are cardiovascular comorbidities or patients suffered of neurological bladder. 55 (28/27 H/Mgroups) patients were randomized preoperatively in a 1:1 fashion (2 Joule pulses at 50 Hz frequency) to HOLEP treatment (group A) or MOLEP treatment (group B) of prostate tissue. All the procedures were performed by a single experienced operator using the traditional 3 lobes technique. The primary endpoint is the evaluation of the difference in average treatment duration between the two procedures. Comparisons of means in the paired sample was performed with a two-tail T-test (Î ± power of 0.05 to observe a 10% difference in time of enucleation).
Results: Mean age was 70 in both groups. Average baseline volume of prostates were 92 and 95 ml in group A and B respectively. Comparison of the 2 modalities lead to a reduced time of enucleation for M (H/M:30.5/23 minutes;p = 0.03), time of treatment (H/M:52/46;p = 0.7) and time to hemostasis (H/M:5.5/4.6minutes; p = 0.28). Total energy for Haemostasis or enucleation was similar in both arms (p = 0.85 and 0.33 for the 2 comparisons). No bleeding was observed in both groups (p = 0.34). Decrease in Hb levels postoperatively was 0.99 and 1.08 in H and M arms (p = 0.69). Fiber consumption length was 2.97 mm and 1.87 mm in groups A and B (p = 0.05). Weight/energy ratio was similar in 2 arms (p = 0.78). Interestingly, weight/time ratio (grams of morcellated prostatic tissue/minute of enucleation) was favor in M group: 2.14 vs. 2.82, p = 0.32
Discussion: This ongoing phase 3b study of HOLEP vs. MOLEP in men with BPH is showing significant reduction in enucleation time, however demonstrating similar short-term outcomes in terms of total timing of treatment and hemostasis, energy used, bleeding (hematuria and postoperative Hb levels). There is, however, lower fiber consumption with MOLEP and a more efficient weight of enucleated tissue/time unit in the MOLEP group.

SC18 Comparison of perioperative and mid-term outcomes between thulium laser vaporization and vapoenucleation: A propensity score analysis

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Aim of the study: Thulium laser vapoenucleation (ThuVep) is considered equivalent to transurethral resection of prostate for treatment of benign prostatic obstruction. Coversely, thulium laser vaporization (Thuvap) is not yet considered comparable to the gold standard according to European Association of Urology Guidelines. We compared early and lates outcomes between ThuVep and ThuVap.
Materials and methods: Within our institutional database with prospective collected data we identified patients treated with ThuVep or ThuVap. We relied on inverse probability of treatment weighting (IPTW) to reduce the effect of inherent differences between ThuVep and ThuVap. Univariable and multivariable linear and logistic regression models (MLRM) were used.
Results: Between 2012 and 2018, we identified 692 patients treated with either ThuVep [442 (63.9%)] or ThuVap [250 (36.1%)]. Median follow-up was 44 months. Median International Prostatic Symptoms Score drop was 16. ThuVap patients had median higher preoperative maximum flow (8 vs 8.6 ml/sec; p = 0.04) and were more frequently in anticoagulant or antiplatelet therapy (29.5 vs 20.3; p = 0.002). In MLRMs testing for surgical technique predictors anticoagulant or antiplatelet therapy achieved indipendent predictor status for higher ThuVap rates (OR: 1.49; p = 0.001). However, no difference was found in early (OR: 0.90; p = 0.08) and late (OR: 0.85; p = 0.2) complication rates between Thuvap and Thuvep. Finally, Thuvap did not achieved indipendent predictor status for lower IPSS drop. Results were confirmed after IPTW adjustment.
Discussion: Based on our results no statistically significant difference exist between ThuVap and ThuVep in early and late complication rates. Moreover, IPSS drop was similar in the two groups.

