

# Poster Session 9: Benign Prostatic Hyperplasia

## Monday, June 29, 2026 • 07:45–09:00

Cite as: *Can Urol Assoc J* 2026;20(suppl1):S83-91. <http://dx.doi.org/10.5489/cuaj.9824>

### MP 9.1

#### Novice 30-amp MOSES vs. MOSES 2.0 technology in holmium laser enucleation of the prostate: Initial experience

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**Introduction:** The 120 W MOSES 1.0 and 2.0 laser systems require a 50-amp power supply, often necessitating costly upgrades to electrical infrastructure. To overcome this barrier, a 30-amp MOSES system was introduced. We aimed to compare early perioperative and functional outcomes of holmium laser enucleation of the prostate (HoLEP) performed with the 30-amp MOSES system and MOSES 2.0 technology.

**Methods:** Sixty-five patients underwent HoLEP with the 30-amp MOSES system and 210 with MOSES 2.0 at our institution between June 2023 and April 2025. Intraoperative and perioperative outcomes, including admission and readmission rates, IPSS, QoL, Qmax, PVR, and postoperative PSA, were collected and analyzed at one, three, and six months postoperatively.

**Results:** The two groups had comparable preoperative characteristics, with median prostate volumes of 105 and 111 cc in the MOSES 2.0 and 30-amp MOSES groups, respectively ( $p=0.22$ ). Intraoperatively, the MOSES 2.0 group demonstrated an eight-minute shorter median enucleation time ( $p=0.007$ ), a three-minute shorter median hemostasis time ( $p<0.001$ ), and lower energy use (75.7 vs. 92.1 kJ,  $p<0.001$ ). Additionally, MOSES 2.0 demonstrated superior enucleation efficiency compared to 30-amp MOSES (2.2 vs. 2 g/min,  $p=0.047$ ). Other operative parameters, including morcellation time, resected weight, and hemoglobin drop, were comparable between the two groups. Both technologies achieved comparable successful same-day trial of void rates of 94% in the MOSES 2.0 group and 93.4% in the 30-amp MOSES group ( $p=0.88$ ). Postoperative functional outcomes, including IPSS, QoL, Qmax, PVR, and PSA, were comparable between groups up to six months of followup (Table 1).

**Conclusions:** HoLEP with the novel 30-amp MOSES technology is a safe and effective option for treating BPH. Both MOSES systems support same-day discharge, with comparable safety and functional outcomes. The 30-amp MOSES system may offer a practical alternative for institutions without a dedicated 50-amp power supply. Large randomized controlled trials with longer followup are warranted.

### MP 9.2

#### Feasibility of same-day discharge after bipolar transurethral resection of the prostate: A prospective, Canadian cohort study

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**Introduction:** Since the COVID-19 pandemic, limited access to inpatient beds made patient access to transurethral resection of the prostate (TURP) extremely difficult. There is limited literature exploring the safety and feasibility of performing TURP on an outpatient basis. With the introduction of the bipolar TURP devices, ambulatory TURP with bipolar was accomplished to help with decreasing the waitlist while adhering to COVID-19 policies. Our objective was to evaluate the outcomes of ambulatory TURP.

**Methods:** We analyzed a database of all consecutive patients who underwent bipolar TURP (bTURP). Institutional research ethics board approval was obtained.

Baseline demographics and outcome data were collected prospectively. All patients were scheduled to have the procedure planned as a day surgery ambulatory discharge with an indwelling catheter to be removed as an outpatient. Data were collected on readmission rates, reasons for readmission, and transfusion rates.

**Results:** Thirty-five patients underwent bipolar TURP with planned same-day discharge. Median age was 63 years (range 52–80), and median prostate volume was 70 g (range 50–98). Mean operative time was 45 minutes, with procedures performed under either spinal or general anesthesia. All patients (100%) were successfully discharged home within eight hours postoperatively. There were no emergency department visits or hospital readmissions within 30 days. Minor hematuria occurred in five patients (14%), all classified as Clavien-Dindo grade I and resolving spontaneously. No urinary tract infections, clot retention, urethral strictures, or stress urinary incontinence were observed. Catheter duration was less than two days for all patients, with successful voiding thereafter. Patient satisfaction was high, with the majority indicating they would choose same-day surgery again.

**Conclusions:** Ambulatory bTURP can be safe and feasible. The postoperative ambulatory complication rates were similar or significantly lower than in the reported literature. Outpatient surgeries can be economically beneficial and lead to improved access and more patient satisfaction. Given the novelty and relatively limited scale of this study, larger and longer trials are needed to analyze long-term complication rates and validate the economic impact of ambulatory surgeries.

### MP 9.3

#### Efficacy and safety of the UVapor® System water vapor thermal therapy in patients with benign prostatic hyperplasia: A prospective, multicenter, single-blind, randomized controlled trial

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**Introduction:** We assessed the efficacy and safety of the UVapor® System water vapor thermal therapy (WVTT) for treating benign prostatic hyperplasia (BPH) by conducting a prospective, multicenter, single-blind, randomized controlled trial.

**Methods:** Patients with BPH were randomized to receive either the UVapor® System WVTT or rigid cystoscopy sham surgery. The primary endpoint was the change in International Prostate Symptom Score (IPSS) from baseline at three months.

**Results:** A total of 126 patients were randomly assigned in a 2:1 ratio to either the treatment group (UVapor® System WVTT) or the control group (rigid cystoscopy sham surgery). At three months, patients in the treatment group exhibited a mean IPSS improvement of  $-13.6 \pm 0.75$  points, significantly greater than that in the control group (least squares [LS] mean difference =  $-11.7$ , 95% confidence interval [CI]  $-14.13$  to  $-9.27$ ). Patients in the treatment group demonstrated significant improvements in lower urinary tract symptoms (LUTS), flow rate, and quality of life (QOL) compared to both baseline and the control group, and were sustained throughout six months. Furthermore, no adverse effects on erectile or ejaculatory function were observed with the UVapor® System WVTT. The overall incidence of adverse events (AEs) in the treatment group was comparable to that in the control group, with no participant withdrawal or death resulting from AEs.

**Conclusions:** The UVapor® System WVTT demonstrates early, effective, and durable relief of LUTS while preserving sexual function, along with favorable safety outcomes at the six-month followup. It is an effective and safe minimally invasive treatment for BPH.

