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MP-2.1

Thulium fiber laser compared to holmium:YAG laser with Moses technology for enucleation of the prostate —a prospective study

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Introduction: Holmium laser enucleation of the prostate (HoLEP) is a long-standing surgical treatment for benign prostatic hyperplasia (BPH). The thulium fiber laser is the newest laser currently available and possibly offers better hemostatic properties; however, there is a paucity of data on outcomes in BPH treatment. This prospective study aimed to compare the safety profile, as well as the intraoperative and clinical outcomes between HoLEP with Moses technology (m-HoLEP) and thulium fiber laser enucleation of the prostate (TFLEP).

Methods: Twenty patients were included in this prospective study after obtaining institutional review board approval. Two experienced surgeons were involved in this study: one performed 10 m-HoLEP procedures, while the other performed 10 TFLEP procedures. Demographic information of patients was collected, as well as intraoperative variables and complications. Statistical analyses were performed on SPSS Statistics Version 27.

Results: TFLEP and m-HoLEP patients were similar in age (72.3 vs 75.4 years, respectively, p=0.45) and prostate size (131.3 vs 123.3 cc, respectively, p=0.67). There was no difference in American Society of Anesthesiologists (ASA) score (p=0.50) and anticoagulant usage (p=0.54) between both groups. The duration of morcellation was similar in both groups (p=0.44). Hemoglobin reduction was similar in m-HoLEP compared to TFLEP (18.0 vs 17.3 g/L, respectively, p=0.67). Length of hospitalization was comparable in both study arms (p=0.16). There was no difference in mean duration (p=0.23) or rate (p=0.54) of enucleation between both laser modalities. Complications, such as urosepsis, re-admission, and transfusion, did not vary between m-HoLEP and TFLEP groups.

Conclusions: Although preliminary, the results of this study demonstrate similar perioperative and clinical outcomes for TFLEP and m-HoLEP. This study is ongoing, with a total recruitment of 50 per arm planned and an anticipated followup period of one year.

MP-2.3

A Canadian population experience: Total testosterone levels do not correlate with lower urinary tract symptom severity

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Introduction: Lower urinary tract symptoms (LUTS) and hypogonadism both affect the aging male. The correlation between androgen levels, prostate volume, and LUTS remains to be fully elucidated. The primary objective of this study was to explore the presence and severity of LUTS and their correlation with total testosterone (TT) levels in a Canadian population.

Methods: Data were collected from consented adult males (n=1684) who participated in a public health awareness event between 2007 and 2018. LUTS were evaluated using the International Prostate Symptom Score (IPSS) questionnaire. Body mass index (BMI), lipid profile, prostate-specific antigen (PSA), and TT were measured. Men <45 years were excluded. Men were categorized depending on TT level (<230 ng/dL, 230–346 ng/dL, and ≥346 ng/dL) and IPSS category (mild [0–7], moderate [8–19], and severe [20–35] symptoms). Data were analyzed using statistical tests in GraphPrism 8.

Results: Mean age was 55.5 years with a mean BMI of 27.9 (n=1654), PSA of 1.8 ng/ml (n=1404), and TT of 334 ng/dL (n=1654). Mild LUTS were found in 52.6% of participants (n=714), while 38% of participants (n=516) had moderate LUTS and 9.4% had severe LUTS (n=127). IPSS category was found to correlate with age (p<0.0001) and PSA value (p<0.0001), as well as low-density lipoproteins (LDL) levels (p=0.0145). In men with mild LUTS, 20% had low TT (<230 ng/dL). Similarly, 19% of men with moderate LUTS and 21% of men with severe LUTS had low TT. When comparing IPSS category with TT levels of <230 ng/dL and ≥346 ng/dL, no significant difference was identified (p=0.6570). While 9.4% of men experienced severe LUTS, only 22% of these men were on medical therapy for their symptoms.

Conclusions: In this cross-sectional Canadian study, we identify that among men ≥45 years, age, PSA, and LDL levels, but not TT levels, correlate with IPSS category. In our population, 78% of men reporting severe LUTS were not under specific treatment. This highlights the importance of assessing LUTS to properly identify patients with undermined quality of life.

MP-2.5

Effect of surgeon volume and facility volume on outcomes of benign prostatic hyperplasia surgery

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Introduction: Surgical volume is intimately associated with better operative outcomes, both at the surgeon and facility level. However, there is limited evidence on such a relationship for transurethral resection of the prostate (TURP) and laser procedures for benign prostatic hyperplasia (BPH). As such, we report the effect of surgeon and facility volume on outcomes of TURP and laser treatment of BPH. We also present demographic predictors of treatment at high-volume facilities.

Methods: We used New York State Department of Health Statewide Planning and Research Cooperative System (SPARCS) data. We included adult patients who underwent TURP or laser in the outpatient setting between January 2005 and December 2016. Average annual surgeon and facility combined volumes of TURP and laser procedures were calculated and broken down by tertile (low-volume, medium-volume, and high-volume). Adjusting for baseline demographics, the effect of volume on short-term outcomes (30-day and 90-day re-admission) was examined using mixed-effect logistic regression models with random intercept at the facility level. Cox proportional hazard models with a robust variance estimator accounting for patients' cluster at the facility level were used for long-term outcomes (stricture and reoperation).

Results: We included 34 444 patients. Among those, 21 074 (61.2%) underwent laser procedures and 13 370 (38.8%) underwent TURP. Both higher facility volume and surgeon volume were associated with lower odds of re-admission. Treatment at high-volume facilities was also associated with lower hazards of developing stricture. Outcomes by surgeon and facility volume adjusting for patient demographics are presented in

MP-2.5. Table 1. Adjusted short-term and long-term outcomes by surgeon volume and facility volume

	Readmission 30-day: OR (95% CI)	Readmission 90-day: OR (95% CI)	Reoperation long-term: HR (95% CI)	Stricture long-term: HR (95% CI)
Facility volume				
Low	Ref	Ref	Ref	Ref
Medium	0.85 (0.75, 0.97)*	0.85 (0.75, 0.96)*	0.93 (0.79, 1.11)	0.84 (0.54, 1.30)
High	0.75 (0.63, 0.88)**	0.77 (0.65, 0.90)**	0.89 (0.76, 1.04)	0.67 (0.48, 0.94)*
Surgeon volume				
Low	Ref	Ref	Ref	Ref
Medium	0.94 (0.86, 1.02)	0.94 (0.87, 1.02)	1.04 (0.92, 1.16)	0.97 (0.80, 1.17)
High	0.90 (0.82, 0.99)*	0.92 (0.84, 1.00)*	1.01 (0.86, 1.20)	1.04 (0.64, 1.69)

*p<0.05. **p<0.01.

Table 1. High-volume surgeons operating at high-volume facilities had better short-term outcomes and lower hazards of re-operation compared to high-volume surgeons working at low-volume facilities (all pint<0.05). Statistically significant predictors of treatment at high-volume facilities included Medicaid insurance (odds ratio [OR 0.44], 95% confidence interval [CI] 0.38–0.51, p<0.001) and white race (OR 1.62, 95% CI 1.52–1.73, p<0.001).

Conclusions: Higher surgeon and facility surgical volume are associated with lower odds of re-admission, with higher facility volume also associated with lower hazards of developing strictures. There are interactions between surgeon volume and facility volume suggesting that the effect of surgeon experience on outcomes is modified by their facility's volume. High-volume surgeons at high-volume facilities have the best short-term outcomes and lowest re-operation rates. Medicaid insurance and Black race were associated with higher odds of treatment at low-volume facilities, highlighting disparities in access to high-volume BPH centers.

MP-2.6

Six-month outcomes in a cohort of patients undergoing same-day trial of void using standard vs. MOSES holmium laser enucleation of the prostate for benign prostatic hyperplasia: A single-center experience

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Introduction: MOSES™ technology may optimize energy delivery, resulting in more efficient hemostasis and enhanced visibility during holmium laser enucleation of the prostate (HoLEP). We sought to compare perioperative and postoperative outcomes and assess the safety and feasibility of same-day trial of void (TOV) in patients who underwent standard vs. MOSES HoLEP.