SC19 Operative profile, safety and functional outcomes after Greenlight laser prostate surgery: Results from multicenter italian cohort analysis

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Aim of the study: In the two past decades, Greenlight laser therapy has been considered a valid alternative for the treatment of lower urinary tract symptoms (LUTS) associated to benign prostatic hyperplasia/benign prostatic obstruction (BPH/BPO). However, the debate on the effectiveness of laser therapy compared to conventional techniques is still open. Aim of our study is to analyze and describe the use of GreenLight laser prostate surgery in Italy, with particular regard to the surgical techniques performed and and the surgical and functional outcomes at mid term follow-up.
Materials and methods: From March 2012 to July 2018, patients who underwent GreenLight laser prostate surgery for LUTS due to BPH/BPO from 19 Italian centers were included. The following parameters were evaluated in the population: age, prostate volume, prostate adenoma volume, PSA tot, Qmax at uroflowmetry (UFM),International Prostatic Symptoms Score (IPSS), previous therapy for LUTS, use of anticoagulant/anti-aggregant. We recorded also kind of anesthesia, mean laser time (min), mean irradiation time (min), TURP conversion/completion rate, post-operative day of catheter removal, postoperative acute urinary retention (AUR), hospital stay, variation of haematocrit (Ht) and haemoglobin levels (Hb). Early complications has been classified according to the Clavien-Dindo classification, the re-operation rate within 30 days and after 30 days, the late complications and the Patient Global Impression of Improvement were also collected. Changes over time in terms of blood loss and functional outcomes (IPSS and Qmax at the UFM at 6 and 12 months) were tested with Student's test for paired samples. We assumed $p \leq 0.05$ as level of statistical significance.
Results: Overall, 1077 were enrolled in the study were, 554 (56.4%) treated with standard vaporization and 523 (48.6%) with anatomical vaporization. Complete population characteristics and surgical details are described in Table 1. The Student's T Test for paired samples showed no statistically significant differences in terms of reduction of Ht preoperative vs Ht postoperative (42.80 ± 3.911 vs 39.93 ± 5.359 CI 95% p = 0.3) and pre-intervention and post-intervention Hb levels (14.28 ± 1.464 vs 13.72 p = 0.35). Compared with the pre-operative Qmax (8.60 ± 2.640), the 6 and 12 month UFM showed a significant improvement [19.56 ± 6.291, p < 0.05 and 19.99 ± 5.923 p < 0.05]. In terms of IPSS variation, compared to the baseline level (22 ± 5.516) the 6 and 12 month follow up confirmed a significant reduction (8.01 ± 4.414 p < 0.05 and 5.81 ± 4.129 p < 0.05). Postoperative complications have been CD0, CD1, CD2, CD3, CD4 in 33.0%,35.3%, 2.9%, 0.3%, and 0.6%.

	Median IQR	Standard Deviation
Age (year)	69,00 (64,00-76,00)	8,269
Follow-up duration (months)	18,00 (12,00 -26,00)	11,925
Prostatic volume TRUS (ml)	60,00 (45,00-75,00)	29,083
Prostatic adenoma volume TRUS (ml)	36,00 (25,00-50,00)	22,286
Energy supplied (Kj)	220,00 (144,42-330,00)	148,78
Irradiation time (min)	25,00 (18,00-36,00)	14,020
Operating time (min)	60,00 (42,00-75,00)	23,046
Post-op day CB removal (d)	1,00 (1,00-2,00)	1,474
Day of definitive removal of CB (d)	2,00 (1,00-2,00)	2,100
Post-op day of discharge (d)	2,00 (1,00-3,00)	1,64
Ht pre	43,00 (41,00-45,00)	3,911
Hb pre	14,00 (14,00-15,00)	1,464
Ht post	40,00 (38,00-43,00)	5,359
Hb post	14,00 (13,00-15,00)	2,893
PSA-pre (ng/ml)	3,00 (2,00-4,00)	4,051
PSA-post 3 months (ng/ml)	1,00 (1,00-2,00)	1,456
PSA-post 6 months (ng/ml)	1,00 (1,00-2,00)	1,375
PSA-post 12 months (ng/ml)	1,00 (1,00-2,00)	1,460
UFM pre (ml/s)	8,00 (7,00-10,00)	2,640
UFM post 6 months (ml/s)	19,00 (16,00-22,00)	6,291
UFM post 12 months (ml/s)	19,00 (16,00-22,00)	5,923
IPSS pre	23,00 (19,00-26,00)	5,516
IPSS post 6 months	8,00 (5,00-10,00)	4,414
IPSS post 12 months	6,00 (3,00-8,00)	4,129
Patient Global Impression of Improvement	1,00 (1,00-2,00)	0,887