**MP 9.1. Table 1. Patient demographics, operative data, and postoperative outcomes**

Parameter	MOSES 2.0 HoLEP (210 patients)	30-amp MOSES HoLEP (65 patients)	p
<b>Patient demographics and preoperative data</b>			
Age at surgery median (range) yrs	73.9 (54.1–92.1)	70.8 (55.5–89.4)	0.13
Indication of surgery n (%)	LUTS	139 (66.2)	48 (73.9)
	Retention	59 (28.1)	14 (21.5)
	LUTS + stones	5 (2.4)	1 (1.5)
	LUTS + hematuria	7 (3.3)	2 (3.1)
Preoperative IPSS, median (range)	26 (16–35)	25 (16–35)	0.99
Preoperative QoL, median (range)	5 (3–6)	5 (3–6)	0.47
Preoperative Qmax, median (range) mL/s	7.3 (2–14)	7.8 (2–14.2)	0.11
Preoperative PVR, median (range) mL	152 (0–734)	180 (20–768)	0.09
Prostate volume, median (range) cc	105 (50–500)	111 (53–355)	0.22
Preoperative PSA, median (range) ng/mL	4.4 (0.98–25)	4.8 (0.57–26)	0.54
<b>operative data and early postoperative outcomes</b>			
Enucleation time, median (range) min	40 (10–135)	48 (20–100)	0.007
Morcellation time, median (range) min	10 (3–70)	11 (3–100)	0.53
Hemostasis time, median (range) min	5 (2–15)	8 (4–14)	<0.001
Resected weight, median (range) g	84.5 (25–487)	84 (30–320)	0.68
Energy, median (range) kJ	75.7 (31.4–225.1)	92.1 (40.6–154.8)	<0.001
Enucleation efficiency, median (range) g/min	2.2 (0.6–6.9)	2 (0.9–5.3)	0.047
Hemoglobin drop, median (range) g/L	9.5 (0–26)	9 (2–26)	0.5
Same-day TOV, n (%)	199 (94.8)	61 (93.8)	0.78
Successful same-day, TOV n (%)	187/199 (94)	57/61 (93.4)	0.88
Admission n (%)	11 (5.2)	4 (6.1%)	0.78
Duration of catheterization n (%)	3 hours	199 (94.8)	61 (93.9)
	<24 hours	9 (4.2)	3 (4.6)
	48 hours	2 (1)	1 (1.5)

\*Patient with atrial fibrillation requiring a blood transfusion. \*\* Patient was readmitted after starting

**MP 9.1. Table 1 (cont'd). Patient demographics, operative data, and postoperative outcomes**

Parameter	MOSES 2.0 HoLEP (210 patients)	30-amp MOSES HoLEP (65 patients)	p
<b>operative data and early postoperative outcomes (cont'd)</b>			
Hospital stay n (%)	4 Hours	199 (94.8)	61 (93.9)
	<24 hours	9 (4.2)	3 (4.7)
	48 hours	2 (1)	1 (1.5)
Early postoperative complications n (%)	Clavien I	25 (11.9)	8 (12.3)
	Clavien II	3* (1.4)	1 (1.5)
	Clavien III	0	0
	Clavien IV/V	0	0
Readmissions n (%)	4 (1.9)	1 (1.5)**	0.85
<b>1-month followup</b>			
Number of patients	210	65	–
IPSS, median (range)	8 (1–22)	8 (2–19)	0.7
QoL, median (range)	2 (0–6)	2 (0–5)	0.79
Qmax, median (range) mL/s	20.8 (5.6–48.9)	19.5 (5.7–55.6)	0.33
PVR, median (range) mL	50 (0–344)	55 (0–223)	0.77
Stress urinary incontinence, n (%)	9 (4.3)	3 (4.6)	0.91
<b>3-month followup</b>			
IPSS, median (range)	5 (0–24)	5 (1–14)	0.57
QoL, median (range)	1 (0–4)	1 (0–3)	0.15
Qmax, median (range) mL/s	23.7 (4.4–48.6)	22.8 (13.8–55.1)	0.59
PVR, median (range) mL	30 (0–188)	44 (0–200)	0.09
Stress urinary incontinence, n (%)	0 (0)	1 (1.5)	0.054
% PSA reduction, median (range)	86.5 (10–99.2)	86.1 (54.2–97)	0.24
<b>6-month followup</b>			
IPSS, median (range)	4 (0–13)	4 (1–11)	0.29
QoL, median (range)	1 (0–4)	1 (0–2)	0.93
Qmax, median (range) mL/s	25.8 (7.9–49.8)	27.6 (14–50.6)	0.31
PVR, median (range) mL	15 (0–160)	29 (0–198)	0.07
Stress urinary incontinence, n (%)	0	0	–

\*Patient with atrial fibrillation requiring a blood transfusion. \*\* Patient was readmitted after starting

**MP 9.4**

**Warmed irrigation fluid and perioperative hypothermia during laser enucleation of the prostate**

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**Introduction:** Intraoperative hypothermia is a well-documented risk during transurethral resection of the prostate (TURP) and can contribute to postoperative complications. Laser enucleation of the prostate (LEP) often has longer operative times than TURP, but minimal data exists on risks of hypothermia during the surgery. This study aimed to assess whether the use of warmed irrigation fluids reduces perioperative hypothermia during LEP procedures at our institution.

**Methods:** We performed a retrospective cohort study of patients undergoing LEP from May 2023 to July 2025. Warmed irrigation fluids were implemented in July 2024; procedures prior were classified as pre-warming, and those from August 2024 onward as post-warming. Intraoperative temperatures were recorded at 15-minute intervals. Hypothermia was defined as any recorded temperature <36.0°C. Duration was calculated based on consecutive hypothermic readings. Patients without any intraoperative temperature recordings were excluded from hypothermia-specific analyses. Primary outcomes included incidence, duration, and prolonged hypothermia ≥30, ≥45, and ≥60 minutes, and post-anesthesia care unit (PACU) arrival temperatures. Baseline characteristics, physical status grade, surgical time, and IV fluid volumes were also compared.

**Results:** A total of 108 patients were included (45 pre-warming, 63 post-warming). Of these, 64 (34 pre-, 30 post-) had intraoperative temperature data. Operative time was significantly shorter in the post-warming group (93.3 vs. 120.4 min, p=0.0001), as were IV fluid volumes (912 vs. 1150 mL, p=0.023). Single incidences of hypothermia were similar between the pre- and post-warming groups (83.3% vs. 76.5%, respectively, p=0.53). While mean duration and prolonged hypothermia were numerically lower in the post-warming group, this was not statistically significant (Table 1). PACU arrival temperatures were significantly higher post-warming (36.28°C vs. 35.87°C, p=0.00006) (Table 2).

**Conclusions:** Warmed irrigation fluids were associated with a trend toward reduced intraoperative hypothermia duration and significantly higher PACU arrival temperatures. Although not statistically significant for primary outcomes, this intervention may offer thermal benefits. Larger prospective studies are warranted.