Methods: We retrospectively reviewed all patients who underwent standard (100 W) vs. MOSES (120 W) HoLEP with same-day catheter removal four hours postoperatively from August 2018 to September 2021. Patient demographics, intraoperative parameters, and postoperative outcomes were analyzed. Multivariate logistic regression analyses were used to identify independent predictors of enucleation time.

Results: Of the 90 patients included, 28 underwent standard HoLEP, while 62 had MOSES HoLEP. On unadjusted analyses, MOSES technology had significantly shorter enucleation time (p<0.001), hemostasis time (p<0.001), morcellation time (p=0.003), and lower energy use (p<0.001) (Table 1). Using the logistic regression model, we found that using MOSES technology (odds ratio [OR] 0.03, 95% confidence interval [CI] 0.007–0.19, p<0.001), lower preoperative prostate-specific antigen (OR 1.25, 95% CI 1.01–1.55, p=0.03), and smaller prostate size (OR 1.06, 95% CI 1.02–1.09, p<0.001) were independent predictors of enucleation time. Upon unadjusted analyses, history of preoperative retention was the only significant factor affecting failed same-day TOV (p=0.04). There was no difference in the postoperative functional outcomes between both groups.

Conclusions: Our results demonstrate that MOSES technology enhances enucleation efficiency and has excellent hemostatic potential with no difference in the functional outcomesfor up to six months. Same-day TOV following HoLEP is feasible and safe.

MP-2.7

GreenLight photovaporization of the prostate in high-medical-risk patients: An analysis of the Global GreenLight Group (GGG) database

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Introduction: Previous analyses of the safety and effectiveness of GreenLight photoselective vaporization of the prostate (PVP) in high-medical-risk (HMR) patients were limited by their small sample size and the ability to adjust for important confounders. We sought to characterize the adjusted outcomes of GreenLight PVP in HMR patients using data from the largest international database.

Methods: Data were obtained from the Global GreenLight Group (GGG) database, which pools data of eight high-volume, experienced surgeons from a total of seven international centers. All men with established benign prostatic hyperplasia who underwent GreenLight PVP using the XPS-180 W system between 2011 and 2019 were eligible for the study. HMR patients were defined as patients with American Society of Anesthesiologists score of III or greater and were compared to non-HMR patients. Analyses were adjusted for patient age and prostate volume.

Results: In the HMR group, patients, on average, were older and had smaller prostates than the non-HMR control group. Preoperatively, HMR patients had greater postvoid residual (PVR) and worse quality of life (QoL). Compared to non-HMR patients, transfusions occurred more frequently (2.6% vs. 0.14%, p<0.01), and the odds of readmission were

MP-2.6. Table 1. Intraoperative parameters, perioperative, and postoperative outcomes for both groups

		Standard HoLEP (28 patients)	MOSES™ HoLEP (62 patients)	p
Mean age, yrs		71.5+7	71.4+7	0.9
Indication	Urine retention	6	12	0.7
	LUTS/ Hematuria	22	50	
Mean prostate volume, cc		115.6+38.5	109.5+30.8	0.4
Mean prostate resected weight, g		82.3+41.2	78.5+29.1	0.6
Mean enucleation time, min		63.4+17.8	47+12.5	0.0001
Mean hemostasis time, min		7.1+2.6	3+1.1	0.0001
Mean morcellation time, min		14.1+7	10.2+5	0.003
Mean enucleation efficiency, g/min		1.3+0.4	1.7+0.6	0.001
Mean energy, KJ		116.7+37.6	84.9+26.9	0.0001
Successful TOV	Yes	23	58	0.1
	No	5	4	
Readmission	Yes	3	1	0.08
	No	25	61	
Mean decrease in Hemoglobin, g		14.7+5	10.7+4.5	0.0003
Mean preoperative PSA, ng/ml		5.2+3.5	5.5+3.1	0.6
Mean postoperative PSA, ng/ml		0.7+1	0.6+0.4	0.5
Mean percentage reduction in PSA		85+16	87+7	0.4
Median preoperative IPSS		24 (22–28)	25 (22–28)	0.9
Median IPSS at 1 month		10 (4.75–13)	8 (6–11)	0.6
Median IPSS at 3 months		6.5 (4–8)	4 (2–6)	0.07
Median IPSS at 6 months		4 (3–5)	3 (1.5–4)	0.1
Mean preoperative Qmax, ml/sec		9+3	8.3+3	0.3
Mean Qmax at 1 month, ml/sec		22.7+5.6	22.3+6.5	0.7
Mean Qmax at 3 months, ml/sec		22.6+7.7	24.7+7.4	0.2
Mean Qmax at 6 months, ml/sec		23.1+7.3	22.1+5.9	0.4
Mean preoperative PVR, cc		219+146.8	243.3+143.4	0.4
Mean PVR at 1 month, cc		42.3+26.9	52.8+47.2	0.2
Mean PVR at 3 months, cc		45+41	40+39	0.5
Mean PVR at 6 months, cc		37.5+20.4	28+20	0.2
Median preoperative QoL		5 (4–6)	5 (4–5.3)	0.5
Median QoL at 1 month		2 (1–4)	2(1–3)	0.9
Median QoL at 3 months		1 (0–3)	1 (0–2)	0.2
Median QoL at 6 months		1 (0–1)	1 (0–1)	0.9

elevated (odds ratio [OR] 2.0, 95% confidence interval [CI] 1.4–2.8, p<0.01)] among HMR patients. Twelve months postoperatively, HMR patients experience greater improvement in QoL than the control group (+0.54, 95% CI 0.07–1.0, p=0.02)]. PVR also decreased 93.1 ml more in HMR than in non-HMR patients after 12 months (95% CI 33.6–152.6, p<0.01). Prostate-specific antigen and maximal flow rate change did not differ significantly between both study arms.

Conclusions: We found that GreenLight PVP is safe and effective in improving functional outcomes in higher-risk patients with severe systemic disease. Though absolute risks remain low, GreenLight PVP is associated with higher odds of transfusion and readmission in the high-risk cohort. The findings of our study reaffirm current guidelines that propose PVP as a viable treatment option for HMR patients.

MP-2.9

Comparative analysis of MOSES technology vs. novel thulium fiber laser for transurethral enucleation of the prostate: A single-institution study

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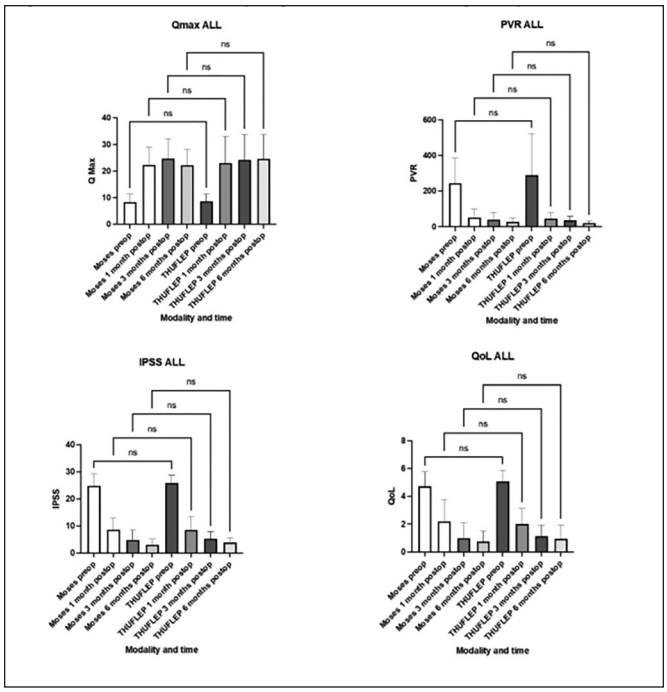
Introduction: We aimed to compare the efficacy and safety of the thulium fiber laser (TFL) vs. MOSES™ technology for endoscopic enucleation of the prostate in men with benign prostatic hyperplasia.

Methods: We retrospectively reviewed prospectively collected data of patients who underwent transurethral enucleation of the prostate by a single surgeon using MOSES or TFL technologies from August 2020 to September 2021. Preoperative and intraoperative profiles, as well as postoperative outcomes, were compared. Statistical analyses were performed using JMP Pro®16 software.

