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# Long-term follow-up after retrograde recanalisation of superficial femoral artery chronic total occlusion

*TECHNICAL FORUM*

*CLI and CTO summit  
– complex aortoiliac and femoral interventions*



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# Disclosure

Speaker name:

.....Stanislaw Bartus.....

I have the following potential conflicts of interest to report:

- Consulting
- Employment in industry
- Stockholder of a healthcare company
- Owner of a healthcare company
- Other(s)
  
- I do not have any potential conflict of interest

# Long term follow up after retrograde recanalization of superficial femoral artery chronic total occlusion.

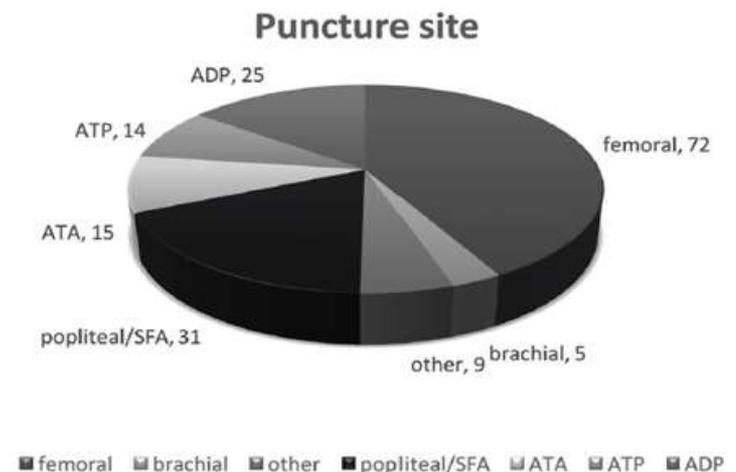


FIGURE 1. Puncture site, proximal and distal (number of patients). SFA = superficial femoral artery;

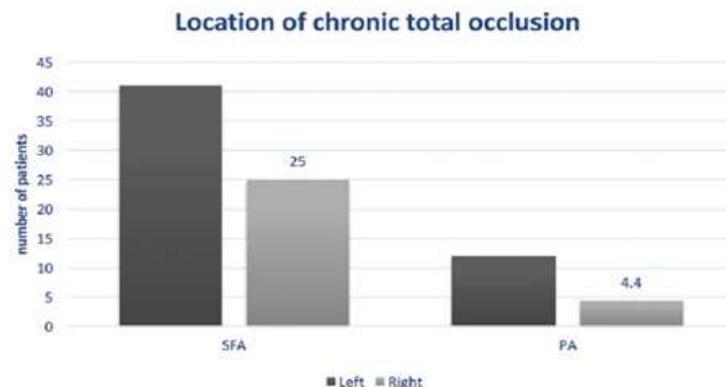


Table 1. Demographic data and medical history of patients.

Characteristic	[n = 86]
Male gender	58 [67.5%]
Age (years)	65 ± 9
Coronary artery disease	45 [52.3%]
Hyperlipidemia	52 [60.5%]
Hypertension	75 [87%]
Fontaine scale	
I-IIb	30 [34.9%]
III	21 [24.4%]
IV	35 [40.7%]
Chronic kidney disease	8 [9.3%]
COPD	13 [15.1%]
Previous stroke/TIA	8 [9.3%]
Previous bypass	13 [15.1%]
Previous PTA of the same vessel	22 [26.5%]
Diabetes mellitus	50 [58.1%]
Rutherford classification	
1	2 [2.3%]
2	13 [15.1%]
3	13 [15.1%]
4	21 [24.4%]
5	32 [37.2%]
6	3 [3.4%]

Data provided as number (%) or mean ± standard deviation. COPD = chronic obstructive pulmonary disease; TIA = transient ischemic attack; PTA = percutaneous transluminal angioplasty.

