

V EXPERT MEETING GREENLIGHT LASER
Roma, 12 Aprile 2019

GreenLEP

Risultati della letteratura

Francesco Varvello



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Alba

INVITED REVIEW

Transurethral enucleation of the prostate versus transvesical open prostatectomy for large benign prostatic hyperplasia: a systematic review and meta-analysis of randomized controlled trials

Youcheng Lin^{1,2} · Xun Wu^{3,4} · Abai Xu¹ · Rui Ren⁵ · Xueqiong Zhou⁶ ·
Yong Wen¹ · Yong Zou¹ · Mancheng Gong⁵ · Chunxiao Liu¹ · Zexuan Su^{3,4} ·
Thomas R. W. Herrmann⁷ 



- Nine RCTs including 758 patients
- functional outcomes and complications similar to OP for large BPH
- shorter catheter period, shorter hospital stays and less blood transfusion.
- next-generation “gold standard” of surgery for large BPH.

**EAU Guidelines on
Management of
Non-Neurogenic
Male Lower Urinary
Tract Symptoms
(LUTS), incl.
Benign Prostatic
Obstruction (BPO)**

S. Gravas (Chair), J.N. Cornu, M.J. Drake, M. Gacci, C. Gratzke,
T.R.W. Herrmann, S. Madersbacher, C. Mamasakakis,
L.A.O. Tikkinen
Guidelines Associates: M. Karavitakis, I. Kyriakis, S. Malfe,
V. Sakkalis, R. Umbach

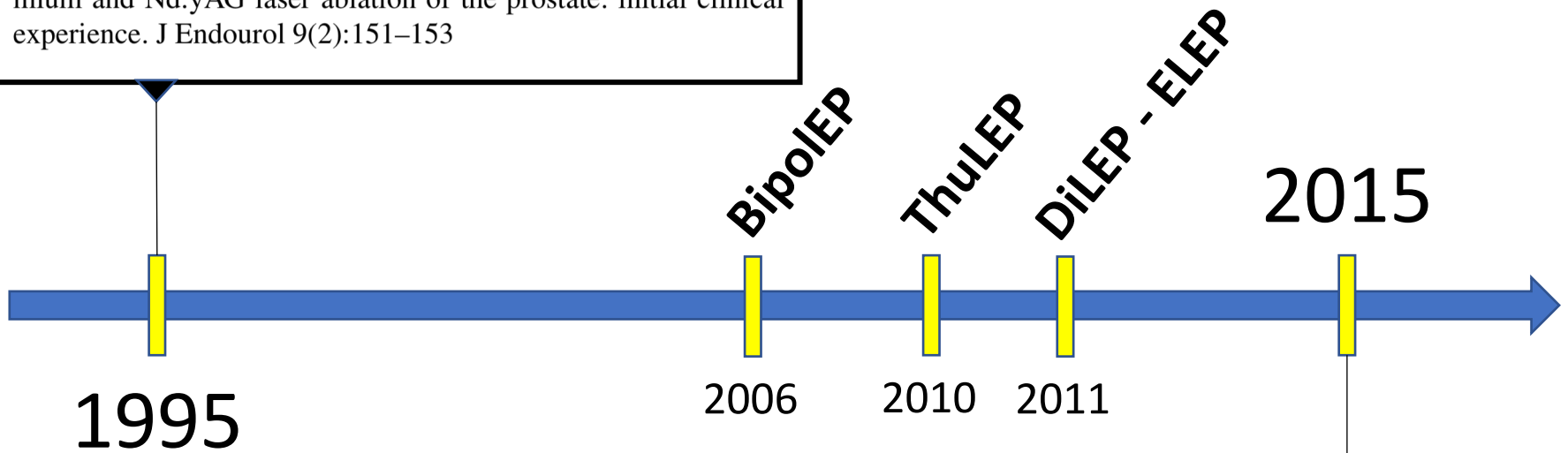
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Summary of evidence	LE
Open prostatectomy is an effective and durable procedure for the treatment of LUTS/BPO but it is the most invasive surgical method.	1b
Endoscopic enucleation of the prostate is an effective minimally invasive option for treating moderate-to-severe LUTS secondary to BPO in patients with large prostates.	1
Endoscopic enucleation of the prostate achieves similar short- and mid-term efficacy to OP.	1
Endoscopic enucleation of the prostate has a more favourable peri-operative safety profile compared with OP.	1
Open prostatectomy or EEP such as holmium laser or bipolar enucleation of the prostate are the first choice of surgical treatment in men with a substantially enlarged prostate and moderate-to-severe LUTS.	1

Recommendations	Strength rating
Offer endoscopic enucleation of the prostate or open prostatectomy to treat moderate-to-severe LUTS in men with prostate size > 80 mL.	Strong
Offer open prostatectomy in the absence of endoscopic enucleation to treat moderate-to-severe LUTS in men with prostate size > 80 mL.	Strong

HoLEP

Gilling PJ, Cass CB, Malcolm AR et al (1995) Combination holmium and Nd:yAG laser ablation of the prostate: initial clinical experience. J Endourol 9(2):151–153



GreenLEP

World J Urol (2015) 33:539–547
DOI 10.1007/s00345-014-1339-9

TOPIC PAPER

Common trend: move to enucleation—Is there a case for GreenLight enucleation? Development and description of the technique

Fernando Gomez Sancha · Vanesa Cuadros Rivera ·
Georgi Georgiev · Alexander Botsevski · Julian Kotsev ·
Thomas Herrmann

holmium laser enucleation prostate

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[Holmium Laser Enucleation of the Prostate: Patient Selection and Outcomes.](#)

Kuebker JM et al. *Curr Urol Rep.* (2017)

[Current status of holmium laser enucleation of the prostate.](#)

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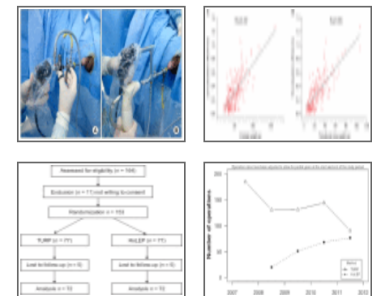
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green laser enucleation prostate

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EAU Guidelines on Management of Non-Neurogenic Male Lower Urinary Tract Symptoms (LUTS), incl. Benign Prostatic Obstruction (BPO)

S. Gravas (Chair), J.N. Cornu, M.J. Drake, M. Gacci, C. Gratzke, T.R.W. Herrmann, S. Madersbacher, C. Mamoulakis, K.A.O. Tikkinen
Guidelines Associates: M. Karavitaş, I. Kyriazis, S. Malde, V. Sakkalis, R. Umbach

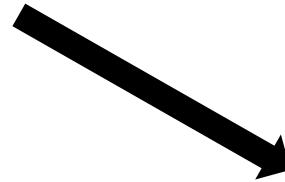
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Alternativa a



TURP



ATV

(forza della raccomandazione)

HoLEP

strong

strong

BipolEP

strong

strong

ThuLEP

weak

?