Results: Of the eighty-two patients included in the study, 62 underwent prostate enucleation using MOSES and 20 with TFL technology. There was no significant difference in the preoperative characteristics of both



MP-2.9. Figure 1. Functional outcomes comparing MOSES™ to TFL technologies for prostate enucleation.

MP-2.9. Table 1. Operative parameters comparing MOSES™ to TFL technologies in prostate enucleation

	MOSES™ (62 patients)	TFL (20 patients)	p
Enucleation time, min (median/IQR)	46.5 (40–54)	61.5 (55–68.7)	<0.001
Hemostasis time, min (median/IQR)	3 (2–4)	5 (5–6.7)	<0.001
Morcellation time, min (median/IQR)	10 (6.7–12)	15 (10.2–22.7)	<0.001
Laser energy, KJ (median/IQR)	79.7 (65.4–99.7)	78.4 (67.8–95.3)	0.75
Prostate enucleated weight, cc (median/IQR)	70 (60–90)	79 (58.5–90.8)	0.51

groups. Men who underwent TFL had longer median enucleation time, hemostasis time, and morcellation time (p<0.001) compared to MOSES (Table1). Postoperative functional outcomes, including maximal flow rate, postvoid residual, International Prostate Symptom Score, and quality of life were comparable between both groups at one, three, and six months (Figure 1). Moreover, the incidences of stress incontinence (p=0.97) and urge incontinence (p=0.73), as well as readmission rates (p=0.1) were comparable between the groups.

Conclusions: To the best of our knowledge, this is the first study comparing MOSES and TFL laser technology in prostate enucleation. Both techniques provided a satisfactory safety and efficacy profile, with comparable postoperative outcomes; however, MOSES technology demonstrated superiority in terms of shorter overall operative time.

MP-2.10

Functional outcomes of Greenlight PVP 180W XPS in patients with larger (>80 ml) prostates: An analysis of over 3000 men in the Global Greenlight Group (GGG) database

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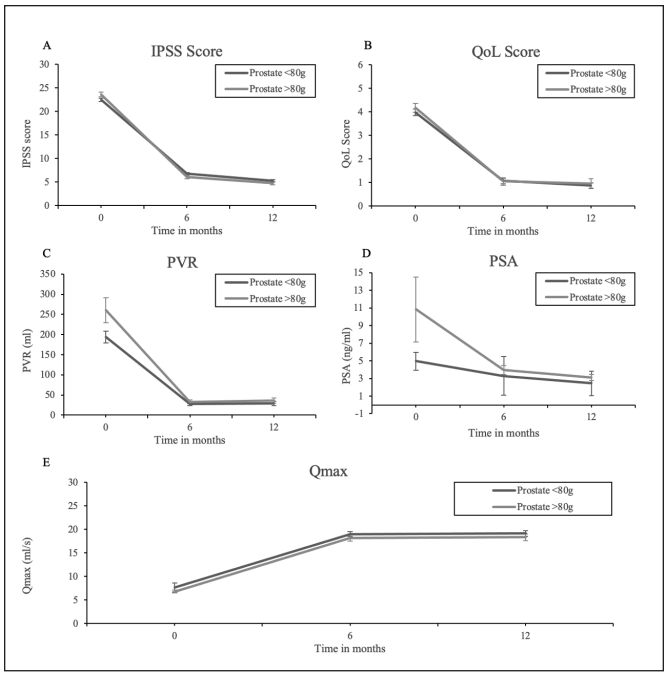
Introduction: GreenLight photoselective vaporization of the prostate (PVP) has been shown to be a safe and effective treatment option for benign prostatic hyperplasia (BPH). To date, there is a paucity of information in the literature quantifying the outcomes of PVP for larger prostate volumes (≥80 cc). Using a large, international database, this study aimed to investigate the impact of large prostate volumes on operative outcomes following PVP.

Methods: Data were obtained from the Global Greenlight Group database, which pools data of eight high-volume and experienced surgeons from seven international centers. All men with established BPH who underwent GreenLight PVP using the XPS-180W system between 2011 and 2019 were eligible for the study. Patients were assigned to one of two



MP-2.10. Figure 1. Outcomes over time **(A)** IPPS ; **(B)** QoL score; **(C)** PVR; **(D)** PSA; **(E)** Qmax.

MP-2.10. Table 1. Baseline patient demographics

	Prostate volume <80 g (n=2239)	Prostate volume >80 g (n=1187)	p
Age, years, mean (SD)	69.79 (8.95)	70.89 (8.63)	**<0.01**
TRUS volume, ml, mean (SD)	51.82 (14.88)	111.92 (34.74)	**<0.01**
ASA score, n (%)			**0.03**
1	258 (20.4)	158 (23.2)	
2	623 (49.2)	354 (51.9)	
3+	384 (30.4)	170 (24.9)	
IPSS, mean (SD)	22.48 (6.45)	23.64 (7.02)	**<0.01**
QOL, mean (SD)	3.98 (1.70)	4.17 (1.82)	0.11
PSA, ng/dl, mean (IQR)	2.5 (1.34–4.21)	5.4 (3.3–8.86)	**<0.01**
PVR, ml, mean (IQR)	110 (25.5–247.5)	150 (50–342.5)	**<0.01**
Qmax, ml/s, mean (IQR)	6.3 (4.4–9)	6 (4–9)	0.08
5-ARI use, n (%)			**<0.01**
Yes	564 (25.2)	266 (22.4)	
No	1274 (56.9)	625 (52.7)	
Unknown	401 (17.9)	296 (24.9)	
α-blocker use, n (%)			**<0.01**
Yes	1377 (61.5)	678 (57.1)	
No	451 (20.1)	210 (17.7)	
Unknown	411 (18.4)	299 (25.2)	

groups based on their prostate size (≥80 cc and <80 cc). Analyses were adjusted for patient age and the presence of median lobe.
Results: A total of 3426 men met the inclusion criteria; 34.6% (n=1187) patients had a large prostate size. Baseline age and prostate volume were significantly different between the groups (Table 1). In adjusted analyses, the operative and lasing time of patients from the ≥80 cc group was of 35.86 (95% confidence interval [CI] 32.99–38.72, p< 0.01) and 22.44 (95% CI 20.64–24.24, p<0.01) minutes longer than the <80 cc group, respectively. There were no significant differences between groups in hospital length of stay, postoperative hematuria, and transfusion rates. On analysis, men with a prostate volume ≥80 cc had significantly lower six-month and 12-month International Prostate Symptom Score (IPSS) and IPSS change from baseline (p<0.01). However, there were no differences in IPSS score change across groups on adjusted analysis (Figure 1). In addition, men with prostate volumes ≥80 cc had similar postoperative outcomes at six and 12 months in maximal flow rate, quality of life score, and prostate-specific antigen levels.
Conclusions: Our findings suggest that Greenlight PVP using XPS-180W is a safe and effective alternative for patients with prostates ≥80 cc, with outcomes similar to those with prostate volumes <80 cc.

MP-2.11
Holmium laser enucleation of the prostate outcomes in neurological disease states

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Introduction: There is a paucity of literature examining lower urinary tract symptoms (LUTS) and urinary tract infection (UTI) rates in patients with neurological disease states undergoing holmium laser enucleation of the prostate (HoLEP). We describe our experience in these patients at a high-volume center. Our primary objective was to determine if HoLEP affected UTI rates.
Methods: We prospectively enrolled 50 patients with neurological diseases: (Parkinson's [PD], myasthenia gravis [MG], cerebrovascular accident [CVA], transient ischemic attack [TIA], traumatic brain injury [TBI], dementia [D], brain/spine tumors [BT], diabetes with neuropathy neurogenic bladder [DM], and other) undergoing HoLEP from March to September 2021 into our clinical registry. Continuous variables were expressed as mean (range) with heteroscedastic two-tailed t-test and Chi-squared (p<0.05).
Results: Fifty patients were included: CVA: 13, DM: 11, D: 7, TIA: 5, PD; 4, MG: 3, BT: 3, TBI: 2, other: 2. The average preop prostate size was 128 mL (range 23–400), intraoperative specimen weight 77 g (5–206), and body mass index 27 (19–40). Preoperative retention was present in 35/50 (70%) with an average preoperative catheter duration of 83 days (range 7–456). Within the three months preoperatively, 28/50 (56%) had ≥1 urinary tract infection (UTI), which decreased to 6/50 (12%) post-HoLEP (p<0.001). The average preoperative UTI rate was 0.86/3 months (0–5), which was reduced to 0.12/3 months (0–1) (p<0.001). Same-day catheter removal occurred in 30/50 (60%), with 4/30 (13%) failing. There were 12/50 (24%) postoperative emergency department visits with seven admitted (five non-urological etiology). Only 3/50 (6%) patients used catheters/clean intermittent catheterization at three months (p<0.001). Urinary incontinence in any form remained in 17/50 (34%) at three months. Overall, 90-day complication rate was 34% (I: 6, II: 6, IIIa: 3, IIIb: 1, IVa: 1, IVb: 0, V: 0).
Conclusions: In this complex heterogenous cohort, HoLEP reduced indwelling catheter and three-month UTI rates with a 4% Clavien-Dino ≥IIIb complication rate. However, urinary incontinence rates and inability to void at three months were higher than historically observed in patients without neurological diseases.