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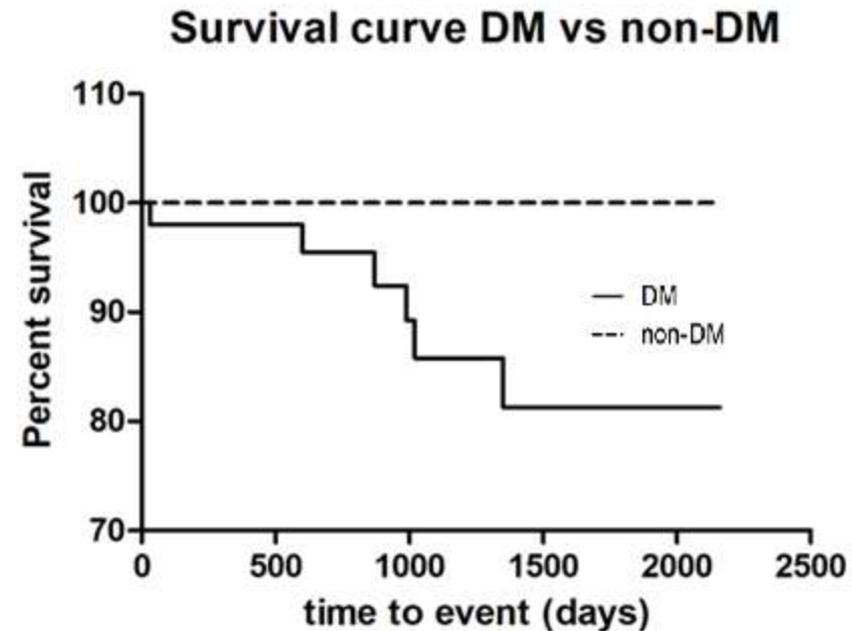
- ▶ 86 patients (67 % male), 64 ( $\pm$  9 years).
- ▶ Percutaneous retrograde recanalization.
- ▶ Recanalization - 100%.
- ▶ Perfect PTA result 93%
- ▶ In-hospital observation:
  - ▶ proximal hematoma (9.3%),
  - ▶ vascular perforation/bleeding (4.7%),
  - ▶ distal hematoma (4.7%),
  - ▶ puncture site bleeding (3.5%)
  - ▶ pseudoaneurysm (1.2%),
  - ▶ thrombosis (1.2%),
  - ▶ local inflammation (1.2%).
- ▶ **Mortality rate @47.5 months ( $\pm$  40)FU was 6.98% (4 year FU).**
- ▶ **In 20.9% cases reintervention in target vessel was needed,**
- ▶ in 27% cases PTA intervention of another artery was done.
- ▶ Rate of amputation was 4.7%.



# Long term follow up after retrograde recanalization of superficial femoral artery chronic total occlusion.

Major adverse cardiac and cerebrovascular events (MACCE) and other events after SFA CTO revascularization stratified by diabetes mellitus (DM) presence.

	All patients (n=86)	DM (n=50)	Non-DM (n=36)	P value
TVR	18 (20.9%)	9 (18%)	9 (25%)	0,4
nonTVR	23 (26.7%)	13 (26%)	10 (27,8%)	0,8
Amputation	4 (4.6%)	3 (6%)	1 (2.8%)	0,8
Stroke	0	0	0	
ACS	3 (3.5%)	2 (4%)	1 (2.8%)	0,8
All- cause mortality	6 (6.9%)	6 (12%)	0	0,038
Unsuccessful revascularization	5 (5.8%)	2 (4%)	3 (8,3%)	0,6