DiLEP

weak

?

GreenLEP

?

?

5.3.5.2.1 Summary of evidence and recommendations for 532 nm ('Greenlight') laser vaporisation of prostate

Summary of evidence	LE
Laser vaporisation of the prostate using the 80-W KTP and the 120-W LBO laser (PVP) demonstrated higher intra-operative safety with regard to haemostatic properties when compared to TURP. Peri-operative parameters such as catheterisation time and hospital stay are in favour of PVP, whereas operation time and risk of re-operation are in favour of TURP. Short-term results for the 80-W KTP laser and mid-term results for the 120-W LBO laser were comparable to TURP.	1a
Laser vaporisation of the prostate using the 180-W LBO laser (PVP) demonstrated higher intra-operative safety with regard to haemostatic properties when compared to TURP. Peri-operative parameters such as catheterisation time and hospital stay were in favour of PVP, whereas operation time was in favour of TURP. Short- to mid-term results are comparable to TURP.	1b
Laser vaporisation of the prostate using the 80-W KTP and 120-W KTP lasers seems to be safe for the treatment of patients receiving antiplatelet or anticoagulant therapy.	2
Laser vaporisation of the prostate using the 180-W LBO laser seems to be safe for the treatment of patients receiving antiplatelet or anticoagulant therapy; however the level of evidence available is low.	3

Final Recommendations	Strength rating
Offer 80-W 532-nm Kalium-Titanyl-Phosphate (KTP) laser vaporisation of the prostate to men with moderate-to-severe LUTS as an alternative to transurethral resection of the prostate (TURP).	Strong
Offer 120-W 532-nm Lithium Borat (LBO) laser vaporisation of the prostate to men with moderate-to-severe LUTS as an alternative to TURP.	Strong
Offer 180-W 532-nm LBO laser vaporisation of the prostate to men with moderate-to-severe LUTS as an alternative to TURP.	Strong
Offer laser vaporisation of the prostate using 80-W KTP, 120- or 180-W LBO lasers for the treatment of patients receiving antiplatelet or anticoagulant therapy with a prostate volume < 80 mL.	Weak



Comparison between open simple prostatectomy and green laser enucleation of the prostate for treating large benign prostatic hyperplasia: a single-centre experience

Vincent Misrai¹ · Marie Pasquie¹ · Benoit Bordier¹ · Benjamin Elman¹ · Jean Michel Lhez¹ · Julien Guillotreau¹ · Kevin Zorn²

204 ATV (2005-2010)
VS
204 GreenLEP (2013-2017)

	OSP (<i>n</i> = 204)	GreenLEP (<i>n</i> = 204)	<i>p</i> value
<i>Baseline characteristics</i>			
Age (years)	69 [64; 76]	68 [65; 73]	0.4
BMI	26 [24; 28]	26 [24; 28]	0.97
ASA 3 (%)	13.7	21.3	0.056
Prostate volume (mL)	90 [80; 120]	100 [80; 120]	0.8
PSA level (ng/mL)	5.9 [3.7; 9]	5 [3.2; 8.5]	0.15
Indwelling catheter (%)	7.8	25.5	< 0.0001
Antiplatelet therapy (%)	28.4	42.1	0.0002
Oral anticoagulants (%)	5.4	6.4	0.8
5-ARI (%)	21.3	22.5	0.7
Bladder stones (%)	5.8	6.9	0.69
<i>Perioperative outcomes</i>			
Overall operating time (min)	67 [60; 80]	60 [50; 70]	< 0.0001
	67 [60; 80]	70 [60–98] ^a	0.08
Energy used (kJ)	–	59 [45; 78]	–
Vaporization time (min)	–	18 [13; 22]	–
Morcellating time (min)	–	5 [3; 8]	–
Conversion into TURP (%)	–	9.3	–
Catheterization time (days)	5 [5; 6]	2 [2; 2]	< 0.0001
Hospitalization time (days)	7 [6; 7]	2 [2; 3]	< 0.0001
Weight specimen (g)	70 [50; 90]	60 [38; 80]	0.0002
Pathology (<i>n</i>)			0.5
T1a Gleason 6 (3 + 3)	13	8	
T1b Gleason 6 (3 + 3)	0	2	
T1a Gleason 7 (3 + 4)	4	2	
T1b Gleason 7 (3 + 4)	0	0	

	OSP (<i>n</i> = 204)	GreenLEP (<i>n</i> = 204)	<i>p</i> value
<i>Early postoperative complications (< 30 days)</i>			
Overall complications (%)	37.2	20.6	0.0001
Low grade			0.021
Clavien I	8.4	5.4	
Clavien II	17.6	10.8	
High grade			0.015
Clavien IIIa	8.8	0.98	
Clavien IIIb	2.4	3.4	
Blood transfusion rate (%)	8.3	0.5	0.0001
	OSP (<i>n</i> = 127)	GreenLEP (<i>n</i> = 204)	<i>p</i> value
<i>2-month outcomes</i>			
IPSS	6 [3.6; 7]	4 [3; 5.8]	0.6
Q_{\max} (mL/s)	27 [25; 29]	26 [24; 28]	0.4
IIEF-5	NA	20 [19; 22]	–
Prostate volume residual (mL)	20 [19; 30]	25 [20; 30]	0.55
PSA (ng/mL)	0.5 [0.31; 1.2]	0.6 [0.36; 1]	0.86
Urinary incontinence (%)	4.3	3.4	0.6
Number of pad/day	1	1	0.7
Urethral stricture (%)	4.4	1.4	0.08
Bladder neck sclerosis	0.98	0	0.5
	OSP (<i>n</i> = 90)	GreenLEP (<i>n</i> = 204)	<i>p</i> value
<i>6-month outcomes</i>			
IPSS	4 [3; 5]	4 [3; 4.5]	0.5
Q_{\max} (mL/s)	29 [25; 31]	27 [25; 30]	0.7
PSA (ng/mL)	0.71 [0.59; 1.8]	0.6 [0.4; 0.9]	0.034
Urinary incontinence (%)	1.9	1.4	0.5
Number of pad/day	1	1	0.7
Unplanned readmission (%)	7.8	8.3	0.4