MP-2.12
Functional and surgical outcomes of Aquablation in elderly men

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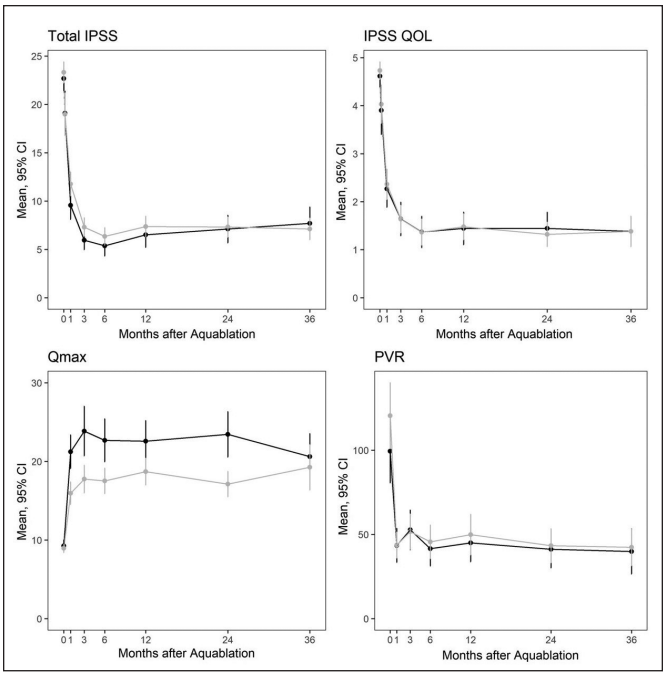
Introduction: As benign prostatic hyperplasia (BPH) is an age-related process, growing interest in surgical management for elderly men has emerged. Recently, Aquablation was approved for treatment of BPH-associated lower urinary tract symptoms (LUTS). This novel technology uses robotic ultrasound-guided and surgeon-controlled waterjet resection to accurately target prostate tissue. We assessed the differences in functional and surgical outcomes between elderly and young men undergoing Aquablation for LUTS/BPH.
Methods: We retrospectively assessed prospectively collected patient data from the pivotal WATER (NCT02505919) and WATER II (NCT03123250) clinical trials reporting safety and efficacy of Aquablation in the treatment of LUTS/BPH in men 45–80 years old with a prostate between 30 cc and 80 cc, and 80 cc and 150 cc, respectively. Baseline demographics and clinical variables were carefully recorded in an independently monitored database. Men ≥65 years old were defined as elderly while men <65 years old were defined as young.
Results: Of 217 patients included, 83 (38.2%) were young men and 134 (61.8%) were elderly men. Mean age (standard deviation [SD]) was 59.3 (±3.4) years and 71.2 (±4.2) years for young and elderly men, respectively. Baseline demographics and clinical variables were similar for both cohorts (Table 1). At three years of followup, compared to baseline, elderly men showed similar reductions in total International Prostate Symptom Score (IPSS) (7.68 vs. 7.12 points, p>0.05), IPSS quality of life (QoL) (1.38 vs.1.38 points, p>0.05), and postvoid residual (PVR) (39.9 vs. 42.3 mL, p>0.05), as well as similar increases in maximal flow rate (20.6 vs. 19.3 mL/s, p>0.05) compared to young men (Figure 1). The ejaculatory dysfunction rate was similar for both cohorts (12.0% vs. 9.7%, p>0.05). No patients experienced new-onset erectile dysfunction. Elderly men experienced similar annual retreatment rates compared to young men (1.5% vs. 0.8%, p>0.05).
Conclusions: Elderly men undergoing Aquablation have similar functional and surgical outcomes as young men. Elderly patient BPH surgical

MP-2.12. Table 1. Baseline demographics and clinical variables of young and elderly men from WATER I/II clinical trials undergoing Aquablation for treatment of LUTS/BPH

	Young men (n=83)	Elderly men (n=134)	p
Age (yr), mean (±SD)	59.3 (±3.4)	71.2 (±4.2)	<0.0001
Prostate TRUS volume (mL), mean (±SD)	75.6 (±36.1)	83.4 (±38.0)	0.1276
Middle lobe (%)	68.7	67.2	0.8803
IPSS (points), mean (±SD)	22.7 (±5.7)	23.3 (±6.4)	0.4435
IPSS QOL (points), mean (±SD)	4.6 (±1.0)	4.7 (±1.1)	0.4244
Qmax (mL/s), mean (±SD)	9.2 (±3.4)	8.9 (±3.0)	0.5088
PVR (mL), mean (±SD)	99.5 (±86.2)	120.5 (±112.5)	0.1282
MSHQ (points), mean (±SD)	8.7 (±3.7)	7.7 (±3.8)	0.0858
MSHQ Bother (points), mean (±SD)	1.9 (±1.6)	2.2 (±1.6)	0.2434
IIEF-5 (points), mean (±SD)	17.3 (±7.2)	15.4 (±6.8)	0.0810



MP-2.12. Figure 1. Change in IPSS, IPSS QoL, Qmax, and PVR for young (bold) and elderly (grey) men undergoing Aquablation for LUTS/BPH at three years followup.

counselling should, therefore, consider Aquablation as a treatment option for LUTS/BPH.

MP-2.13

Emergency holmium laser enucleation of the prostate: A novel approach in the management of refractory hematuria of prostatic origin

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Introduction: Refractory hematuria secondary to prostatic disease typically resolves with conservative management; however, this condition may require hospitalization with extensive measures to control life-threatening bleeding. The aim of this study was to report our initial experience using holmium laser enucleation of the prostate (HoLEP) as an emergency treatment in this clinical setting.

Methods: We conducted a retrospective review of all patients that presented to the emergency department with refractory hematuria of prostatic origin from 2017–2021, for whom hospitalization and conservative management failed to control bleeding. All emergency HoLEP procedures were performed by a single surgeon. Preoperative and intraoperative parameters, as well as perioperative outcomes, were collected and analyzed.

Results: A total of 40 emergency HoLEP procedures were performed. Our cohort had a mean prostate volume of 120.2±47.5 cc and a mean resected weight of 88.7±42.2 g. Twenty-seven patients (67.5%) were on anticoagulant or antiplatelet medications. Intraoperative parameters and perioperative outcomes revealed a mean drop in hemoglobin of 11±4% (Table 1). The urethral catheter was removed within one day in 95% of patients with a successful trial of voiding. Moreover, 92.5% of patients were discharged home within 24 hours of their procedure. Two patients (5%) experienced clot retention, with a 2.5% overall readmission rate.