**MP 9.4. Table 1. Baseline patient and perioperative characteristics**

Characteristic	Pre-warming (n=45)	Post-warming (n=63)	p
Age (years)	71.4±6.5	71.6±6.7	0.90
BMI	27.1±4.0	27.4±4.6	0.77
ASA grade (median)	2	2	0.65
Diabetes (%)	11.4%	11.1%	1.00
Hypertension (%)	65.7%	65.1%	1.00
Anticoagulation (%)	31.4%	17.5%	0.17
Pre-op Hb (g/L)	144.6±14.3	141.3±16.7	0.43
Pre-op temp (°C)	36.6±0.3	36.6±0.4	0.52
Operative time (min)	120.4±33.1	93.3±30.5	0.0001
IV fluid volume (mL)	1150±587	912±416	0.023

Values are presented as mean ± standard deviation (SD) unless otherwise indicated.

**MP 9.4. Table 2. Perioperative hypothermia outcomes**

Outcome	Pre-warming (n=34)	Post-warming (n=30)	p
Incidence of hypothermia (%)	76.5%	83.3%	0.53
Mean duration (min)	45.0±37.0	37.5±30.0	0.41
≥30 min hypothermia (%)	55.9%	50.0%	0.66
≥45 min hypothermia (%)	38.2%	36.7%	0.90
≥60 min hypothermia (%)	32.4%	26.7%	0.64
PACU arrival temp (°C)	35.87±0.49	36.28±0.33	0.00006

Values are presented as mean ± standard deviation (SD) unless otherwise indicated.

**MP 9.5**

**Randomized control trial of BPH TURBO procedure using the OptilumeBPH system with three block techniques: First world reporting of outpatient in-office experience under local anesthesia**

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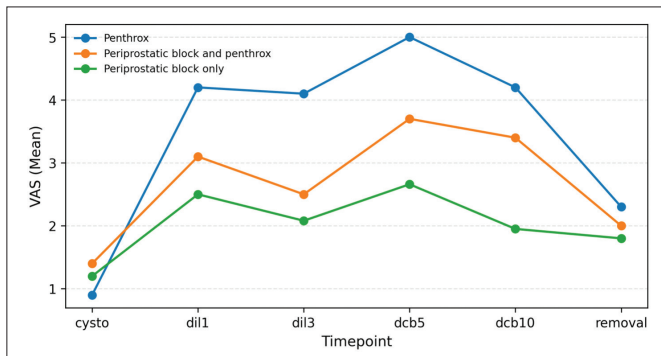
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**Introduction:** Minimally invasive therapies are reshaping the management of benign prostatic hyperplasia (BPH), particularly for patients seeking alternatives to transurethral resective surgery. Optilume BPH is an FDA-approved drug-coated balloon technology that combines controlled prostatic dilation with targeted delivery of paclitaxel to inhibit tissue regrowth. While functional outcomes and durability are increasingly reported, perioperative pain and how it varies across different sedation strategies remain underexplored. This study evaluated intraoperative and postoperative pain trajectories across different sedation and local anesthesia strategies

**Methods:** After IRB approval of a randomized prospective study, 30 consecutive patients treated with OptilumeBPH between 2023–2025 using 1/3 local anesthesia techniques (1) TRUS periprostate lidocaine block coupled with Pentrox; 2) Pentrox only; or 3) TRUS peri-prostate lidocaine Beahrs block coupled with novel injection of lidocaine peri-urethral in the transition zone) were included in the evaluation. VAS pain scores were recorded at predefined procedural milestones: cystoscopy, balloon dilation at one and three minutes, DCB inflation at five and 10 minutes, and balloon removal. Postoperative pain was recorded at discharge daily until VAS=0, and at one and three months. Group differences were assessed using one-way ANOVA.

**Results:** The median age was 66.1 years; the mean BPH duration was 5.9±3.7 years. Baseline pain scores were 0 in all groups. Pain increased during dilation and peaked during drug-coated balloon inflation at five minutes, and was highest in the Pentrox-only group (5.00±2.31), followed by periprostatic block + Pentrox (3.70±1.77) and block alone (2.66±1.70). Significant between-group differences were observed at DCB 5 min (F=3.63, p=0.040) and DCB 10 min (F=3.69, p=0.038). No significant differences were seen during cystoscopy, early dilation, balloon removal, or discharge. Postoperatively, discharge pain was low across groups (1.20–2.00). Time to complete pain resolution (VAS=0) was shortest in the periprostatic block + Pentrox group (15.8±8.3 days), followed by Pentrox alone (17.8±10.1 days) and block only (21.6±5.6 days), although not statistically significant (p=0.279) (Figure 1). All patients achieved VAS=0 by one month, with no differences at three months.

**Conclusions:** Pain during Optilume remains mild to moderate and transient, with peak discomfort occurring during DCB inflation. Use of the modified-Beahrs periprostatic block coupled with TZ infiltration, or standard prostate block with Pentrox, appears to reduce peak intraoperative pain compared to Pentrox alone. Nevertheless, all techniques permitted safe and successful TURBO procedures with comparable outcomes. Postoperative pain resolution is similar across groups, with rapid recovery in all patients (pain-free [VAS=0] status by one month). These data support the overall tolerability of OptilumeBPH TURBO and provide a standardized pain profile to inform patient counseling and analgesic protocols.



MP 9.5. Figure 1. Intraoperative VAS pain by sedation group.

**MP 9.6**  
**Recommended wait times for benign prostatic hyperplasia are not being met in Canada: A quality assurance study**

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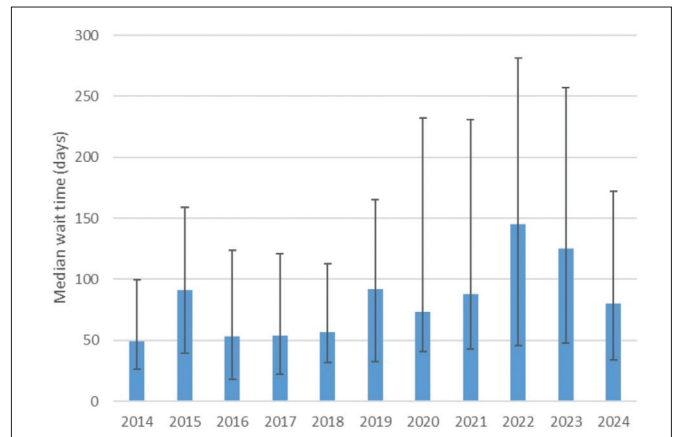
**Introduction:** Transurethral resection of the prostate (TURP) is the gold-standard surgical treatment of lower urinary tract symptoms secondary to benign prostatic hyperplasia (BPH). The Canadian Urological Association (CUA) recommends a maximum wait time of 24 weeks for symptomatic BPH and a maximum of eight weeks for those with urinary retention. Prolonged wait times can lead to prolonged catheterization, recurrent infection, urethral trauma, and impaired surgical outcomes. This study explores 10 years of surgical wait times for TURP in Newfoundland with comparison to recent recommended wait times set by the CUA.