Learning curves and perioperative outcomes after endoscopic enucleation of the prostate: a comparison between GreenLight 532-nm and holmium lasers

Benoit Peyronnet¹ · Grégoire Robert² · Vincent Comat² · Morgan Rouprêt³ · Fernando Gomez-Sancha⁴ · Jean-Nicolas Cornu⁵ · Vincent Misrai⁶

HoLEP

- 2012-2014
- Unico operatore
- 100 pz consecutivi
- Non selezionati in base al volume della prostata
- Tecnica a 2 lobi

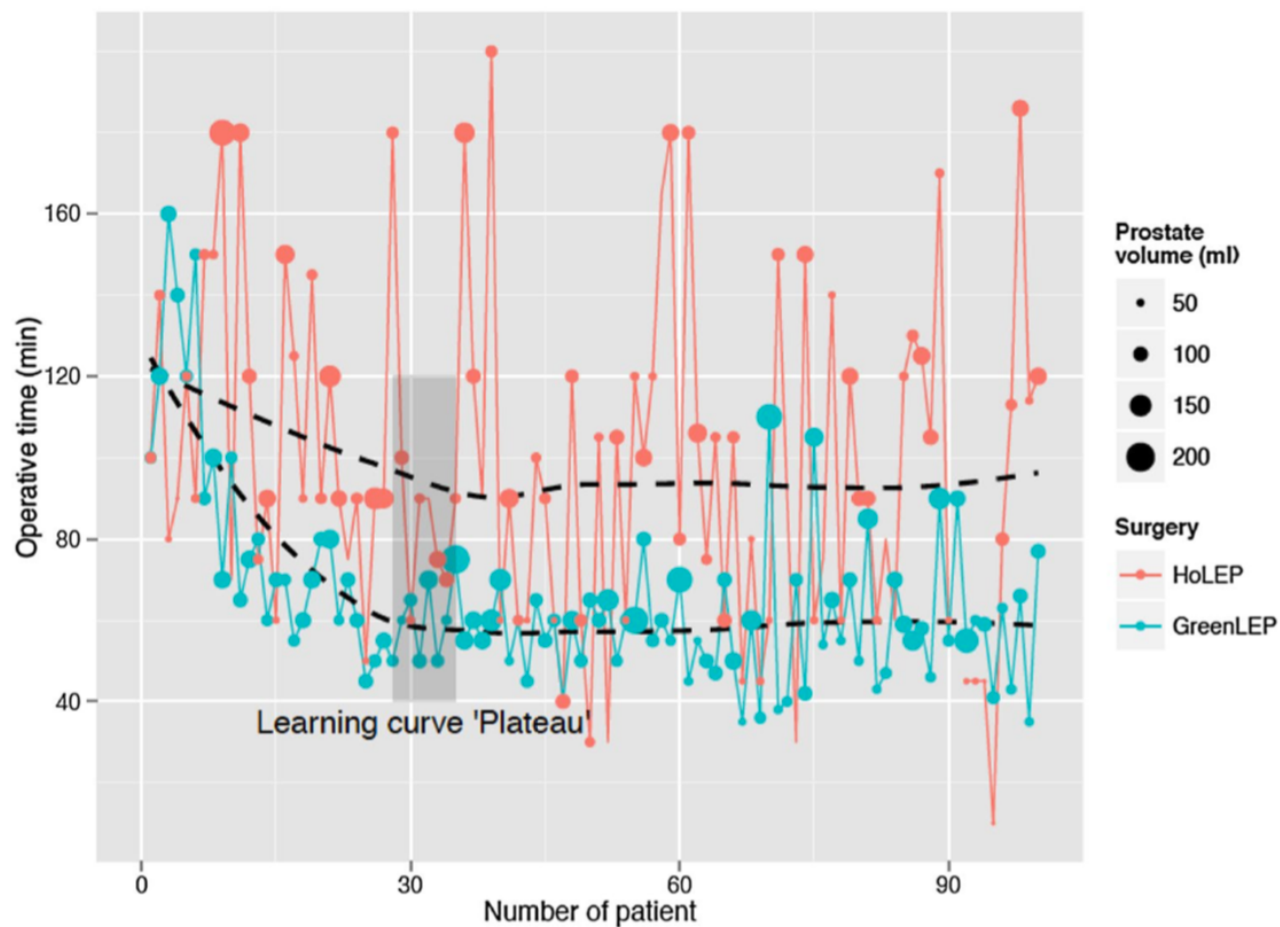
GreenLEP

- 2013-2015
- Unico operatore
- 100 pz
- Volume prostata >80 cc
- Tecnica en-bloc

Learning curves and perioperative outcomes after endoscopic enucleation of the prostate: a comparison between GreenLight 532-nm and holmium lasers

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Operative time evolution



Learning curves and perioperative outcomes after endoscopic enucleation of the prostate: a comparison between GreenLight 532-nm and holmium lasers

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Solo pz con volume prostata >80 cc

	HoLEP (<i>n</i> = 53)	GreenLEP (<i>n</i> = 100)	<i>p</i> value
Total energy (kJ)	139 [75; 189]	58 [45; 85]	<0.0001
Energy/ml prostate (kJ/mL)	1.1 [0.8; 1.6]	0.6 [0.4; 0.8]	<0.0001
Intraoperative time (min)	106 [90; 150]	60 [50; 70]	<0.0001
Time/ml prostate (min/mL)	1.3 [1; 1.7]	0.6 [0.54; 0.8]	<0.0001
Conversion to monopolar TURP			
For haemostasis	4 %	11 %	0.18
For residual prostatic tissue	0 %	4 %	
Conversion into open simple prostatectomy	0 %	1 %	0.99
Catheterization (days)	1 [1; 1]	2 [2; 2]	<0.0001
Length of stay (days)	1 [0; 2]	2 [2, 3]	<0.0001
Outpatient procedure	30 %	0 %	
Weight of specimen (g)	60 [50; 78]	72.5 [49; 80]	0.04
Early postoperative complications (Clavien–Dindo)	25 %	19 %	0.43

Learning curves and perioperative outcomes after endoscopic enucleation of the prostate: a comparison between GreenLight 532-nm and holmium lasers

Benoit Peyronnet¹ · Grégoire Robert² · Vincent Comat² · Morgan Rouprêt³ · Fernando Gomez-Sancha⁴ · Jean-Nicolas Cornu⁵ · Vincent Misrai⁶