MP-2.13. Table 1. Preoperative parameters, intraoperative parameters, and perioperative outcomes

Parameters and outcomes			Value, n (%)
HoLEP technology	Conventional		26 (65%)
	MOSES™ technology		14 (35%)
Age yrs	<70		4 (10%)
	70–80		20 (50%)
	>80		16 (40%)
Antiplatelet &/ anticoagulant medication	Yes	ASA	16 (40%)
		Clopidogrel + ASA	4 (10%)
		Warfarin + ASA	2 (5%)
		Rivaroxaban + ASA	5 (12.5%)
	No		13 (32.5%)
Preoperative blood transfusion	Yes	2 units	3 (7.5%)
		>2 units	2 (5%)
	No		35 (87.5%)
Drop in Hgb, %	Mean + SD		11+4%
Median drop in Hgb, %	Conventional		6%
	MOSES™ technology		6%
Previous TURP	Yes		28 (70%)
	No		12 (30%)
Prostate cancer	Yes		2 (5%)
	No		38 (95%)
Prostate volume, cc	Mean + SD		120.2+47.5
Resected prostate weight, g	Mean + SD		88.7+42.2
Enucleation time, min	Mean + SD		73.2+38.5
Morcellation time, min	Mean + SD		13.2+7
Energy, KJ	Mean + SD		135.2+73.2
Catheter time	<24 hours		38 (95%)
	>24 hours		2 (5%)
Postoperative hospital stay	<24 hours		37 (92.5%)
	>24 hours		3 (7.5%)
Postoperative clot retention	Yes		2 (5%)
	No		38 (95%)
Readmission	Yes		1 (2.5%)
	No		39 (97.5%)

Conclusions: Our initial experience demonstrates that emergency HoLEP may be an effective treatment for patients with refractory hematuria of prostatic origin. Further studies are warranted to consolidate our results.

MP-2.14

Benign prostatic hyperplasia with voiding vs. storage symptoms: A comparison of holmium laser enucleation of prostate outcomes

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Introduction: We sought to compare the outcomes of holmium laser enucleation of prostate (HoLEP) in benign prostatic hyperplasia (BPH) patients with voiding vs. storage symptoms.

Methods: From February 2015 to December 2020, we reviewed the charts of BPH patients who had HoLEP for voiding or storage lower urinary tract symptoms (LUTS). We excluded patients who had BPH with bladder stones, gross hematuria, or neurogenic bladder. Patients' characteristics, preoperative symptomatology, preoperative urodynamics study (UDS) parameters, preoperative International Prostate Symptom Score (IPSS), postoperative symptomatology, IPSS, procedure complications, and postoperative need for further treatment were collected, analyzed, and compared.

Results: A total of 132 patients were included in the analysis. Patients were divided into two groups based on their predominant symptomatology: group 1 included patients with predominant voiding symptoms (68 patients), while group 2 involved those with predominant storage symptoms (64 patients). HoLEP was equally effective in symptom improvement of both groups, with no significant difference in the postoperative decrease in IPSS between both groups. This was true at both three-month (p=0.842) and six-month (p=0.483) followup even though the IPSS was significantly higher in group 1 than in group 2 preoperatively (p=0.010) (Table 1).

Conclusions: Irrespective of preoperative predominant symptoms, HoLEP has evident rates of postoperative symptom improvement and patient satisfaction, as evidenced by the proportionate improvement in IPSS.

MP-2.15

Hemoglobin and sodium levels decrease after transurethral resection and photoselective vaporization of prostate

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Introduction: Transurethral resection of prostate (TURP) syndrome is a life-threatening complication of benign prostatic hyperplasia (BPH) surgery. It occurs secondary to systemic absorption of irrigation fluid, causing fluid overload and hyponatremia. In this study, we compared perioperative hemoglobin (Hb) and sodium (Na) levels after monopolar TURP and photoselective vaporization of prostate (PVP).

Methods: This was a retrospective review of 1000 patients between 2017 and 2021 who underwent monopolar TURP (glycine 1.5% irrigation) and PVP (normal saline irrigation). Continuous variables were normally distributed, presented as mean ± standard deviation (SD), and compared with Student's T-test and mean difference (MD) (95% confidence interval [CI]). Categorical variables were compared with the Chi-squared test.

Results: In total, 284 (29.2%) underwent PVP and 690 (70.8%) patients underwent TURP. PVP patients were older (72.5±8.5 vs. 71.2±9.5 years, MD 1.3 [0.05–2.6], p=0.04), had higher American Society of Anesthesiologists score (p=0.006), and had larger prostates (84.0±50.1 vs. 60.4±32.3 cc, MD 23.6 [17.0–30.1], p<0.001). More PVPs were performed under general anesthesia (73.9% vs. 59.0%, p<0.001) and had longer resection times (71.3±34.5 vs. 44.4±21.5 minutes, MD 26.8 [23.2–30.4], p<0.001). Recovery time was similar between PVPs and TURPs (73.2±41.3 vs. 70.7±39.0 minutes, p=0.37), but length of stay was longer for TURPs (1.9±3.2 vs. 2.5±3.5 days, MD 0.6 [0.2–1.1], p=0.007). Incidence of TURP syndrome was similar (0.7% vs. 1.7%, p=0.22). Perioperative Hb and Na change were significantly greater post-TURP (Table 1). Average Hb change was -8.7±10.7 post-TURP and -4.1±19.1 post-PVP (MD 4.6 [1.7–7.6], p=0.002). Average Na change was -2.8±4.0 post-TURP and -1.9±3.9 post-PVP (MD 1.0 [0.1–1.9], p=0.03).

Conclusions: Our findings show statistically significant reductions in Hb and Na levels after BPH surgery, with greater reductions post-TURP. However, the incidence of TURP syndrome was similar. Further research is needed to determine the clinical relevance of these findings.

MP-2.14. Table 1. IPSS of the studied groups

		Group 1	Group 2	t	p-value
IPSS	Preoperative	(n=68)	(n=64)		
	Mean±SD	28.4[a]±3.4	26.9[a]±3	2.606*	0.010*
	Median (min–max)	28.5 (22–34)	27 (22–32)		
	3-month followup	(n=68)	(n=64)		
	Mean±SD	19.9[b]±5.2	18.3[b]±4.3	1.890	0.061
	Median (min–max)	19.5 (12–30)	18 (12–28)		
	6-month followup	(n=68)	(n=64)		
	Mean±SD	12.3[c]±5.7	10.3[c]±5.1	2.120*	0.036*
	Median (min–max)	10 (5–28)	9 (4–24)		
	F (p0)	661.960*(<0.001*)	669.594*(<0.001*)		
Decrease in IPSS	3-month followup	(n=68)	(n=64)		
	Mean±SD	8.5±3.8	8.6±3.4	0.200	0.842
	Median (min–max)	8 (2–18)	8 (2–16)		
	6-month followup	(n=68)	(n=64)		
	Mean±SD	16±4.6	16.6±4.7	0.703	0.483
	Median (min–max)	16.5 (4–26)	16.5 (6–24)		

t: Student t-test; F: F test (ANOVA) with repeated measures, Sig. bet. periods was done using post-hoc test (adjusted Bonferroni); p: p value for comparing between the studied groups; p0: p value for comparing between the studied periods in each group; * Statistically significant at p≤0.05; Means in the same column with common small letters are not significant (i.e., means with different letters are significant).

MP-2.15. Table 1. Perioperative hemoglobin and sodium levels after monopolar TURP and GreenLight laser PVP

Variable	Monopolar TURP (glycine 1.5%)	Greenlight laser PVP (normal saline)	Mean diff (95% CI)	p
Patients	690 (70.8%)	284 (29.2%)		
Pre-op Hb, mean ± SD	140.7±16.8	137.5±17.6		0.02
Post-op Hb, mean ± SD Ref range: 130–170 g/L	128.7±18.0	128.1±19.4		0.65
Hb change, mean ± SD	-8.7±10.7	-4.1±19.1	4.6 (1.7–7.6)	0.002
Pre-op Na, mean ± SD	141.0±2.7	140.6±3.2		0.51
Post-op Na, mean ± SD Ref range: 135–145 mmol/L	138.1±3.9	138.6±3.4		0.17
Na change, mean ± SD	-2.8±4.0	-1.9±3.9	1.0 (0.1–1.9)	0.03

UP-2.3

Impact of 5-alpha reductase inhibitors on functional outcomes of GreenLight photovaporization of the prostate (PVP): An analysis of 3500 men in the Global GreenLight Group (GGG) database