**Methods:** Retrospective chart review was performed for all patients who received monopolar or GreenLight Laser TURP for symptomatic BPH or urinary retention from 2014–2024 at a tertiary care center in St. John's, Newfoundland. Data on wait times, catheter use, and operative case cancellations were analyzed. Ethics approval was obtained through our local healthcare institution and Memorial University.

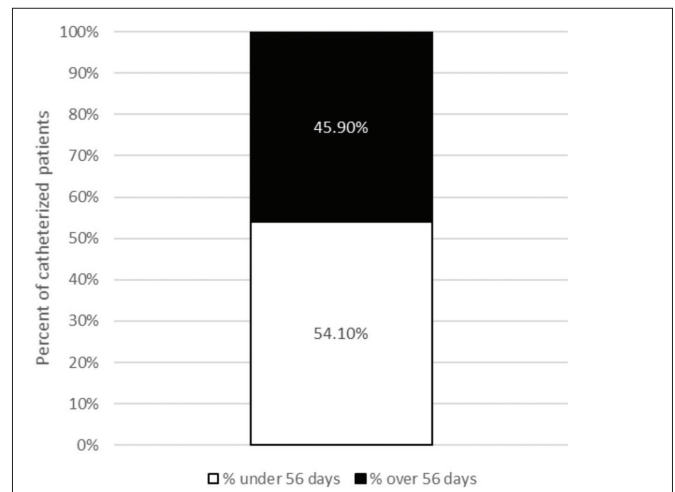
**Results:** A total of 1931 patients were included. From 2014–2024, there was a 63% increase in average wait time for TURP (Figure 1, Table 1). Forty-six percent of catheterized patients did not meet the benchmark of wait times less than eight weeks for urinary retention. Thirty percent of non-catheterized patients did not meet the benchmark of wait times less than 24 weeks for symptomatic BPH (Figures 2, 3, Table 2). Approximately one in 11 patients experienced an avoidable cancellation, which added an average 37-day delay. The frequency of case cancellations increased from 2021 onward. The proportion of TURPs performed using GreenLight Laser increased significantly over the 10-year period ( $p < 0.001$ ).

**Conclusions:** TURP wait times have significantly increased over the last 10 years. Recommended wait times outlined by the CUA are not being met. Avoidable cancellations are a modifiable contributor to prolonged wait times and should be targets for system-level quality improvement.

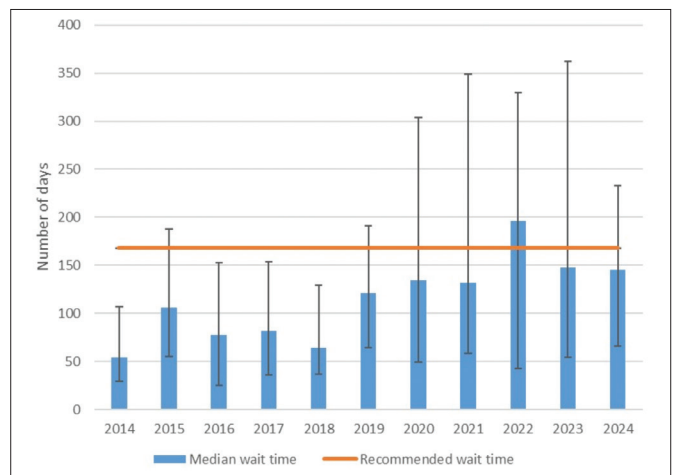
**Acknowledgements:** The authors would like to acknowledge the HREB and RPAC for their support in ethics and organizational approval. We would also like to acknowledge the Newfoundland Center for Health Information for their support in data access.



MP 9.6. Figure 1. Median wait times for TURP procedures per year from 2014–2024. Bars represent median wait times per year. Error bars represent the 1st and 3rd quartiles. Kruskal Wallis confirms the presence of a significant different in wait time across years ( $H=118.67$ ,  $df=10$ ,  $p < 0.001$ ).



MP 9.6. Figure 2. Percentage of catheterized patients meeting 8-week TURP wait time benchmark. White bar represents percent waiting <8 weeks and black bar represents percent waiting >8 weeks.



MP 9.6. Figure 3. Median wait time by year for non-catheterized patients with comparison to the 24-week benchmark. Bars represent median wait time for non-catheterized patients and orange line represents benchmark of 24 weeks. Error bars represent the 1st and 3rd quartiles.

**MP 9.6. Table 1. Median wait times for TURP procedure from 2014–2024**

Year	Median wait time (days)	Interquartile Range (days)	n
2014	49	26–99.75	160
2015	91	39.75–159	162
2016	53.50	18–124	214
2017	54	22.25–120.75	220
2018	57	32–113	175
2019	92	32.50–165.50	233
2020	73	41–232	111
2021	88	43–231	139
2022	145	45.50–281.5	125
2023	125	47.50–257.50	193
2024	80	34–172	199

Note: Kruskal-Wallis H test (118.672,  $p < 0.001$ ) confirmed statistically significant difference in wait times across years.

**MP 9.6. Table 2. Median wait time for TURP in non-catheterized vs. catheterized group per year between 2014 and 2024**

Year	Median wait time in non-catheterized group (days)	IQR	Median wait time in catheterized group (days)	IQR	p
2014	54	29–107	40	19–81.5	0.042
2015	106	55–188	58	24–104	<0.001
2016	78	25–152.5	31	9.5–73	<0.001
2017	82	36–154	32	16–71	<0.001
2018	64	36.5–129	46.5	25–85.25	0.003
2019	121	64–191	35	19.75–73.5	<0.001
2020	134	49.5–304	61.5	33–132.25	0.012
2021	132	58.5–348.75	70	36–144.5	0.002
2022	196.5	43–329.75	110	76–166	0.026
2023	148	54–362.25	90	44–155	0.009
2024	145.5	66–233	40	22–85	<0.001

Note: Mann-Whitney U demonstrated significant difference between groups in all years.

**MP 9.7**

**Repeat TURP is associated with increased perioperative bleeding compared to primary TURP**

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**Introduction:** Repeat transurethral resection of the prostate (re-TURP) is performed in about 8% of patients after primary TURP, most commonly for recurrent or urgent control of bleeding. Elective re-TURP for regrowth is generally assumed to be as safe as primary TURP, despite limited comparative data. Using a large, national database, we compared perioperative outcomes between primary and re-TURP.