HoLEP

- = outcome perioperatorio e a breve termine
- Learning curve 22-40 casi
- Minori conversioni a TURP
- Minori perforazioni capsulari

GreenLEP

- = outcome perioperatorio e a breve termine
- Learning curve 14-30 casi
- Minore energia necessaria
- Minore tempo operatorio

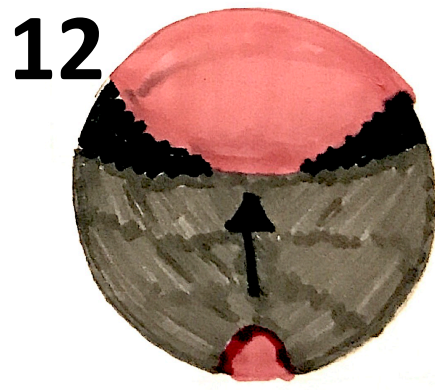
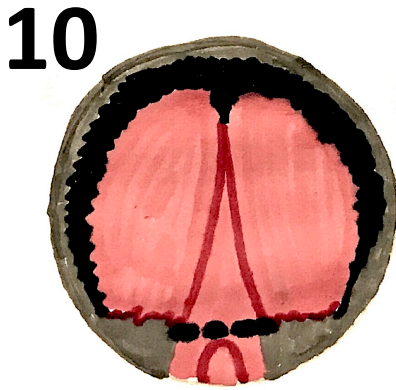
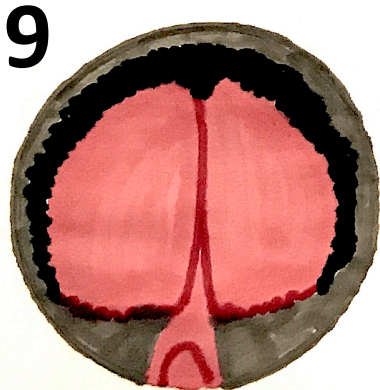
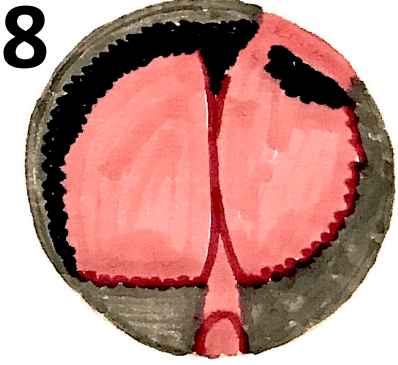
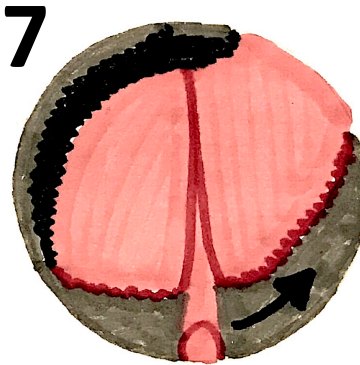
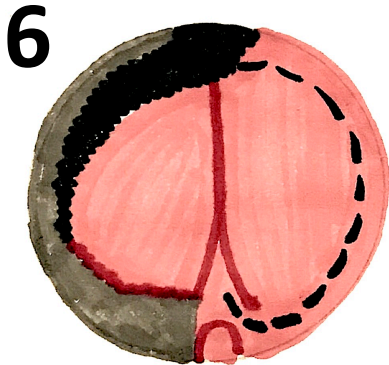
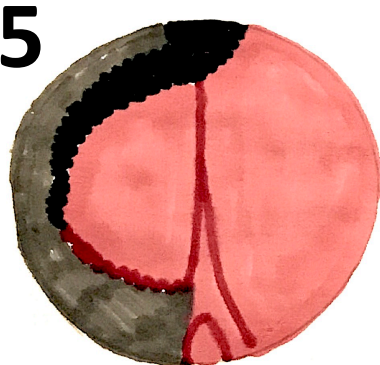
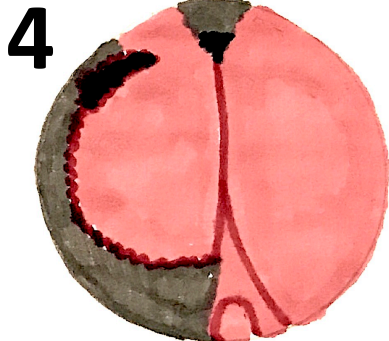
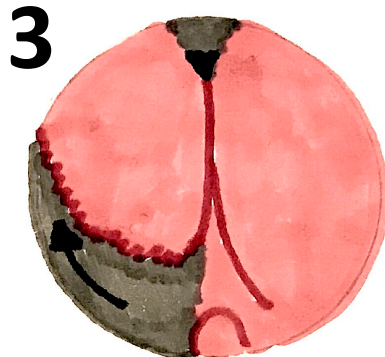
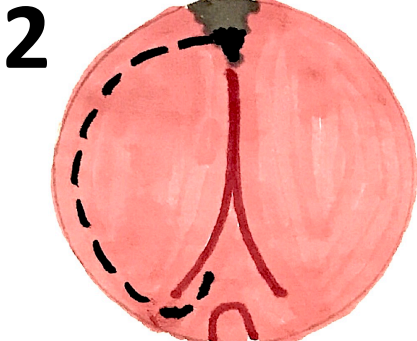
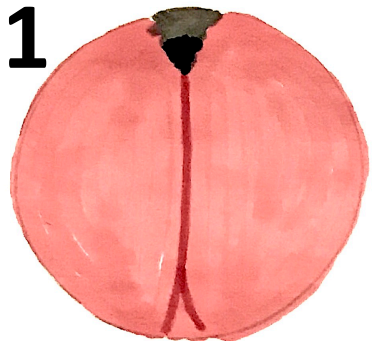
A Simplified Technique for GreenLight Laser Enucleation of the Prostate



Petar Bajic, Nicolas Noriega, Alex Gorbonos, and Edward Karpman

OBJECTIVE	To present a simplified technique for GreenLight laser enucleation of the prostate (GreenLEP), designed to reduce the learning curve commonly associated with endoscopic prostate enucleation.
MATERIALS AND METHODS	GreenLEP is a novel endoscopic treatment for BPH which allows for durable resection of large glands with minimal energy use, minimal bleeding and has been shown to be non-inferior to holmium laser enucleation of the prostate (HoLEP). Furthermore, GreenLEP has been shown to be superior to GreenLight PVP For glands > 80 g with respect to operative time, unplanned hospital readmission and decrease in post treatment PSA and prostate size. Unfortunately, a steep learning curve has remained a roadblock for adaptation by many urologists. Our technique for lobe-by-lobe GreenLEP is described and shown.
RESULTS	GreenLEP allows for removal of the entire transition zone in patients with large glands traditionally best treated with staged TURP or simple prostatectomy. A lobe-by-lobe approach allows the urologist to learn the procedure in a stepwise fashion as they become increasingly comfortable with the technique. During the learning process, some lobes may be addressed by enucleation while others by vaporization.
CONCLUSION	This simplified technique allows novice enucleators with GreenLight experience to feel more comfortable with GreenLEP, simplifying the learning curve. UROLOGY 123: 293–294, 2019. © 2018 Elsevier Inc.

