



## 5-Year Results of the DETOUR PQ bypass:

Will it Make Open Bypass Obsolete

**Dainis Krievins MD, PhD**  
Professor of Vascular Surgery

**Roberts Rumba MD**  
Stradins University hospital  
Riga, Latvia

VEITH 2024

### Disclosure

Lombard Medical Ltd., Endologix Ltd.

X I have the following potential conflicts of interest to report:

- X Receipt of grants/research support
- Receipt of honoraria and travel support
- Employment in industry
- Shareholder in a healthcare company
- Owner of a healthcare company
- I do not have any potential conflict of interest

### CLTI Patient, 65 year old male

**Clinical status:**


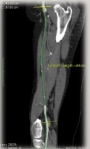



- Rutherford V
- Infected ulcer, R-foot
- Night pain

**Anamnesis:**

- Atherosclerosis, Diabetes mellitus, type II
- Multiple R-leg revascularizations
- L-common femoral endarterectomy
- CABG (bilateral saphenous veins used)
- Hypercholesterolemia, Dyslipidemia

**CTA:**

- Ca<sup>++</sup> Occlusion of L-superficial fem artery 44.5 cm

**Recommendations 6 (continued)**

6.32 In average-risk CLTI patients with infrainguinal disease, base decisions of endovascular intervention vs open surgical bypass on the severity of limb threat (eg, WIFD), the anatomic pattern of disease (eg, GLASS), and the availability of autologous vein.

Grade	Level of evidence	Key references
1 (Strong)	C (Low)	Almasri, 2018

**SYSTEMATIC REVIEW**

A systematic review and meta-analysis of revascularization outcomes of infrainguinal chronic limb-threatening ischemia

**Survival prediction in patients with chronic limb-threatening ischemia who undergo infrainguinal revascularization**

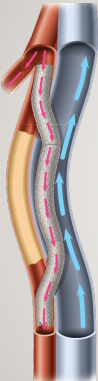

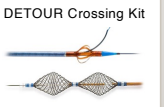
### The DETOUR Procedure

Percutaneous femoropopliteal bypass

Surgical principles using an endovascular approach

Originates in SFA, travels within the femoral vein, and returns to the popliteal artery

Femoral vein becomes pathway for stent graft bypass



### CLTI Patient: 5 years After Treatment

**Clinical picture:**

- Rutherford 0
- Infected ulcer healed in 3 weeks
- No Night pain

**5 year follow-up:**

- ABI<sub>lim</sub> 0.75
- Patient endovascular bypass
- No claudication
- No other AE's or MACE's
- No venous symptoms or DVT

### 60-Month Results from the DETOUR I and II Trials at Riga site

Prospective, multicenter, single-arm trial to evaluate the DETOUR Procedure for Percutaneous Femoropopliteal Bypass

**Latvia**  
**Germany**  
**Poland**  
**Chile**  
**NZ**

Israel University Hospital, Riga, Latvia; Universidad Católica de Santiago, Chile; Poznan University of Medical Sciences, Poznan, Poland; Institute of Hematology Medicine, Wrocław, Poland; University Łazgaj Medical Centre, Łazgaj, Germany; Gdańsk Medical University, Gdańsk, Poland; Auckland, New Zealand

### Riga Results DETOUR procedure Baseline Demographics

**N = 54 legs/ 52 patients**

Age, years (n = 34)	63 ± 7
Male	49/52 (94%)
Medical History / Comorbidities	
Hypertension	46/52 (88%)
Diabetes mellitus	6/52 (11.5%)
Hypercholesterolemia	11/34 (32%)
History of CAD	15/52 (29%)
History of smoking	48/52 (92%)
Previous peripheral intervention	7/52 (13%)

### Riga Results DETOUR procedure Baseline Lesion Characteristics

**N = 54 legs / 52 patients**

Lesion Length (Mean ± SD)	<b>28.4 cm ± 8.6 cm</b>
% CTO	94% (51/54)
Calcification	
Severe	67% (36/54)
Moderate	17% (9/54)
TASC II Lesion Type	
C	54% (29/54)
D	37% (20/54)
Run-off Vessels	
1	4/54 (7%)
2	19/54 (35%)
ABI	0.59 ± 0.19
Rutherford 3	89% (48/54)
Rutherford 4-5	11% (6/54)