**Methods:** The American College of Surgeons National Quality Surgical Improvement Program (NSQIP) database (2013–2023) was used to identify cases undergoing TURP (Current Procedural Terminology [CPT] code 52601) or re-TURP (CPT 62630). Baseline characteristics were compared between groups. The primary outcome was bleeding requiring transfusion within 30 days. Secondary outcomes included hematuria-related postoperative complications identified by International Classification of Diseases (ICD)-10 codes. Univariable and multivariable logistic regression models were used to evaluate predictors of transfusion adjusting for age, ASA class, race, operative urgency, operative time, relevant comorbidities, and pertinent laboratory values.

**Results:** We identified 76 983 TURP and 6556 re-TURP cases (Table 1). Patients undergoing re-TURP more frequently had ASA  $\geq 2$  and were more likely to undergo urgent surgery. On unadjusted analysis, re-TURP was associated with higher rates of transfusion-requiring bleeding and hematuria-related diagnoses compared to primary TURP (Table 2); however, after adjustment for age, urgency, and comorbidities, procedure type was not significantly associated with transfusion risk (aOR 1.3,  $p = 0.41$ ).

**MP 9.7. Table 1. Characteristics of the study cohort**

Patient characteristics	TURP (CPT 52601)	Re-TURP (CPT 52630)	p
Cases, n	76 983	6556	–
Age, years, mean $\pm$ SD	71.3 $\pm$ 9.4	73.8 $\pm$ 9.1	<0.001
White race, n (%)	45 686 (59.3)	3844 (58.6)	0.266
BMI $>30$ , n (%)	24 455 (31.8)	2058 (31.4)	0.264
ASA class, n (%)			<0.001
I	1738 (2.3)	124 (1.9)	–
II	31 624 (41.2)	2466 (37.7)	–
III	39 304 (51.2)	3564 (54.5)	–
IV	4061 (5.3)	381 (5.8)	–
V	12 (0.0)	2 (0.0)	–
General anesthesia, n (%)	60 929 (79.1)	5144 (78.5)	0.204
Urgent/emergent case type, n (%)	1102 (4.5)	175 (9.7)	<0.001
Bleeding disorder, n (%)	2398 (3.1)	242 (3.7)	0.012
Diabetes, n (%)	17 558 (22.8)	1453 (22.2)	0.238
Smoker, n (%)	8334 (10.8)	534 (8.2)	<0.001
Preoperative hematocrit, mean (SD)	40.69 (5.4)	40.44 (5.8)	0.001
Preoperative INR, mean (SD)	1.08 (0.3)	1.08 (0.2)	<0.001
Preoperative albumin, mean (SD)	3.87 (0.6)	3.83 (0.6)	0.005
Preoperative platelet count, mean (SD)	227.90 (72.9)	222.65 (71.0)	<0.001

**MP 9.7. Table 2. Postoperative outcomes**

Postoperative outcomes	TURP (CPT 52601)	Re-TURP (CPT 52630)	p
Operative time in minutes, mean (SD)	57 (38)	49 (36)	<0.001
Total length of hospital stay, days (SD)	1.7 (3.9)	1.8 (4.2)	0.048
Days from operation to discharge, mean (SD)	1.3 (2.4)	1.4 (2.6)	<0.001
Urinary tract infection, n (%)	4,135 (5.4)	330 (5.0)	0.255
Sepsis/septic shock, n (%)	932 (1.2)	74 (1.1)	0.601
Pneumonia, n (%)	291 (0.4)	22 (0.3)	0.664
Organ/space surgical site infection, n (%)	169 (0.2)	13 (0.2)	0.829
New/progressive renal insufficiency, n (%)	247 (0.4)	31 (0.5)	0.067
Venous thrombosis, n (%)	199 (0.3)	13 (0.2)	0.422
Pulmonary embolism, n (%)	141 (0.2)	11 (0.2)	0.897
Cardiac arrest, n (%)	89 (0.1)	10 (0.2)	0.516
Myocardial infarction, n (%)	226 (0.3)	16 (0.2)	0.551
Stroke/CVA, n (%)	91 (0.1)	10 (0.2)	0.560
Transfusion-defined bleeding, n (%)	1,130 (1.5)	125 (1.9)	0.006
Hematuria-related postoperative ICD-10 diagnosis codes, n (%)	835 (1.3)	181 (3.5)	<0.001
Readmission within 30 days, n (%)	4401 (5.7)	368 (5.6)	0.749
Return to OR within 30 days, n (%)	1629 (2.1)	175 (2.7)	0.004

**Conclusions:** Re-TURP shows a higher crude risk of perioperative bleeding requiring transfusion than primary TURP, but this excess risk appears to be driven by patient complexity and operative urgency rather than intrinsic differences in surgical difficulty or anatomy. These data support nuanced counseling regarding perioperative bleeding risk in patients undergoing re-TURP.

**Funding:** Marcus Derigs is supported by the German Research Foundation (DFG) - 550700580.

### MP 9.8

#### Evaluating outcomes from prostate artery embolization for benign prostatic hyperplasia within Edmonton, Alberta, Canada

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**Introduction:** Prostate artery embolization (PAE) is a percutaneous, minimally invasive, guideline-recommended treatment option for benign prostatic hyperplasia (BPH). PAE has been shown to have lower rates of sexual dysfunction and higher rates of surgical reintervention than conventional endoscopic urologic procedures. Its role in our publicly funded health system remains somewhat unclear. This study evaluated the incidence and predictors of PAE failure for catheterized and non-catheterized patients.