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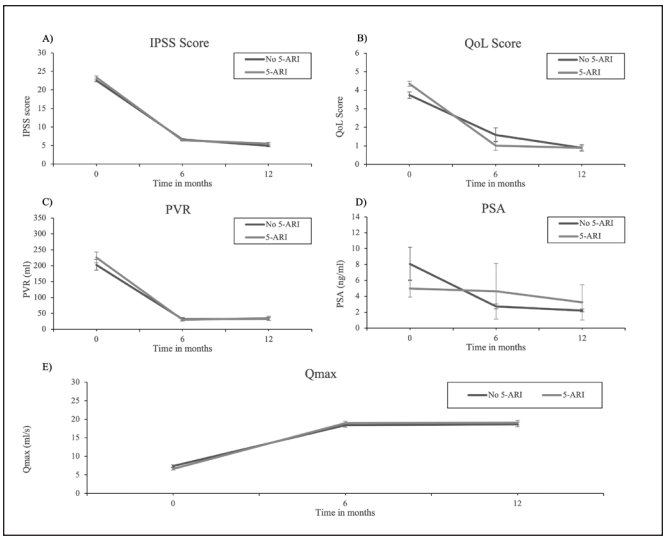
UP-2.3. Table 1. Baseline patient demographics

	Control (n=2254)	5-ARI (n=1246)	p-value
Age, years, mean (SD)	70.11 (9.05)	70.72 (8.61)	0.06
TRUS volume, ml, mean (SD)	71.50 (36.36)	73.95 (38.37)	0.07
ASA score, n (%)			**<0.01**
1	246 (10.9)	185 (14.8)	
2	610 (27.1)	430 (34.5)	
3+	1398 (62.0)	631 (50.6)	
IPSS, mean (SD)	22.57 (6.61)	23.36 (6.53)	**<0.01**
QOL, mean (SD)	3.74 (1.93)	4.35 (1.50)	**<0.01**
PSA, ng/dl, mean (SD)	8.08 (48.85)	4.99 (18.9)	**0.04**
PVR, ml, mean (SD)	202.67 (284.27)	225.77 (238.16)	0.06
Qmax, ml/s, mean (SD)	7.41 (4.16)	6.62 (3.62)	**<0.01**
α-blocker use, n (%)			**<0.01**
Yes	1626 (72.1)	1106 (88.8)	
No	618 (27.4)	140 (11.2)	
Unknown	10 (0.4)	0 (0)	

Introduction: 5-alpha reductase inhibitors (5-ARIs) are an effective medical therapy for patients with lower urinary tract symptoms due to benign prostatic hyperplasia (BPH). Furthermore, they can cause alterations in various prostate tissue parameters. We sought to investigate the impact of

UP-2.3. Table 2. Unadjusted functional and perioperative outcomes

	Control	5-ARI	p
Operation time, min, mean (SD)	67.82 (30.68)	69.93 (32.66)	0.07
Lasing time, min, mean (SD)	38.5 (22.19)	38.1 (21.23)	0.63
Energy, kJ, mean (SD)	132.5 (196.14)	87.84 (152.55)	**<0.01**
Number of fibers, median (IQR)	1.00 (1.00–1.00)	1.00 (1.00–1.00)	**0.4**
Hospital stay, days, median (IQR)	2.00 (1.00–3.00)	1.00 (1.00–2.00)	**<0.01**
Transfusion rate, n (%)	14 (0.86)	8 (0.79)	**0.04**
Hematuria rate, n (%)	129 (9.96)	83 (9.52)	**0.12**
30-day readmission rate, n (%)	108 (13.42)	79 (12.46)	**0.29**
IPSS decrease at 6 months, mean (SD)	16.22 (7.40)	17.01 (7.06)	**0.03**
IPSS decrease at 12 months, mean (SD)	18.02 (7.58)	18.08 (7.21)	0.88
QoL decrease at 6 months, mean (SD)	3.32 (1.56)	3.51 (1.38)	**0.49**
QoL decrease at 12 months, mean (SD)	3.44 (1.92)	3.72 (1.34)	**0.09**
PSA decrease at 6 months, ng/ml, mean (SD)	2.19 (8.46)	0.75 (52.08)	0.4
PSA decrease at 12 months, ng/ml, mean (SD)	2.06 (5.43)	1.15 (27.13)	0.41
PVR decrease at 6 months, ml, mean (SD)	251.47 (304.87)	224.45 (232.12)	0.13
PVR decrease at 12 months, ml, mean (SD)	259.31 (304.14)	226.3 (235.58)	0.09
Qmax change at 6 months, ml/s, mean (SD)	+11.96 (7.09)	+12.78 (6.79)	0.09
Qmax change at 12 months, ml/s, mean (SD)	+11.90 (6.96)	+13.01 (6.68)	0.03



UP-2.3. Figure 1.

5-ARIs on the operative outcomes of 180W XPS GreenLight photovaporization of the prostate (PVP) using a large international database.
Methods: Data were obtained from the Global GreenLight Group (GGG) database, which includes eight high-volume, experienced surgeons from a total of seven international centers. All men with established BPH with known 5-ARI status who underwent GreenLight PVP (GL) using the XPS-180W system between 2011 and 2019 were eligible for the study; 3500 men were identified. Patients were assigned to one of two groups based on 5-ARI status prior to surgery. Data were adjusted for patient age, prostate volume, and American Society of Anesthesiolgist score.
Results: Patients in both groups were similar with regards to age and prostate size (Figure 1, Table 1). Patients taking 5-ARIs had significantly higher baseline International Prostate Symptom Score and quality of life scores, in addition to significantly lower preoperative maximal flow rate and prostate-specific antigen levels. On univariate analysis (Table 2), men taking 5-ARIs required shorter hospital stays (p<0.01), and a lower risk of requiring a blood transfusion (rate of 0.79% vs. 0.86%, respectively, p=0.04). Furthermore, there were no statistically significant changes in total operative time, laser time, or readmission rates. On multivariate analysis, total operative time was 3.26 minutes shorter (95% confidence interval [CI] 1.20–5.32, p<0.01) and 35.6 kJ less laser energy (95% CI -48.0kJ–-23.3kJ, p<0.01) was required for patients on 5-ARI. No significant difference was appreciated with regards to postoperative transfusion rates, readmission rates, or overall functional outcomes.
Conclusions: Our findings suggest that preoperative 5-ARI decreases operative time and total laser energy required, with minimal changes to postoperative outcomes for patients undergoing GL using the XPS-180W system.

UP-2.4

Improvement of overactive bladder symptoms: Comparison between holmium laser enucleation of the prostate, photoselective vaporization of the prostate, and transurethral resection of the prostate

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Introduction: We aimed to compare the outcomes of three different benign prostatic hyperplasia (BPH) procedures in the management of BPH patients with overactive bladder (OAB) symptoms.
Methods: Between March 2012 and December 2020, A total of 170 BPH patients who had preoperative OAB symptoms and underwent transurethral resection of the prostate (TURP), holmium laser enucleation of the

UP-2.4. Table 1. Storage or overactive bladder (OAB) patient symptomatology of the studied groups

	TURP (n=89)	HoLEP (n=64)	PVP (n=17)	χ^2	p
Frequency					
Preoperative	75[a] (84.3%)	54[a] (84.4%)	14[a] (82.4%)	0.044	0.978
3-month followup	35[b] (39.3%)	24[b] (37.5%)	4[b] (23.5%)	1.536	0.464
6-month followup	24[b] (27%)	16[b] (25%)	2[b] (11.8%)	1.778	0.411
Q (p_0)	60.873*(<0.001*)	46.308*(<0.001*)	14.588*(0.001*)		
Urgency					
Preoperative	66[a] (74.2%)	53[a] (82.8%)	13[a] (76.5%)	1.622	0.444
3-month followup	44[b] (49.4%)	19[b] (29.7%)	5[b] (29.4%)	6.933*	0.031*
6-month followup	14[c] (15.7%)	8[b] (12.5%)	3[b] (17.6%)	0.440	0.803
Q (p_0)	54.507*(<0.001*)	58.964* (<0.001*)	14.0* (0.001*)		
Nocturia					
Preoperative	72[a] (80.9%)	52[a] (81.3%)	14[a] (82.4%)	0.020	0.990
3-month followup	36[b] (40.4%)	26[b] (40.6%)	6[b] (35.3%)	0.175	0.916
6-month followup	9[c] (10.1%)	6[c] (9.4%)	2[b] (11.8%)	0.088	0.957
Q (p_0)	90.818*(<0.001*)	66.50*(<0.001*)	18.667*(<0.001*)		
Urinary incontinence					
Preoperative	54[a] (60.7%)	38[a] (59.4%)	9[a] (52.9%)	0.354	0.838
3-month followup	27[b] (30.3%)	9[b] (14.1%)	0[b] (0%)	10.982*	0.004*
6-month followup	9[c] (10.1%)	3[b] (4.7%)	0[b] (0%)	2.287	[MC]p=0.355
Q (p_0)	60.353*(<0.001*)	56.811* (<0.001*)	18.0* (<0.001*)		