### Follow-up 60 Months (All 54 legs)

- 80% at 12-month
- 57.4% at 24-month
- 41.3% at 36-month
- **37.0% at 60-month**

Independently adjudicated by Cleveland Clinic Core Laboratory and Syntactx CEC

### Follow-up 60 Months (All 54 legs)

- 88.9% assisted patency at 12-month
- 77.8% assisted patency at 24-month
- 60.9% assisted patency at 36-month
- **57.4% assisted patency at 60-month**

Independently adjudicated by Cleveland Clinic Core Laboratory and Syntactx CEC

### Follow-up 60 Months (All 54 legs)

- 92.6% secondary patency at 12-month
- 85.2% secondary patency at 24-month
- 69.6% secondary patency at 36-month
- **63.0% secondary patency at 60-month**

Independently adjudicated by Cleveland Clinic Core Laboratory and Syntactx CEC

### Safety Outcomes Through 60 Months

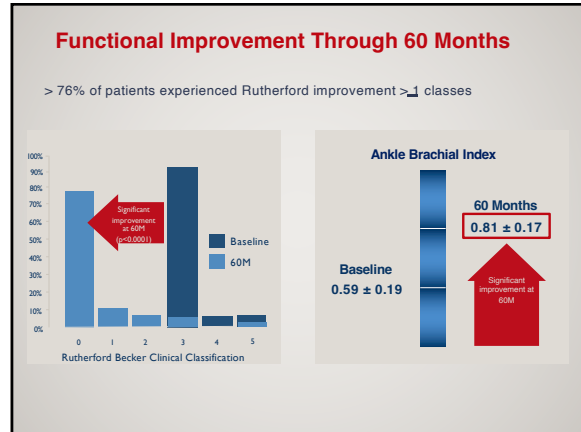
Major Adverse Events	1-Month	1-Year	2-Year	3-Year	4-Year	5-Year
Death	0	1	0	0	0	0
Target Vessel Revascularization (TVR)	2	5	6	2	2	0
Target limb Amputation	0	1	0	0	0	0
Symptomatic Deep Vein Thrombosis on Ipsilateral Limb	1	0	0	0	0	0
Stent Graft Thrombosis (absence of TVR)	1	4	5	3	4	0

3 Int Angiol. 2022 Oct 4; doi:10.23796/26580-9990.22.04037-9. Online ahead of print.

**Long term clinical and functional venous outcomes after endovascular transvenous femoro-popliteal bypass**

**No significant changes in venous symptom scores or physiologic function (plethysmography)**

Roberta Barina <sup>1</sup>, Danilo Kikovic <sup>2</sup>, Jaka Santonik <sup>3</sup>, Natalija Elica <sup>4</sup>, Jovana Kuzub <sup>5</sup>, Eva Petrovic <sup>6</sup>, Ludovic Mihaljevic <sup>7</sup>, Filip Latic <sup>8</sup>, Christian W. Carraro <sup>9</sup>



## Conclusions

5-year DETOUR Procedure Riga Outcomes

- 100% technical success rate demonstrates intuitive procedure that can be easily adopted across the most challenging lesions
- Safety outcomes demonstrate percutaneous bypass has a promising safety profile
- No significant impact on venous health
- Acceptable durability in long, challenging, calcified occlusive lesions
- Fully-percutaneous bypass is a promising endovascular alternative for complex femoro-popliteal disease
- Global long term results to follow

**There is still need for open bypass surgery!**

### DETOUR bypass: Real alternative or 3<sup>rd</sup> line approach? For FP Grade 4 (>20cm)

**Is saphenous vein available**

**Is vascular surgeon available**

High risk patients  
Hostile access area  
Previous surgeries failed  
After radiation  
Increased BMI  
Infected leg/ulcer

**Patient selection for the DETOUR bypass should be determined**