	N	Percentage (%)
Patients enrolled	1077	-
Previous BPH therapy		
No therapy	185	17,2
a-blockers	482	44,8
5 ARI	58	5,4
a-blockers + 5 ARI	286	26,6
Phytotherapy		
No	789	73,3
Yes	108	10,0
No anticoagulant/antiplatelet therapy	607	56,4
Anticoagulant/antiplatelet therapy	470	43,6
Anesthesia		
Spinal/peridural	856	79,5
General	152	14,1
Urethral stricture		
No pre-existing	874	81,2
Penile urethra	46	4,3
Bulbar urethra	22	2,0
Membranous urethra	9	0,8
No catheter after surgery	826	76,7
Conversion or completion with TURP	34	3,2
Postoperative removal bladder catheter		
1st post-op day	543	50,4
2nd post-op day	310	28,8
3rd post-op day	143	13,3
Acute urinary retention (AUR)		
Not occur	835	77,5
Occur	87	8,1
The Length hospital stay (days)		
2	498	46,2
1	294	27,3
3	164	15,2
4	48	5,0
Postoperative complications (Clavien Dindo classification)		
No complication	355	33,0
CD 1	380	35,3
CD 2	31	2,9
CD 3rd	3	0,3
CD 3b	3	0,3
CD 4	7	0,6
Blood transfusion	4	0,4
Reintervention rate or within 30 days	6	0,6
Reintervention rate over 30 days	31	2,9

Discussion: To the best of our knowledge, this is one of the most numerous and with a longer follow-up surgical series of Green Light Laser vaporization. This technique must be considered as a safe and effective alternative in the treatment of secondary LUTS to BPH.

SC20 No matter for prostate sizes: Multicentric Italian Green Light photoselective vaporization study

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Aim of the study: GreenLight laser photoselective vaporization of the prostate (PVP) is a safe and effective procedure to treat Benign Prostatic Hyperplasia (BPH). Long term results and advantages about large prostate are still under evaluation.

Materials and methods: In a multi-institutional prospectively collected database, all consecutive patients who underwent standard or anatomical PVP between September 2011 and October 2017 were retrospectively reviewed. Inclusion criteria are a minimum follow up period of 12 months, no history of prostate cancer, neurogenic bladder disease or previous prostate surgery. Patients who underwent GreenLEP or contemporary ancillary procedures were excluded. Patients were divided in two groups based on prostate volume. Pre- and peri- operative data as well as post-operative results and complications were recorded after 3, 6, 12 months and then annually.

Results: A total of 1031 patients were eligible for the study analysis. 951 of these had a prostate volume ≤100 cc (G1) and 80 patients had a prostate volume >100 cc (G2). Patients characteristic are summarized in Table 1. No statistical differences were observed between the two groups in terms of pre-operative data. Median follow up period was 24.5 months (IQR 17.5–34.2) and 16 months (IQR 12.00–25.00) in G2 and G1 group, respectively ($p < 0.001$). No difference were found in terms of catheterization time, post-operative stay and post-operative acute urine retention. G2 patients required longer operative time (80 versus 55 minutes, $p < 0.001$), lasing time (44 versus 25 minutes, $p < 0.001$), and higher energy used (401.5 versus 210 kJ, $p < 0.001$) but lower energy density (3.1 versus 4 kJ/mL, $p < 0.001$). Patients with a large prostate had a higher risk of developing early (51.2 versus 36.2%, $p = 0.011$) and late complications (22.5 versus 13%, $p = 0.024$) and early urge/incontinence symptoms (45 versus 29.3%, $p = 0.010$). According to Clavien-Dindo classification, the most common early complications were Grade I in both groups (92.7% in G2 and 88.1% in G1). No statistically significant differences were found for the Qmax parameter (19.0 versus 20 mL/s, $p = 0.292$) and IPSS results (5 versus 5.5, $p = 0.157$) at 12 months between G1 and G2, respectively. At 12 months Qmax increased by 118.3% in G1 and 150% in G2. Patient Global Impression of Improvement (PGI-I) did not differ between the two groups: 78.9% and 77.4% of patients in the G1 and G2 groups, respectively, reported a valuable improvement (1–2). The re-intervention rate in G2 group was 3.8% versus 2.3% in G1.

