputation	1.8% (2)
all re-intervention	11.8% (13)
Device Infection	0% (0)

\* did not include 2nd graft thrombosis

Primary Patency



Freedom from CD-TLR



variable	Univariate analysis	
	HR (95% CI)	p
<b>Age ≥ 75</b>	<b>0.21 (0.07-0.67)</b>	<b>0.005</b>
CLI	1.04 (0.28-3.78)	0.95
<b>IDDM</b>	<b>2.57 (0.89-7.41)</b>	<b>0.081</b>
Hemodialysis	1.16 (0.36-3.75)	0.805
Prior CAD	1.54 (0.46-4.91)	0.466
Statin	0.97 (0.12-7.47)	0.980
DAPT	-	0.999
<b>Cilostazol</b>	<b>0.34 (0.12-0.98)</b>	<b>0.045</b>
Anticoagulation	0.97 (0.13-7.47)	0.980
TASC II D	1.25 (0.42-3.76)	0.679
CTO	1.72 (0.53-5.48)	0.360
PACSS grade 3 or 4	2.51 (0.82-7.72)	0.108
Run-off = 0	-	0.999
Multi types of stents	1.29 (0.20-4.82)	0.740
Minimum stent diameter = 5mm	<b>2.80 (0.98-8.04)</b>	<b>0.055</b>

## Discussion & Conclusion

Our analysis implied that seventy-five of age or upwards and cilostazol use are predictor of restenosis in our cohort. Previous studies reported various of predictors of restenosis, which were oversized >20%, age <60y.o, poor outflow, smaller diameter. Because older people generally don't walk and move their legs very much, they would avoid mechanical stress, which could cause endothelial stress leading to restenosis. The effects of cilostazol are discussed previously especially on drug eluted stent. One of the drawback of endoluminal bypass is restenosis of proximal and distal edge. Cilostazol might control the proliferation of endothelial cell and provided good patency rate. Our cohort showed better outcome than those reported before it might be because the population are high age (75.4y.o) and high rate of cilostazol use (74.4%). This was short and mixed duration of follow-up period. Further follow-up study and larger sample size are needed.