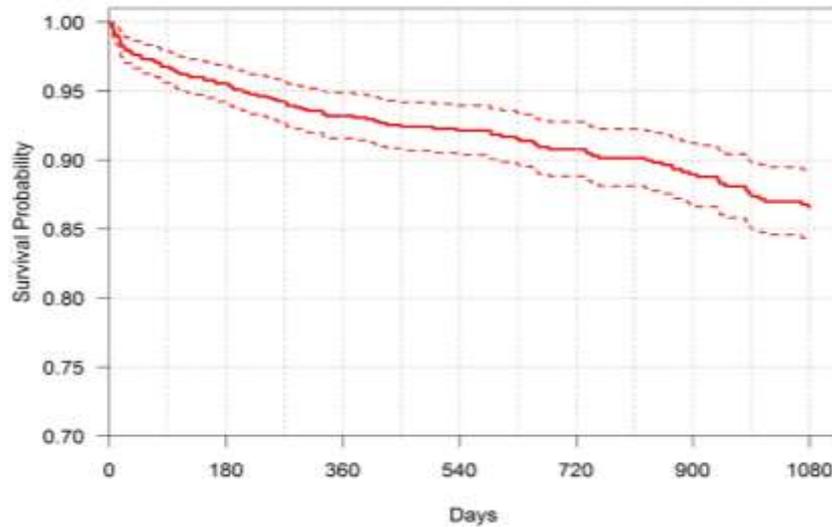
TVR- target vessel revascularization, non-TVRR- non target vessel revascularization, ACS- acute coronary syndrome

# Mortality and outcomes after retrograde endovascular angioplasty in patients with peripheral artery disease (n=834).

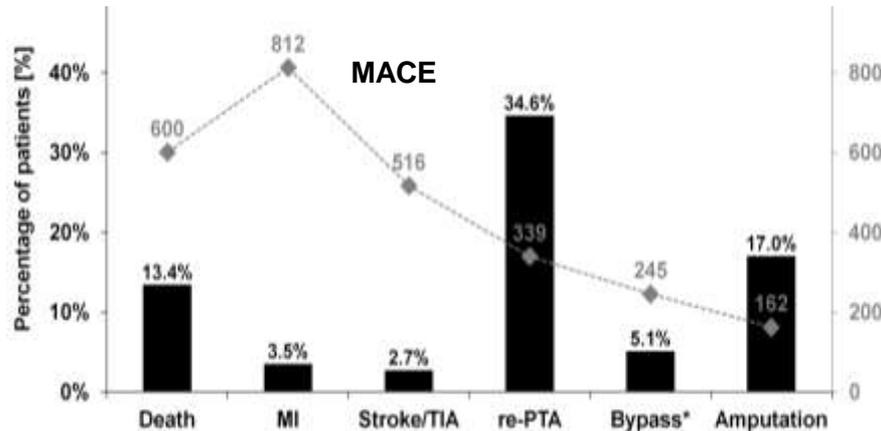
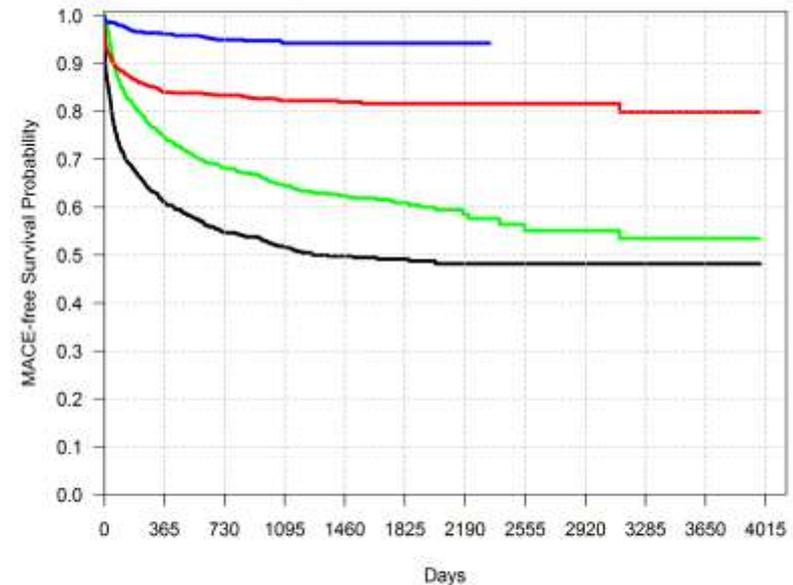
<b>VARIABLE</b>	<b>ALL N=834</b>
<b>RUTHERFORD CLASSIFICATION: 0</b>	0
1	23 (2.8%)
2	131 (15.7%)
3	112 (13.5%)
4	157 (18.9%)
5	134 (16.1%)
6	276 (33.1%)
<b>FONTAINE SCALE:</b>	
1	1 (0.1%)
2A	36 (4.4%)
2B	256 (30.7%)
3	149 (17.9%)
4	389 (46.7%)
5	1 (0.1%)
<b>ACUTE LIMB ISCHEMIA</b>	42 (5%)
<b>CHRONIC LIMB ISCHEMIA</b>	468 (56.1%)
<b>INTERMITTENT CLAUDICATION &lt;50 METERS</b>	322 (39%)
<b>ANKLE BRACHIAL INDEX, MEDIAN (IQR)</b>	0.6 (0.3-0.7)