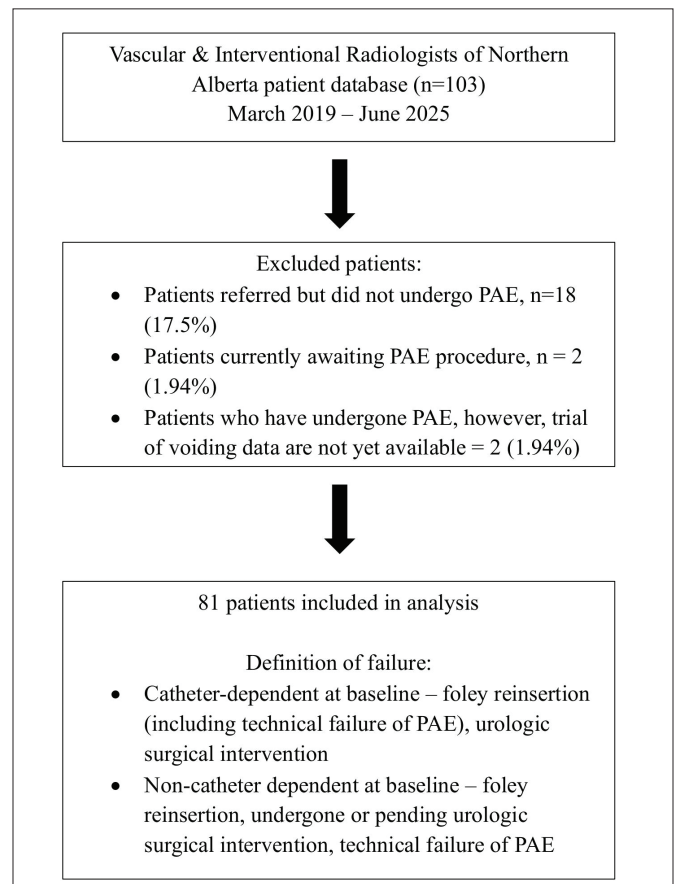
**Methods:** All patients referred for PAE from March 2019 to June 2025 were included (Figure 1). Demographics, procedural details, and post-procedural outcomes were assessed retrospectively. Outcomes were analyzed with descriptive statistics. Categorical variables were compared with Chi-squared testing. Logistic regression was used to assess predictors of PAE failure. Statistical significance was defined as a p-value <0.05.

**Results:** Of 103 referrals, 81 patients (78.6%) underwent PAE. Median age was 78 years (range 71–84). The most common indication was catheter-dependent urinary retention (38/81, 46.9%). Most catheter-dependent patients failed PAE (21/38, 55.3%), requiring long-term catheterization (11/38, 29% immediately failed trial of void; 4/38, 10.5% had delayed retention) or conventional urologic procedure (6/38, 15.8%). Non-catheterized patients had a higher rate of success (32/43, 74.4%) with 11 (25.6%) failures, and mean time to failure of 372 days. Baseline catheter dependence was significantly associated with PAE outcome ( $\chi^2=7.44$ ,  $p=0.006$ ). Prostate volume, age, diabetes, and middle lobe presence were not statistically significant predictors of failure or time to failure.

**Conclusions:** A higher rate of failure was seen in catheter-dependent patients compared to the available PAE literature (55.3% vs. 9–42%).<sup>1-3</sup> Non-catheterized patients had a lower failure rate; however, a small proportion underwent further BPH surgery. Patient selection and referral patterns may account for the higher rate of failure within our catheterized cohort.

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**MP 9.8. Figure 1.** Flow diagram of patients undergoing prostate artery embolization in Edmonton from March 2019 to June 2025.

**MP 9.9**

**Point-of-care ultrasound vs. bladder scanners for assessing bladder volume**

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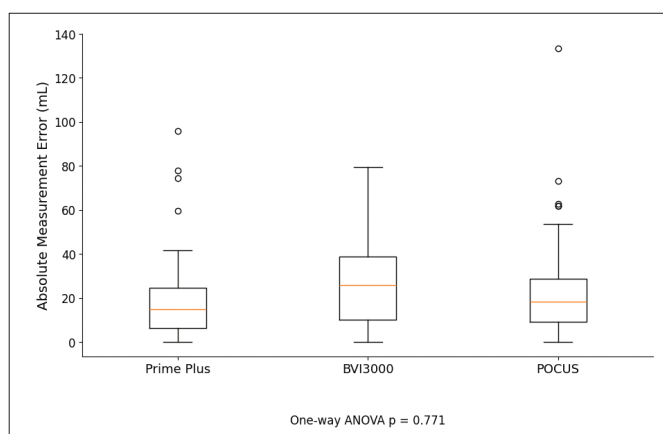
**Introduction:** Point-of-care ultrasound (POCUS) devices have become increasingly versatile, accessible, and cost-effective, facilitating their use across multiple clinical settings. In contrast, typical bladder scanners are usually limited to specialized clinics and perioperative settings. The accuracy of bladder scanners varies by device model and patient characteristics, with some studies reporting substantial measurement errors under certain conditions. Although POCUS use has become widespread, no studies have directly compared POCUS to commercially available bladder scanners. This study aimed to compare the accuracy/reliability of POCUS bladder volume measurements with those of two bladder scanners, using urinary catheterization as the gold standard.

**Methods:** Under institutional review board approval (REB protocol #24-154) at St. Michael's Hospital in Toronto, Canada, 30 patients undergoing bladder catheterization before surgery were prospectively enrolled. Patients with large bladder tumors, bladder stones, prior bladder surgery, or indwelling catheters were excluded. Ahead of catheterization, bladders were scanned by two raters using POCUS (Vscan AirCL) and two bladder scanners (VERATHON Prime Plus and BVI3000). POCUS bladder volumes were computed with shape-specific equations using the appropriate correction coefficients. For each rater, a box plot was used to visualize the absolute measurement errors of each imaging modality, and a one-way ANOVA test was used to assess differences in the absolute errors across the three modalities. For each modality, agreement between the two raters (inter-rater reliability) was assessed with intraclass correlation coefficient testing ICC (2,1).

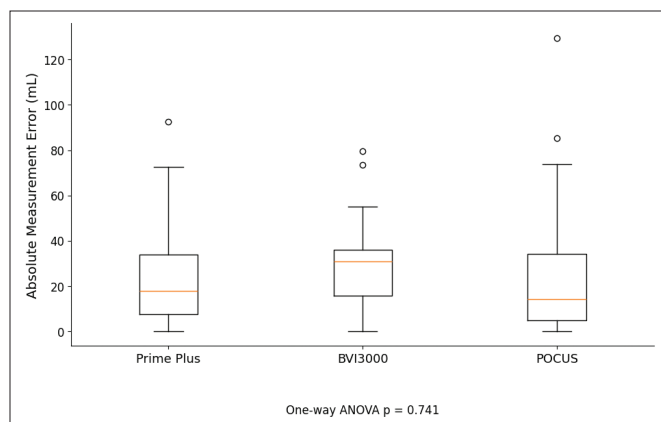
**Results:** Thirty patients were included. The median catheterized bladder volume was 108 mL (IQR 42–180). For rater 1, the mean absolute error was 22±24 mL with Prime Plus, 26±19 mL with BVI3000, and 27±29 mL with POCUS (Figure 1). For rater 2, the mean absolute error was 23±22 mL with Prime Plus, 28±19 mL with BVI3000, and 25±31 mL with POCUS (Figure 2). ANOVA revealed no significant differences in error rates across the three devices for rater 1 (p=0.77) or rater 2 (p=0.74). Inter-rater reliability was excellent, with ICC(2,1) values of 0.98 (Prime Plus), 0.96 (BVI 3000), and 0.94 (POCUS).