Variable	Overall (n=1031)	Prostate volume ≤100cc (n=951)	Prostate volume >100cc (n=80)	*p-value*
Age (years)	69.0 (64.0-76.0)	69.0 (64.0-76.0)	69.0 (65.0-76.0)	*0.360[b]*
Prostate volume (TRUS) (mL)	60.0 (45.0-75.0)	55.0 (45.0-70.0)	120.0 (110.0-144.8)	*<0.001[b]*
BPH/LUTS therapy (unknown = 66)				*0.053[a]*
None	164 (15.9)	146 (15.4)	18 (22.5)	
Alpha-blockers	460 (44.6)	420 (44.2)	40 (50.0)	
5-ARI	56 (5.4)	52 (5.5)	4 (5.0)	
Combination	285 (27.7)	267 (28.0)	18 (22.5)	
Unknown	66 (6.4)	66 (6.9)	0 (0.0)	
Antiplatelet/anticoagulant therapy				*0.139[a]*
None	578 (56.1)	532 (55.9)	46 (57.5)	
Antiplatelet	314 (30.5)	294 (30.9)	20 (25)	
Anticoagulant	91 (8.8)	79 (8.3)	12 (15)	
Unknown	48 (4.7)	46 (4.8)	2 (2.5)	
Indwelling catheter history (unknown:81)	168 (16.3)	142 (14.9)	26 (32.5)	*<0.001[a]*
ASA score				*0.141[a]*
1-2	473 (45.9)	440 (46.3)	33 (41.2)	
3-4	232 (22.5)	218 (22.9)	14 (17.5)	
Unknown	326 (31.6)	293 (30.8)	33 (41.2)	
Surgical technique				*0.009[a]*
Anatomic PVP	481 (46.7)	432 (45.4)	49 (61.3)	
Standard PVP	550 (53.3)	519 (54.6)	31 (38.8)	
Catheterization time (days)	1 (1-2)	1 (1-2)	1 (1-2)	*0.626[b]*
Acute urine retention	84 (8.1)	81 (8.5)	3 (3.8)	*0.199[a]*
Clavien-Dindo classification of early complication*				*0.291[a]*
I	341 (88.6)	303 (88.1)	38 (92.7)	
II	31 (8.1)	30 (8.7)	1 (2.4)	
IIIa	3 (0.8)	3 (0.9)	0 (0)	
IIIb	3 (0.8)	3 (0.9)	0 (0)	
IVa	7 (1.8)	5 (1.5)	2 (4.9)	
Overall late complications	142 (13.8)	124 (13.0)	18 (22.5)	*0.024[a]*
Patient global impression of improvement				*0.139[a]*
1	510 (49.5)	465 (48.9)	45 (56.2)	
2	302 (29.3)	285 (30)	17 (21.2)	
3	70 (6.8)	69 (7.3)	1 (1.2)	
4	24 (2.3)	23 (2.4)	1 (1.2)	
5	8 (0.8)	8 (0.8)	0 (0)	
6	4 (0.4)	3 (0.3)	1 (1.2)	
7	1 (0.1)	1 (0.1)	0 (0)	

Discussion: In the midterm follow-up, Greenlight PVP guarantee the same results in prostate volumes >100 cc. Early and late complications are more frequent in large prostate.