GreenLEP en-bloc modificata



Green LEP vs ThuLEP vs HoLEP in Management of Marked Enlarged Prostate



The safety and scientific validity of this study is the responsibility of the study sponsor and investigators. Listing a study does not mean it has been evaluated by the U.S. Federal Government. Read our [disclaimer](#) for details.

ClinicalTrials.gov Identifier: NCT03305861

[Recruitment Status](#) ⓘ : Active, not recruiting

[First Posted](#) ⓘ : October 10, 2017

[Last Update Posted](#) ⓘ : October 11, 2017

Sponsor:

Mansoura University

Information provided by (Responsible Party):

Mahmoud Laymon, Mansoura University

Study Design

Go to

[Study Type](#) ⓘ : Interventional (Clinical Trial)

Estimated [Enrollment](#) ⓘ : 150 participants

Allocation: Randomized

Intervention Model: Parallel Assignment

Masking: Single (Participant)

Primary Purpose: Treatment

Official Title: GreenLight (532nm) LASER (XPS) Enucleation of Prostate vs. Thulium LASER Enucleation of Prostate vs. Holmium LASER Enucleation of Prostate for Treatment of Benign Prostatic Hyperplasia

Actual [Study Start Date](#) ⓘ : April 1, 2017

Estimated [Primary Completion Date](#) ⓘ : April 1, 2018

Estimated [Study Completion Date](#) ⓘ : December 1, 2018

5° EXPERT MEETING GREENLIGHT LASER
Roma, 12 Aprile 2019

GreenLEP

Perché io difendo la GreenLEP

Francesco Varvello



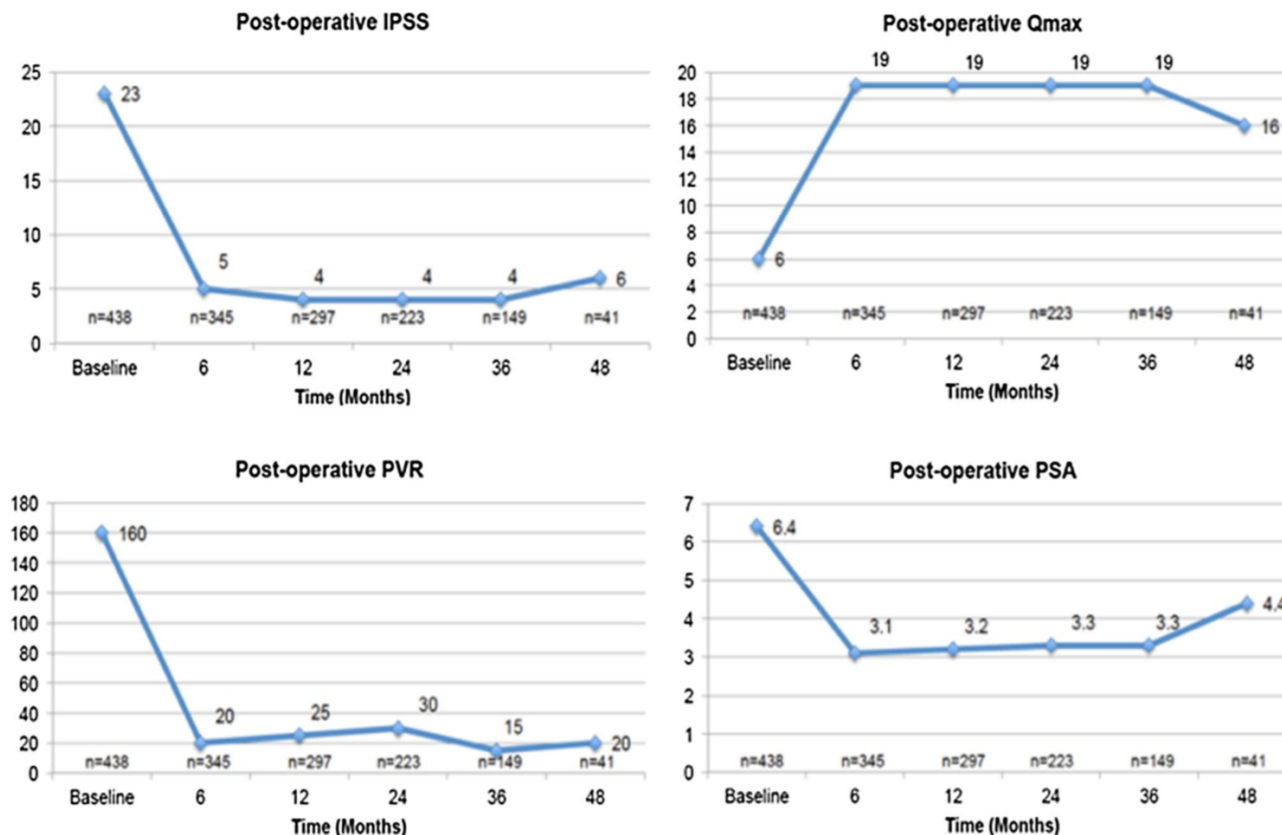
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GreenLEP vs vaporizzazione