χ^2: Chi-squared test; Q: Cochran's test, Sig. bet. periods was done using post-hoc test (Dunn's); p: p value for comparing between the studied groups; p_0: p value for comparing between the studied periods in each group; *Statistically significant at p≤0.05.

prostate (HoLEP), or photoselective vaporization of the prostate (PVP) were retrospectively reviewed. Patients were included only if they had detrusor overactivity and postvoid residual <150 ml. Patients' characteristics, preoperative urodynamics study (UDS) parameters, preoperative and postoperative OAB symptomatology, International Prostate Symptom Score (IPSS), procedure complications, and postoperative need for treatment were collected, analyzed, and compared.
Results: A total of 170 BPH patients with OAB symptoms were divided into three groups based on their BPH intervention: TURP (89 patients), HoLEP (64 patients), and PVP (17 patients). Urgency (p=0.031) and urge incontinence (p=0.004) were significantly improved in the HoLEP and PVP groups compared to the TURP group at three months postoperative. At three and six months, there were significant improvements of all OAB symptoms in comparison to preoperative parameters (Table 1).
Conclusions: TURP, HoLEP, and PVP are effective and reliable surgical procedures that can be used for BPH patients with OAB symptoms. Compared to TURP, HoLEP and PVP provide better improvement in urgency and urge incontinence.

UP-2.5

Perioperative antibiotics for transurethral resection of prostate in indwelling catheter dependence

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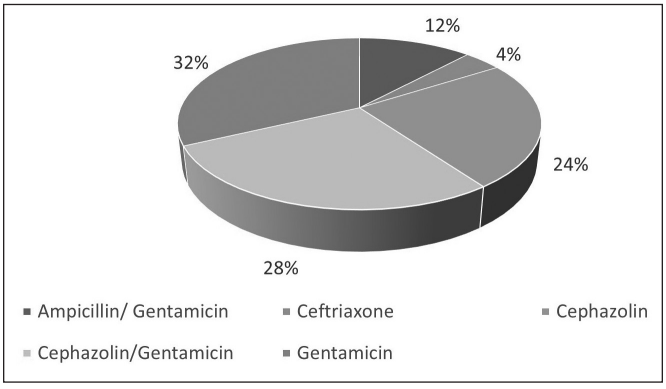
Introduction: The literature suggests that having an indwelling catheter (IDC) prior to transurethral resection of the prostate (TURP) is closely associated with an increased risk of postoperative urinary tract infection (UTI). Although guidelines strongly recommend antibiotic prophylaxis for TURP, the use of antibiotic prophylaxis in patients with preoperative IDC remains unclear.[1] The aim of this study was to retrospectively evaluate preoperative antimicrobial therapy in patients undergoing TURP for IDC dependence and post-operative UTI outcomes.
Methods: A retrospective chart review of 53 patients undergoing TURP was performed. Electronic medical records of these patients were reviewed for IDC dependence, preoperative UTI, preoperative antimicrobial management, and 30-day admissions with UTI. Exclusion criteria were any additional procedures at the time of the TURP and postoperative IDC for >7 days.
Results: Out of the 53 charts reviewed, three patients were excluded for IDC >7 days and additional procedures. The mean age was 68 years. Preoperative IDC was present in 24 patients. Positive preoperative culture was found in 83% of IDC-dependent patients and 80% were treated with oral antibiotics (Abs). IV Abs in the 24 hours prior to surgery was given to 79% of IDC-dependent cases, along with a change of catheter. All patients received an induction dose of IV Abs; only two patients received induction IV Abs alone. Readmission with UTI within 30 days was 16% in IDC-dependent patients receiving preoperative IV Abs compared to 20% with no IV Abs (p=0.82). Choices of IV Abs used on induction for IDC-dependent TURP is shown in Figure 1, illustrating significant variability.
Conclusions: Patients with an IDC prior to undergoing a TURP have a significantly high incidence of culture-proven UTIs. Preoperative intravenous Abs and IDC change prior to a TURP could reduce their risk of readmission. There is also significant variability in the choice of Abs used during induction. More research is warranted in this area to establish clear guidelines.



UP-2.5. Figure 1. Pie chart of antibacterial prophylaxis for IDC-dependent TURP patients.

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UP-2.6

Safety and efficacy of GreenLight photoselective vaporization of the prostate in octogenarians using the Global GreenLight Group database

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Introduction: GreenLight photoselective vaporization of the prostate (PVP) is a surgical treatment for benign prostatic hyperplasia (BPH) that yields comparable results to transurethral resection of the prostate while optimizing safety outcomes; yet, granular data is lacking for patients over the age of 80. The present study analyzed the largest international GreenLight database, the Global GreenLight Group, to evaluate the functional and safety profile of GreenLight PVP in octogenarians.
Methods: The Global GreenLight Group is a database comprised of patients that underwent GreenLight PVP from 2011–2019 performed by eight experienced urologists at seven different international hospitals. Patients 80 years or older at the time of surgery were categorized as octogenarians, and were compared to all other PVP patients, labelled as the control group.
Results: Among 3648 patients, 586 men were above the age of 80. Compared to the control, octogenarians had larger prostates (76.0 vs. 71.9 ml, p=0.02) and a lower body mass index (25.6 vs. 26.7, p=0.045). They also had higher American Society of Anesthesiologists scores: 61.0% were considered high-medical-risk, i.e., had an ASA of 3 or greater, compared to 22.7% in the control group. Operative time was not significantly longer. The change in outcomes between 80-year-old patients and control patients was not significantly different one-year postoperative, with the exception of maximum urinary flow that favored younger patients (Table 1). The odds of transfusion were greater for older patients (odds ratio 8.2, 95% confidence interval 3.6–18.9, p<0.01) but they were not at increased risk of hematuria. Octogenarians had higher readmission rates (23.0% vs. 11.9%, p<0.01).
Conclusions: GreenLight PVP is an effective surgical option for treating symptomatic BPH in octogenarians and achieves similar functional outcomes compared to younger patients. The odds of transfusion were

UP-2.6. Table 1. Functional outcomes

	Control group (n=3062)	Octogenarians (n=586)	p
IPSS, mean (SD)			
Change at 6 months	16.5 (7.3)	15.9 (8.3)	0.28
Change at 12 months	18.0 (7.4)	17.7 (8.3)	0.62
QoL, mean (SD)			
Change at 6 months	3.5 (1.6)	3.4 (1.5)	0.67
Change at 12 months	3.6 (1.6)	3.7 (1.8)	0.71
PSA, ng/ml, mean (SD)			
Change at 6 months	1.6 (33.8)	1.8 (26.8)	0.95
Change at 12 months	1.6 (18.7)	2.3 (7.4)	0.72
PVR, ml, mean (SD)			
Change at 6 months	-236.8 (312.4)	-314.8 (316.2)	**0.02**
Change at 12 months	-245.3 (323.7)	-306.5 (286.9)	0.10
Qmax, ml/s, mean (SD)			
Change at 6 months	12.5 (7.1)	9.9 (6.1)	**<0.01**
Change at 12 months	12.6 (7.0)	10.3 (6.6)	**0.02**

IPSS: International Prostate symptom score; PSA: Prostate-specific antigen; PVR: post-void residual; Qmax: maximum urinary flow rate; QoL: quality of life. Boldface print indicates p<0.05.

higher in patients over 80, but the absolute risk remains low. The 30-day hospital readmission rate was also higher in octogenarians.

UP-2.7

Holmium laser enucleation of the prostate outcomes after water vapor thermal therapy, prostatic urethral lift, robotic waterjet treatment, or prostatic artery embolization

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Introduction: The 2021 American Urological Association benign prostate hyperplasia (BPH) guideline recommends several alternative minimally invasive surgeries. We describe outcomes of holmium laser enucleation of the prostate (HoLEP) after failing an alternative surgery, specifically water vapor thermal therapy (WVTT), prostatic urethral lift (PUL), robotic waterjet treatment (RWT), or prostatic artery embolization (PAE).