**Conclusions:** Our results revealed comparable accuracy between POCUS and two commercially available bladder scanners. When combined with the lower cost and superior portability of POCUS, these findings support its use as an alternative for bladder volume assessment.

**Acknowledgements:** The authors would like to thank the attendings, operating room nurses, and support staff at the Division of Urology at St. Michael's Hospital for their support, without which this project would not have been possible.



**MP 9.9. Figure 1.** Absolute measurement errors for rater 1.



**MP 9.9. Figure 2.** Absolute measurement errors for rater 2

**MP 9.10**

**Does benign prostatic hyperplasia affect the risk of repeat TURBT?**

Nicholas Khoo<sup>1</sup>, Shane Cauley<sup>1</sup>, Clara Goebel<sup>1</sup>, Benjamin Rubin<sup>1</sup>, Jake Bleau<sup>1</sup>, Mark Plante<sup>2</sup>, Jenna Winebaum<sup>2</sup>, Richard Grunert<sup>2</sup>, Seyed Mohammad Mohaghegh Poor<sup>2</sup>, Brian Irwin<sup>2</sup>

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**Introduction:** Non-muscle-invasive bladder cancer (NMIBC) is one of the most challenging urologic cancers to treat. These patients need to be followed with cystoscopy and imaging due to the high risk of recurrence. Benign prostatic hyperplasia (BPH) is a prevalent condition in aging men and is associated with chronic inflammation and mucosal irritation, which are potential contributors to carcinogenesis. This investigation aims to determine whether a BPH diagnosis influences the risk of requiring a repeat transurethral bladder tumor resection (TURBT).

**Methods:** We conducted a retrospective study using the TriNetX Diamond database. The cohorts included men with NMIBC who underwent TURBT. The cohort was then separated into two groups: men diagnosed with BPH before undergoing their TURBT and men who were not. For men with BPH, we excluded patients who underwent BPH surgeries. The risk of repeat TURBT was determined for both groups. An absolute risk reduction between the cohorts was calculated with TriNetX's statistical analysis. Statistical significance was defined as p<0.05.

**Results:** Patient demographics are listed in Table 1. For patients without BPH, there was a 35.7% risk for requiring a repeat TURBT within one year and 43.5% within five years. For patients with BPH, the risk of requiring a repeat TURBT was found to be 40.2% and 51.2% within one and five years, respectively. The risk difference between the cohorts for repeat TURBT within one and five years are -4.51% (95% CI -3.00 to -6.02%) and -7.74% (95% CI -6.12 to -9.30%), respectively, showing a lower risk for the group without the BPH co-diagnosis (p<0.0001).

**Conclusions:** This preliminary large sample population investigation demonstrates that there may be a relationship between BPH that is not surgically treated and repeat TURBT given that we saw up to a 7.74% risk increase of a repeat TURBT in patients with BPH at the time of their index TURBT. These findings raise questions about potentially treating BPH in patients with NMIBC and require further prospective validation.

**Acknowledgements:** This abstract was presented at the AUA 2026 Annual Meeting.

**MP 9.10. Table 1. Demographics of cohorts**

	Men with no BPH	Men with BPH
Population of cohort	7927	7869
Mean age at index TURBT (years)	67.8	72.9
Cohort with T1 staging	55.6%	50.0%
Cohort with Ta staging	33.3%	37.5%
Cohort with Tis staging	11.1%	12.5%

**MP 9.11****Mapping the landscape of BPH research: Comparison between expert priorities and publication trends from 2010–2025**

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**Introduction:** Expert opinion shapes research priorities in urology, guiding efforts to address key knowledge gaps that affect patient care. In benign prostatic hyperplasia (BPH), these priorities are not clearly defined and it remains unclear how well current publications align with them. This study aimed to identify expert-defined BPH research priorities and evaluate the extent to which publications from 2010–2025 reflect these targets.

**Methods:** Two scoping reviews were conducted using MEDLINE and Web of Science. The first synthesized consensus statements and society documents to identify expert-defined BPH research priorities. The second characterized all high-impact BPH publications from 2010–2025 according to these priorities. Alignment between weighted priorities and publication trends was assessed using Chi-squared testing.

**Results:** A total of 12 363 records were screened, and 3522 studies were included. Four major priority areas were identified: minimally invasive surgical therapies (MIST; 33.3%), diagnosis/pathophysiology/epidemiology (33.3%), conservative management (22.2%), and laser enucleation (11.1%). Significant misalignment was observed between expert-defined priorities and research output ( $\chi^2=1183.4$ ). Pathophysiology was markedly over-represented, while MIST and conservative management were substantially under-represented. Post-2018 analyses showed increasing focus on emerging surgical innovations, but overall misalignment persisted ( $p<0.001$ ).

**Conclusions:** This study consolidates expert-defined BPH research priorities and compares them with contemporary literature. Despite emerging interest in surgical innovations, priority areas such as MIST and conservative management remain under-represented. A persistent gap exists between expert guidance and research activity, underscoring the need to realign future work toward these under-addressed areas to better support patient-centered BPH care.

**Acknowledgements:** This abstract was presented at 42nd World Congress of Endourology and Uro-Technology.

**MP 9.12****Does surgery for benign prostatic hyperplasia affect the risk of repeat TURBT?**

Nicholas Q. Khoo<sup>1</sup>, Shane Cauley<sup>1</sup>, Clara Goebel<sup>1</sup>, Benjamin Rubin<sup>1</sup>, Jake Bleau<sup>1</sup>, Mark Plante<sup>2</sup>, Jenna Winebaum<sup>2</sup>, Richard Grunert<sup>2</sup>, Brian Irwin<sup>2</sup>, Seyed Mohammad Mohaghegh Poor<sup>2</sup>

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**Introduction:** Non-muscle-invasive bladder cancer (NMIBC) is one of the most challenging urologic cancers to treat. These patients need to be followed with cystoscopy and imaging due to high recurrence risk. Benign prostatic hyperplasia

(BPH) is a prevalent condition in aging men and it is associated with increased chronic inflammation and mucosal irritation, which are potential contributors to carcinogenesis. We explore whether performing outlet intervention in men with NMIBC is associated with a reduction in bladder cancer recurrence.

**Methods:** We conducted a retrospective study using the TriNetX Diamond database. The study included men with BPH and a diagnosis of NMIBC after transurethral resection of bladder tumor (TURBT). We created two cohorts, one that had men who underwent surgical intervention for BPH, and one that had men with no associated BPH surgical treatment in their health record. The risk of requiring a repeat TURBT was determined for both groups of men. An absolute risk reduction between the cohorts was calculated with TriNetX's statistical analysis. Statistical significance was defined as  $p<0.05$ .