GreenLEP vs altre tecniche enucleative

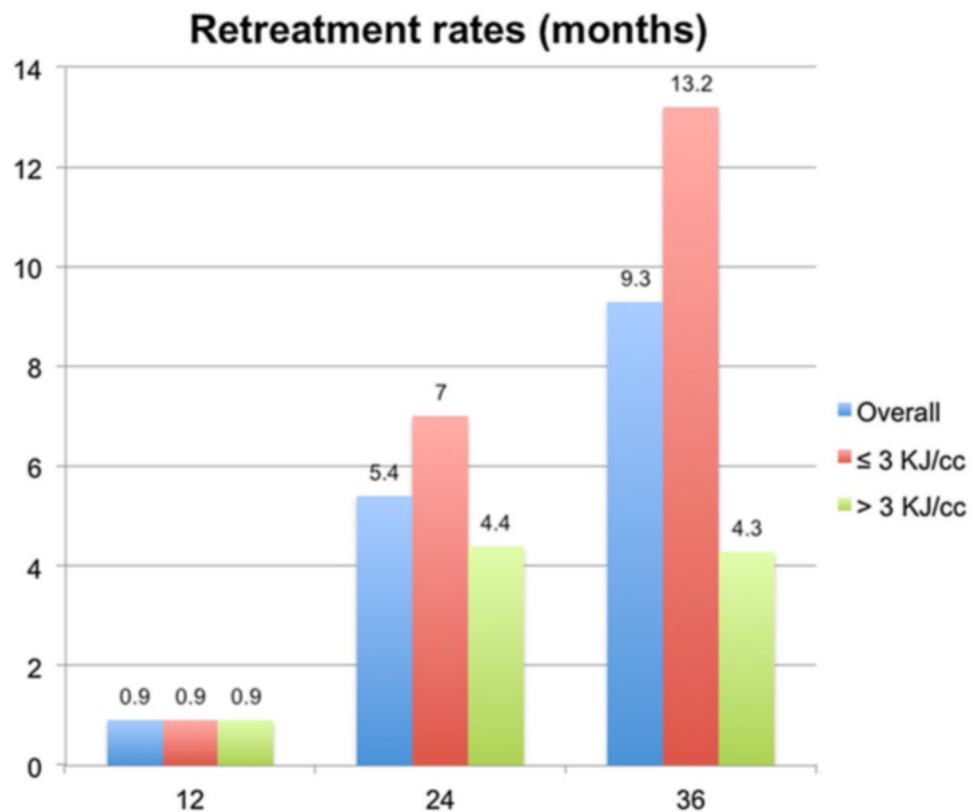
Multicenter international experience of 532 nm-laser photovaporization with Greenlight XPS in men with large prostates (prostate volume > 100 cc)

Malek Meskawi¹ · Pierre-Alain Hueber¹ · Roger Valdivieso¹ · Franck Bruyere² · Vincent Misrai³ · Georges Fournier⁴ · Ravi Munver⁵ · Ganesh Sivarajan⁵ · Matthew Rutman⁶ · Alexis E. Te⁷ · Bilal Chughtai⁷ · Dean Elterman⁸ · Tristan Martel¹ · Mounsi Azizi¹ · Pierre I. Karakiewicz¹ · Kevin C. Zorn¹



Multicenter international experience of 532 nm-laser photovaporization with Greenlight XPS in men with large prostates (prostate volume > 100 cc)

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**Direct comparison of Green Light Laser XPS
Photoselective Vaporization of the Prostate (PVP) and
Green Laser En Bloc enucleation of the prostate
(GreenLEP) in enlarged glands > 80 ml: A study of 120
patients**

Vincent Misrai, Sebastien Kerever, Veronique Phe, Kevin C. Zorn, Benoit
Peyronnet, Morgan Rouprêt

J Urol. 2016 Apr;195(4 Pt 1):1027-32. doi: 10.1016/j.juro.2015.10.080. Epub 2015 Oct 17.

	PVP (n=60)	GreenLEP (n=60)	p-value
Total energy (KJ)	490 [360 ; 580]	65 [47 ; 95]	<0.0001
Lasing time (min)	58 [45 ; 68]	20 [15 ; 25]	<0.0001
Energy/ml prostate (KJ/ml)	4.6 [3.6 ; 5.7]	0.7 [0.5 ; 0.98]	<0.0001
Intraoperative time (min)	82 [65 ; 110]	60 [55 ; 70]	<0.0001
Lasing time/operative time (%)	67 [61 ; 73]	29 [25 ; 36]	<0.0001
Conversion to monopolar TURP	5 (8.3%)	10 (16.6%)	0.16
Reason of TURP conversion			
For haemostasis	4 (6.7%)	6 (10%)	0.74
For residual prostatic tissue	1 (1.6%)	4 (6.7%)	0.36
Number of laser fibre per procedure*	1.12 (0.32)	1.02 (0.13)	0.03
Catheterization (days)	1.5 [1 ; 2]	2 [2 ; 2]	<0.0001
Early postoperative complications	15 (25%)	10 (16.6%)	0.37
Clavien-Dindo classification			
I	5 (8.3%)	3 (5%)	
<i>Fever resolving spontaneously</i>	4	0	
<i>Confusion</i>	1	1	
<i>Gross hematuria</i>	0	2	
II	8 (13.3%)	5 (8.3%)	
<i>Acute urinary retention</i>	3	4	
<i>Gross hematuria</i>	2	1	0.99
<i>Urinary tract infection</i>	3	0	
IIIa	0	0	
IIIb	2 (3.3%)	2 (3.3%)	
<i>Conversion to open simple prostatectomy</i>	0	1	
<i>Two stages morcellation due to bleeding</i>	0	1	
<i>Reoperation for blood clots removal</i>	2	0	
Capsular perforation	6 (10%)	7 (11.6%)	0.84
Blood transfusion	1 (1.6%)	1 (1.6%)	0.99
Length of stay (days)	2 [2 ; 4]	2 [2 ; 4]	0.58

	PVP (n=60)	GreenLEP (n=60)	p-value
2 months outcomes			
I-PSS	4 [3 ; 6]	4.5 [3 ; 6]	0.84
Reduction rate of I-PSS (%)	70 (23)	71 (16)	0.62
IPSS question 8 (QOL)	1 [1 ; 2]	1 [0 ; 2]	0.83
Qmax	19 [16 ; 23]	25 [23 ; 27]	<0.0001
Increasing rate of Qmax (%)	64 (16)	78 (17)	<0.0001
PV (ml)	40 [30 ; 60]	23 [20 ; 30]	<0.0001
Reduction rate of PV (%)	57 (16)	74 (11)	<0.0001
PVR (ml)	0 [0 ; 1.5]	0 [0 ; 5]	0.97
PSA (ng/dl)	1.7 [1.4 ; 3.0]	0.64 [0.3 ; 1.0]	<0.0001
Reduction rate of PSA (%)	49 (29)	82 (17)	<0.0001
Urinary incontinence (%)	2 (3.4%)	15 (25%)	<0.0001
6 months outcomes			
PSA (ng/dl)	1.6 [1.0 ; 2.5]	0.66 [0.4 ; 1.9]	0.006
Reduction rate of PSA	40 (77)	67 (46)	0.007
Urinary incontinence	0	2 (3.4%)	0.15
6 months-Unplanned readmissions	10 (16.7%)	4 (6.7%)	0.16
Cause of readmission			
Acute urinary retention	2 (20%)	1 (25%)	
Gross hematuria	2 (20%)	0	
2 stages morcellation	0	1 (25%)	
Urethral stricture	2 (20%)	0	
Bladder neck stricture	1 (10%)	0	
Urinary infection	3 (30%)	1 (25%)	
Cystoscopy (persistent overactive bladder)	0	1 (25%)	