Methods: We retrospectively examined patients within our institution review board-approved clinical database that underwent HoLEP (March 2021 to September 2021) with a prior history of WVTT, PUL, RWT, or PAE. Continuous variables were expressed as mean (range) with heteroscedastic two-tailed T-test and Fisher's exact test (p<0.05).

Results: We identified 17 patients that underwent PUL (n=8), PAE (n=4), WVTT (n=3), and RWT (n=2) an average 28.5 months prior to HoLEP (range 10–83 months). Average age was 71 (60–81) years, with preoperative prostate size of 95.3 mL (range 31–191) (magnetic resonance imaging: 8, computed tomography: 7, transrectal ultrasound: 1, digital rectal exam: 1), intraoperative specimen weight of 59.7 g (15–125), and body mass index of 28 (21–35). Pre-HoLEP urinary incontinence (UI) was present in 8/17 (47%), with patients using alpha-blockers (n=14), 5-alpha-reductase inhibitors (5-ARIs) (n=6), anticholinergics (n=3), and beta-3 agonists (n=1) following their alternative BPH surgery. Post-HoLEP, only two patients required anticholinergic medications at three months (alpha-blockers: 0, 5-ARIs: 0, beta-3 agonists: 0). International Prostate Symptom Score improved post-HoLEP (20.0 [6–30] vs. 8.9 [2–21], p=0.0043). Michigan Incontinence Symptom Index bother scores improved post-HoLEP (5.5 vs. 1.2, p=0.028). No patients required indwelling catheters at three months post-HoLEP.

Conclusions: In patients that have undergone alternative minimally invasive BPH surgeries (PUL, WVTT, RWT, PAE) with persistent lower urinary tract symptoms, UI, or need for medical management, our single-center six-month series shows IPSS and UI bother score improvements post-HoLEP. All patients were able to discontinue alpha-blockers, 5-ARIs, and beta-3 agonists at three-month followup.

UP-2.8

Outcomes of concurrent bladder Botox administration at the time of holmium laser enucleation of the prostate: A feasibility evaluation

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Introduction: Select patients with preoperative urgency and/or urge urinary incontinence, along with benign prostatic hyperplasia (BPH), may require post-holmium laser enucleation of the prostate (HoLEP) anticholinergic, B3 agonist, or intravesical Botox. Consideration of concurrent bladder Botox during HoLEP may help reduce postoperative urgency, urge urinary incontinence, and need for incontinence treatments. Our primary objectives were to assess whether concurrent bladder Botox during HoLEP was safe while improving urgency.

Methods: We prospectively examined 10 consecutive patients enrolled within our institutional review board-approved clinical registry that underwent HoLEP and bladder Botox (200 units) at our center from July to October 2021. Patient perioperative course was examined in the context of urgency, incontinence, incontinence products, and complications. Continuous variables were expressed as median (interquartile range [IQR]) and mean (range), with heteroscedastic two-tailed T-test and Fisher's exact test. Significance was set at p<0.05.

Results: We examined 10 patients of median age 72 years (IQR 68–75), boys mass index 30 (28–38), preoperative prostate-specific antigen 2.3 (1.4–5.3), prostate volume 102 mL (60–125) (four computed tomography, four magnetic resonance imaging, three digital rectal exam), American Urological Association Symptom Score 24 (23–27), Michigan Incontinence Symptom Index (MISI) severity 13 (12–26), and MISI bother 4 (2–6). All patients had preoperative urgency and urinary incontinence with a mean number of daily incontinence products of 3.1 (range 0–11) and 5/10 having a history of anticholinergic ± B3 agonist medication use. Only 2/10 patients had prior BPH surgery (1 transurethral resection of the prostate [TURP], 1 TURP and photoselective vaporization of the prostate). Nine patients completed a one-week postoperative followup, with 4/9 (44%) being continent. One week postoperatively, the mean incontinence product use improved (3.1 vs. 0.75, p=0.03). Within three months, 1/9 patients had ongoing urinary incontinence (one pending followup) with improved MISI bother (4 vs. 1, p=0.002). There was one 90-day Clavien-Dindo ≥IIIa complication. No patients had urinary retention within 30 days.

Conclusions: In this single-center feasibility study, concurrent urinary bladder Botox during HoLEP was safe in select patients and improved urgency, urge urinary incontinence, and incontinence product usage.

UP-2.9

Safety and efficacy of the 980 nm diode system (EVOLVE laser prostatectomy) for the management of bothersome benign prostatic obstruction: An Australian experience

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Introduction: Despite technical advancements, conventional transurethral resection of the prostate (TURP) with electrocautery remains morbid, with a 20% complication rate. Various laser ablative technologies for the management of benign prostatic hyperplasia (BPH) have been developed to reduce surgical morbidity without compromising clinical efficacy. We investigated the clinical efficacy and outcomes of the 980 nm diode laser for symptomatic BPH.

Methods: A single-center, retrospective study was conducted between 2008 and 2020 on men with moderate to severe lower urinary tract symptoms (LUTS) secondary to benign prostatic obstruction (BPO), who underwent 980 nm (EVOLVE) diode laser prostatectomy at North Shore Private Hospital, Sydney, Australia. Patient demographics, anticoagulation status, pre- and postoperative measurements of peak urinary flow rate (Qmax), postvoid residuals (PVR), and International Prostate Symptom Score (IPSS), as well as peri- and postoperative complications were recorded.
Results: The overall cohort (n=98) demonstrated a statistically significant improvement in the pre- and postoperative Qmax (14.94±8.19 mL/s, p<0.0001) and PVR (229.93±179.18 mL, p<0.0001). Eighty-seven patients (89%) had a categorical improvement in pre- and postoperative IPSS. Short-term postoperative complications included urinary tract infection (14%), mild hematuria (15%), and clot retention (2%). The emergency representation rate was 9%. Long-term complications included urethral stricture (2%) and bladder neck contractures (4%). No patients required blood transfusion or emergency surgery.
Conclusions: In this small cohort, the 980 nm diode laser is similar in efficacy and complication rates to conventional TURP with a smaller risk of bleeding and clot retention. Further assessment of its hemostatic properties for patients on active anti-coagulation, as well as long-term functional outcomes in head-to-head trials are required.

UP-2.12

Rates of genitourinary injuries during gynecologic surgery for benign disease at two large tertiary referral centres — a retrospective review

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Introduction: The incidence of iatrogenic genitourinary injuries occurring at the time of gynecological surgery for benign disease is estimated at 1%, with 70% of injuries involving the bladder and 30% involving the ureters.[1] Preoperative ureteral stents have been demonstrated to increase identification of ureters intraoperatively, however, there is conflicting evidence regarding their role in reducing the rates of ureteric injuries. The purpose of this retrospective review was to determine the rate of genitourinary injury requiring urologic intervention during gynecological surgery for benign disease and compare the rates seen in two large Canadian tertiary centers to recently reported values.
Methods: A retrospective review was performed of all patients referred to urology in Vancouver and Edmonton for management of genitourinary injuries between January 2018 and January 2020.
Results: Thirty-three of 8998 (0.4%) benign gynecological surgeries had genitourinary injuries that required urology consultation for repair. Seventeen of 33 cases involved the bladder and 16/33 involved the ureters. Twenty-eight of 33 (84%) injuries occurred during hysterectomies, with the majority being performed laparoscopically. Use of intraoperative ureteric stents was similar at both major centers — 2% of cases in Edmonton and 3% of cases in Vancouver. Management of ureteric injuries varied between centers, with 78% of injuries managed with ureteric stent placement in Vancouver vs. 71% of injuries managed with ureteral re-implant in Edmonton. Postoperative imaging for all repaired ureteric injuries demonstrated resolution of hydronephrosis and no evidence of obstruction.
Conclusions: Our incidence of genitourinary injuries during benign gynecological surgery at 0.4% is lower than previously reported rates. All patients with ureteric injuries had no evidence of obstruction eight weeks post-repair, demonstrating that both stent insertion and ureteric re-implant are reliable options for management of ureteric injuries.

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