# Mortality and outcomes after retrograde endovascular angioplasty in patients with peripheral artery disease (n=834).

**Survival**



**MACE-free Survival @10 years FU**



	939	485	362	266	187	124	55	39	35	26	13	0
MACE # at risk	939	485	362	266	187	124	55	39	35	26	13	0
Re-PTA # at risk	939	600	450	338	242	157	64	41	37	27	13	0
Amputation # at risk	939	634	512	398	274	177	79	54	52	39	19	0
LEB # at risk	939	654	499	376	257	150	33	0	0	0	0	0

# Mortality and outcomes after retrograde endovascular angioplasty in patients with peripheral artery disease (n=834)

## **Multivariate analysis**

### **Predictors of mortality rate after 36 months:**

<b>history of stroke</b>	(HR for stroke 2.4, 95% confidence interval (CI) 1.55-3.66; p=0.0002)
Age	(HR for age per 10 years 1.37, 95% (CI) 1.15-1.64; p=0.0002)
Rutherford category,	(HR for Rutherford category 1.63, 95% CI (1.35-1.98); p< 0.0001)
chronic limb ischemia	(HR for chronic limb ischemia 0.44, 95% CI (0.25-0.8), p=0.007)
chronic kidney disease (CKD)	(HR for CKD 1.73, 95% CI (1.14-2.56), p=0.01)
COPD	(HR for COPD 2.4, 95% CI (1.5-3.7), p=0.0004);
previous revascularization	(HR for previous ER 0.59, 95% CI (0.35-0.94), p=0.02).

### **Predictors of secondary endpoint (death, reER and amputation)**

diabetes	(HR 1.3, 95% CI (1.07-1.55, p<0.0075),
Rutherford category	(HR 1.27, 95% CI (1.18-1.37), p<0.0001)
history of stroke	(HR 1.41, 95% CI (1.05-1.86), p=0.02), all age-adjusted.

### **Independent predictors of tertiary composite end point (death, reER, amputation, myocardial infarction, lower extremity bypass and thrombendarterectomy).**

Rutherford grade	(HR 1.21, 95% CI (1.13-1.3), p<0.0001),
coronary artery disease	(HR 1.4, 95% CI (1.16-1.67), p=0.0003)
history of stroke	(HR 1.38, 95% CI (1.03-1.81), p=0.02)

# Outcomes after retrograde endovascular angioplasty

## Conclusions:

Long-term follow-up shows that

- retrograde recanalization results in high rate of technical success
- low number of reinterventions
- retrograde technique is safe and related to low complication rates; (most complications are local)
- history of stroke, Rutherford level, chronic limb ischemia, CKD, COPD, and previous endovascular revascularization of other lesion were independently associated with increased risk of all-cause death



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