Photoselective vaporization of the prostate with Greenlight laser XPS 180W, Green laser enucleation of the prostate and open prostatectomy for benign prostatic obstruction: A propensity score analysis of perioperative and short term results

Huet R.¹, Vincendeau S.¹, Sebe P.², Peyronnet B.¹, Guillé F.¹, Colau A.², Verhoest G.¹, Bensalah K.¹, Guillonnet B.², Mathieu R.¹
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2012-2015
 1034 patients
 2 institutions
 Prostates > 80 cc
 Mean size 120 cc

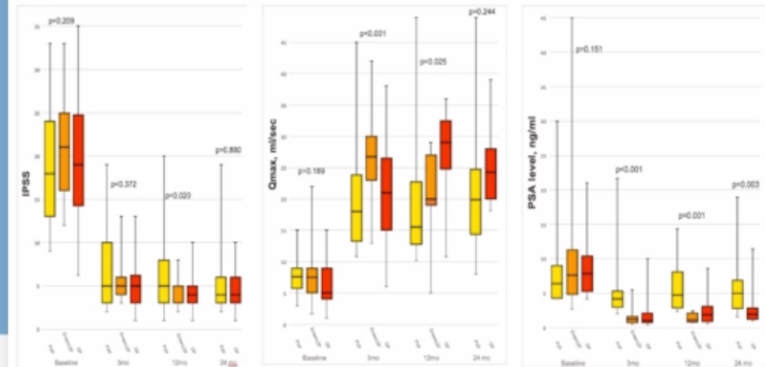
GreenLEP:
 Less bleeding
 Less catheterisation
 Less Hospital Stay
 Less retreatment than PVP
 Lower PSA drop than PVP

Early post-operative adverse events:

	PVP	GreenLEP	OP	p value
Need for postoperative transfusion (I)	4 (8.0)	5 (10.0)	-	0.730
Bleeding due to capsule perforation	4 (8.0)	4 (8.0)	-	0.977
Use of TURP loop	4 (8.0)	4 (8.0)	-	0.977
Conversion to other technique	1 (2.0)	2 (4.0)	-	0.586
No. postoperative bleeding (%)	2 (4.0)	5 (10.0)	11 (22.0)	0.018
Irrigation >48hours (I)	1 (2.0)	5 (10.0)	11 (22.0)	0.006
Clot evacuation bedside (I)	1 (2.0)	3 (6.0)	8 (16.0)	0.029
Blood transfusion (II)	1 (2.0)	0	5 (10.0)	0.026
Surgical clot evacuation under anesthesia (III)	1 (2.0)	0	2 (4.0)	0.365
Hemorrhagic shock requiring ICU (IV)	0	0	1 (2.0)	0.370
No. post-operative urinary tract infection (II)	1 (2.0)	1 (2.0)	6 (12.0)	0.037
Mean ± SD hemoglobin level drop, g/dl	1.09 ± 1.2	1.02 ± 0.7	2.50 ± 1.1	<0.001
No. refractory urinary retention (%)				
Early	3 (6.0)	1 (2.0)	1 (2.0)	0.442
Late	2 (4.0)	0	0	0.123

ICU Standard deviation; ICU Intensive care unit, GreenLEP Green laser enucleation of the prostate, PVP Photoselective Vaporization of the Prostate, OP Open Prostatectomy

Figure 1:



Conclusions: PVP and GreenLEP are associated with longer operative time but better post-operative outcomes than OP. However, regarding functional outcomes, PVP might be less effective than OP and GreenLEP in prostate glands over 80mL.

GreenLEP

- Disostruzione completa e anatomica
- Minore energia erogata
- Minori tempi operatori

- Adeguata per adenomi >60 cc
- Per pazienti «fit»

- Curva di apprendimento più lunga

Vaporizzazione

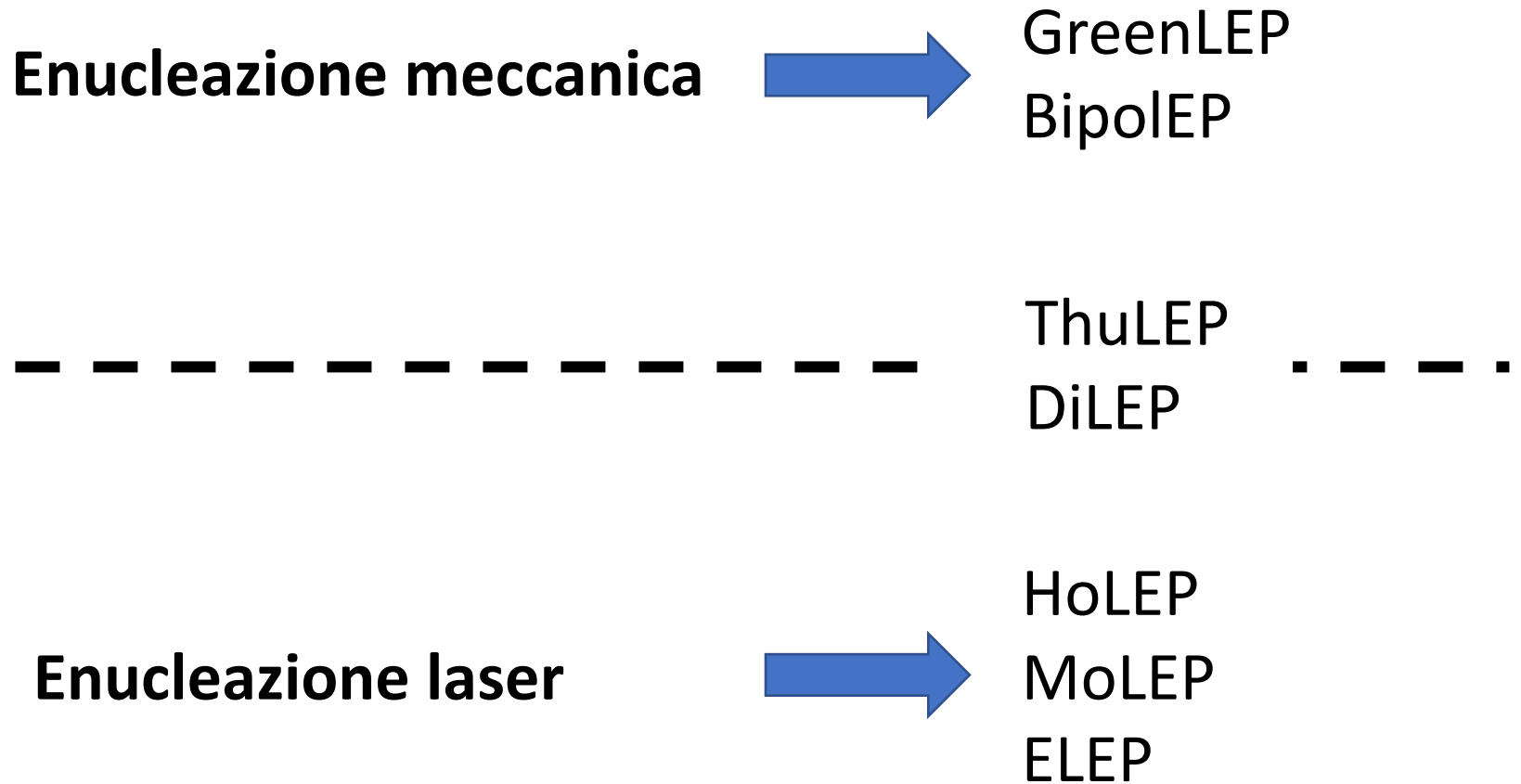
- Disostruzione «adattabile»
- Maggiore energia erogata
- Maggiori tempi operatori

