



# Economic Evaluation of Prostatic Urethral Lift: Interim Results of the Ecolift Study



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## INTRODUCTION

The prostatic urethral lift (PUL) has emerged as a minimally invasive treatment for benign prostatic hyperplasia (BPH), offering preservation of sexual function and shorter hospitalization compared with conventional transurethral surgery (TURP or laser).

Despite these advantages, PUL is associated with inferior urinary symptom relief, and extra cost of the implanted device and its economic impact for the healthcare system remains insufficiently documented in real-life practice.

## AIM

The aim of the ECOLIFT study is to assess whether Urolift implants represent a cost-effective strategy for treating BPH compared to surgery.

## METHOD

### Design, Setting, and Participants:

ECOLIFT is a multicentre, prospective cohort study conducted in seven centres.

A total of 140 men with moderate-to-severe lower urinary tract symptoms due to BPH were included and followed-up for 3 years (74 PUL and 66 TURP/laser).

### Outcome Measurements and Statistical Analysis:

The primary outcome was incremental cost-effectiveness expressed as cost per complication avoided at 4 months. Complications were graded according to the Clavien–Dindo classification.

Costs were assessed from the healthcare system perspective, including index hospitalization and post-discharge healthcare expenses.

Statistical analyses were adjusted for baseline age, prostate volume, and post-void residual volume.

## RESULTS

Baseline characteristics differed slightly between groups, with PUL patients being younger and having smaller prostates and lower residual volumes.

At 4 months, symptom improvement was significant in both groups, while **preservation of sexual and ejaculatory function were greater in the PUL cohort.**

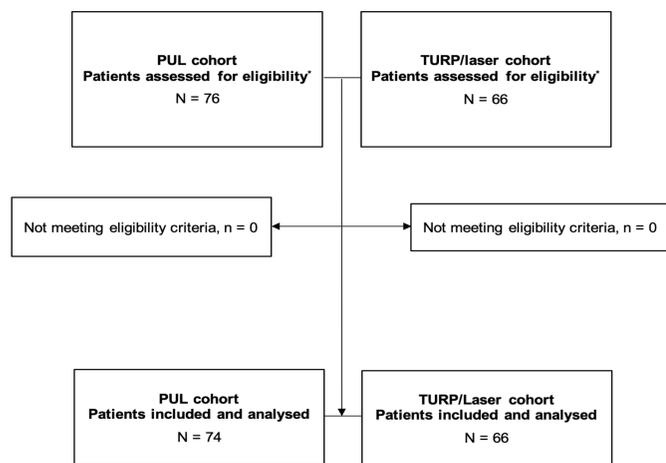
**PUL was associated with higher procedural cost** (+€1376 for implants) but **shorter hospitalization** and **fewer post-discharge complications** and healthcare interventions.

Overall, at least one complication occurred in 59.5% of PUL patients versus 74.2% of TURP/laser patients.

The mean **index hospitalization cost was lower with PUL** (€1957 ± 42 vs €2909 ± 971; p < 0.001).

The cost-effectiveness analysis showed **superiority of PUL with €6960 saved per avoided complication**, with 91.8% of bootstrap simulations being located in the southeast quadrant, indicating PUL to be less costly and more effective than TURP/laser.

Figure 1: Flow diagram for PUL and TURP/laser cohorts



\*Patients who signed the informed consent form

Table 1: Baseline characteristics according to the PUL and TURP/laser cohorts

	PUL cohort n = 74	TURP/laser cohort n = 66	p-value
<b>Age (in years)</b>			0.0003*
Mean (± SD)	64.0 (7.4)	68.6 (7.2)	
Median	65.0	69.0	
<b>IPSS</b>			0.2011*
Mean (± SD)	19.6 (5.2)	20.8 (6.1)	
Median	19.0	21.0	
<b>IPSS Q8</b>			0.0055***
Mean (± SD)	4.6 (0.9)	5.0 (1.0)	
Median	5.0	5.0	
<b>PSA level (ng/ml)</b>			0.0136***
Mean (± SD)	2.6 (2.1)	3.7 (2.9)	
Median	2.0	2.8	
<b>Peak urine flow rate (ml/s)</b>			0.2529***
Mean (± SD)	8.4 (2.8)	9.5 (5.2)	
Median	8.5	9.2	
<b>Post void residual urine (ml)</b>			0.0111***
Mean (± SD)	63.5 (66.0)	98.1 (81.4)	
Median	47.0	80.0	
<b>Prostate volume (ml)</b>			0.0001***
Mean (± SD)	47.0 (11.4)	55.7 (14.0)	
Median	45.0	55.5	
<b>IEF15 score</b>			<0.0001***
N (missing)	73 (1)	66 (0)	
Mean (± SD)	50.3 (19.3)	31.7 (23.3)	
<b>Number of BPH medications before inclusion</b>			0.6727***
Mean (± SD)	0.4 (0.6)	0.5 (0.7)	
Median	0.0	0.0	
<b>Type of BPH medications before inclusion, n (%)</b>			
Alpha blocker	21 (28.4)	20 (30.3)	0.8027**
5-alpha-reductase inhibitor	5 (6.8)	6 (9.1)	0.6084**
Phytotherapy	3 (4.1)	3 (4.5)	-
Anticholinergic	1 (1.4)	1 (1.5)	-

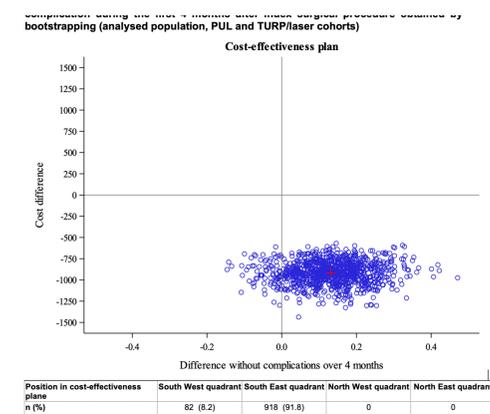
\* Student's t-test for independent samples  
\*\* Wilcoxon-Mann-Whitney test  
\*\*\* Fisher's exact test

Table 4: Cost-effectiveness ratio per avoided complication during the first 4 months after surgical procedure according to PUL and TURP/laser cohorts

	PUL cohort n = 74	TURP/laser cohort n = 66	Differential [95% CI] - p**
<b>Cost of index surgical procedure (in euros) per patient*</b>			
Mean (± SD)	1957.3 (42.3)	2909.1 (971.9)	-917.14 [-1176.33 ; -657.94] - < 0.0001
Median	1962.2	2488.8	
<b>≥ 1 complication related to the surgical procedure (before or after hospital discharge), n (%)</b>			
Yes	44 (59.5)	49 (74.2)	
No	30 (40.5)	17 (25.8)	0.13 [-0.04 ; 0.31] - 0.1422
<b>Cost-effectiveness ratio (in euro per avoided complication)</b>	-	-	-6960.34

\* The costs used, according to the type of hospital (public or private) are in Appendix 1

\*\* Mean differential (Generalized linear model adjusted by age, post void residual urine and prostate volume)



## CONCLUSIONS

This short-term interim analysis suggests that PUL is a cost-effective alternative to TURP/laser in selected patients, balancing higher implant costs with reduced hospital stay, complications, and healthcare expenses.

Long-term follow-up including quality-adjusted life years (QALYs) is needed to confirm the durability of these findings.

## TRIAL REGISTRATION

Clinical Trials NCT04726748

## SPONSOR

Investigator Initiated Study sponsored by NEOTRACT /TELEFLEX