- Per tutti gli adenomi
- Più indicata in pz fragili/anziani

- Procedura più semplice
- ...richiede pazienza

- Rischio necessità di ritrattamento

GreenLEP vs altre EEP



ATV

= enucleazione en-bloc per via smussa

↓ invasività

↑ sicurezza

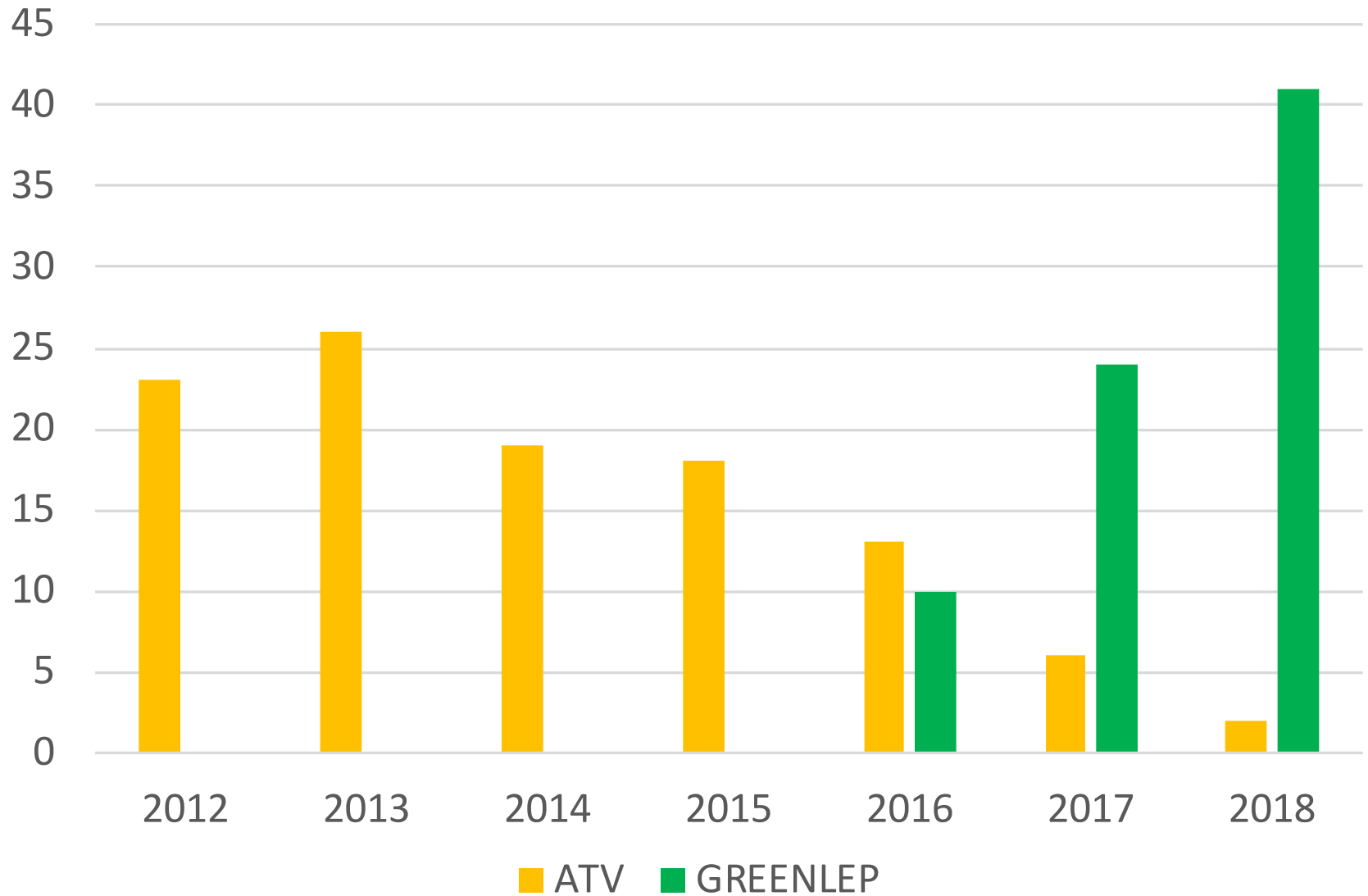
↓ tempo cv e degenza

= outcome lungo termine?



GreenLEP

ALBA 2012-2018



ATV

= enucleazione en-bloc per via smussa
↓ invasività
↑ sicurezza
↓ tempo cv e degenza
= outcome lungo termine?

GreenLEP

enucleazione anatomica
↑ identificazione piano capsulare
↓ energia
Side firing: facile distacco apice-sfintere
vaporizzazione opzionale
- conversione a PVP
- rifiniture
- procedure ibride

altre EEP

TURP

tecnica anatomica
↑ volume adenoma
↑ efficienza coagulativa
↓ tempo cv e degenza

↑ disostruzione
↓ energia
↓ tempi operatori
↓ ritrattamenti

PVP