**Results:** Patient demographics are listed in Table 1. For men with no BPH surgery, a 40.2% risk was seen for requiring a repeat TURBT within the first year and 51.2% within five years. In contrast, for the men who had BPH surgery, the risk of requiring a repeat TURBT was found to be 32.9% and 44.0% within the first year and five years, respectively. The risk difference between the two groups for repeat TURBT within the first year and five years are 7.34% (95% CI 4.91–9.77) and 7.167% (95% CI 4.62–9.71), respectively, and both were found to be statistically significant ( $p<0.0001$ ).

**Conclusions:** This retrospective cohort study with a large sample size demonstrates a relationship between surgical management of BPH and a decreased risk of repeat TURBT in patients with NMIBC and BPH. These findings can potentially change current patterns of practice and need to be further validated with prospective studies.

**Acknowledgements:** This abstract was presented at the AUA 2026 Annual Meeting.

**MP 9.12. Table 1. Demographics of cohorts**

	Men with no BPH surgery	Men with BPH surgery
Population of cohort	7664	1810
Mean age at index TURBT (years)	72.9	74.6
Cohort with T1 staging	50.0%	42.4%
Cohort with Ta staging	37.5%	45.4%
Cohort with Tis staging	12.5%	12.1%

**MP 9.13****Aquablation for the treatment of benign prostatic hyperplasia in men with large prostates (>80g): A systematic review and meta-analysis of changes in functional outcomes at 12 months**

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**Introduction:** Surgical management of lower urinary tract symptoms in men with large prostates (>80 g) can be challenging due to higher procedural complexity. In recent years, Aquablation has gained traction as a treatment option for BPH, with high levels of efficacy and a favorable side effect profile. There is emerging evidence for its use in treatment of larger glands. In this systematic review and meta-analysis, we aimed to summarize the evidence on the use of Aquablation for large prostates >80 g and investigate the impact on functional outcomes 12 months after therapy.

**Methods:** This review was conducted in accordance with PRISMA guidelines. A literature search was conducted in the EMBASE, MEDLINE, Scopus, and Cochrane library databases. Abstracts, editorial letters/comments, and previous reviews or pooled analyses were excluded. Risk of bias was assessed with the

ROB 2 tool for randomized trials and ROBINS-I tool for observational studies. Descriptive statistics were pooled from included studies that reported them. For eligible studies that reported preoperative and 12-month functional outcomes, mean differences and standard deviations of changes were calculated. Outcomes reported in three or more studies were included in the meta-analysis; mean differences and standard deviations of changes were pooled using an inverse-variance weighted random-effects model with REML estimation of  $\tau^2$ .

**Results:** Four studies were included.<sup>1-4</sup> Pooled mean operative time was 59.28±42.76 min (n=254). Pooled perioperative complication and transfusion rates were 32/153 (21%) and 13/212 (6%), respectively. Pooled retreatment rate was 16/212 (7.5%). Ejaculatory function at 12 months was preserved in 113/139 (81%) patients. Four of the studies were included in the meta-analysis for IPSS (n=289), and three of them were included for Qmax (n=256). At 12 months, the raw mean change in IPSS from baseline was -14.305 (95% CI -17.069 to -11.541, p<0.001). Similarly, the raw mean change in Qmax was +10.229 (95% CI 7.563–12.895, p<0.001). Meta-analyses of both outcomes showed significant statistical heterogeneity.

**Conclusions:** Our results show that aquablation improves IPSS and Qmax in men with large prostates while offering a favorable safety profile. More studies are required to enable meta-analyses of other functional outcomes in this population. References:

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### MP 9.14

#### Impact of ice-chilled saline catheter balloon and bladder irrigation on perioperative hemostasis, pain, and recovery following Aquablation therapy for BPH: A novel, contemporary, comparative series

Kevin C. Zorn<sup>1</sup>, Adel Arezki<sup>2</sup>, Peter Gilling<sup>3</sup>, Neil Barber<sup>4</sup>, Silvia Secco<sup>5</sup>, Bilal Chughtai<sup>6</sup>, Rahul Mehan<sup>7</sup>, Dean Elterman<sup>8</sup>, Feras Al Jaafari<sup>9</sup>

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**Introduction:** Aquablation has emerged as a standardized, robotic, waterjet, ablative therapy for benign prostatic hyperplasia (BPH), offering precise resection with minimal thermal injury. Postoperative bleeding and pain, however, remain clinical considerations. This study evaluated the effect of using chilled saline (1–4 °C) for intraprostatic balloon fossa tamponade and early postoperative bladder irrigation on perioperative bleeding, analgesic use, and recovery metrics compared to conventional room-temperature (22–25 °C) saline management.

**Methods:** A retrospective review was performed on 100 consecutive men who underwent Aquablation between March and June 2025 at a single, high-volume

ASC center. All patients underwent standardized Aquablation with adjunctive anterior bipolar resection and hemostasis. The PRICE (Prostate Rapid Ice Compression Endo-hemostasis) group (n=50) received 1–4 °C saline for inflation of the 24 F Rusch three-way catheter balloon (60–100cc) and the first 3 L of bladder irrigation, followed by room-temperature irrigation. The control group (n=50) received room-temperature saline for both balloon inflation and irrigation. All patients were warmed perioperatively with forced-air Bair Hugger system. Demographics, perioperative variables, pain scores, irrigation volumes, hemoglobin change, and three-month outcomes were analyzed.

**Results:** Baseline demographics and prostate characteristics were comparable between groups. Intraoperative parameters, including operative and cautery times, were similar. The cold-saline group demonstrated significantly reduced morphine milligram equivalent (MME) use in recovery (3.2 vs. 12.3, p<0.01), shorter postoperative recovery time (3.4 h vs. 4.5 h, p=0.02), and markedly fewer 3 L irrigation bags used (3.4 vs. 8.7, p<0.01). No significant differences were observed in hemoglobin drop, Clavien-Dindo complications, or functional outcomes (IPSS, Qmax, PVR, SHIM) up to three months. Antegrade ejaculation preservation exceeded 90% in both groups (Table 1). All patients were discharged same-day without transfusion or reoperation for bleeding.

**Conclusions:** Use of chilled saline for Foley balloon compression and early bladder irrigation following Aquablation significantly reduced analgesic requirements, irrigation volume, and recovery time, without increasing complications or affecting functional outcomes. This simple, cost-neutral modification may enhance postoperative comfort and hemostasis. Prospective validation is warranted. To the best of our knowledge, this is the first reporting of this simple technique globally accessible to urology community without additional costs.

MP 9.14. Table 1.

	N=50 Conventional Foley technique	N=50 PRICE + cold bladder irrigation	p- value
<b>PREOPERATIVE PARAMETERS</b>			
Mean age, years (range)	68.3 (59-86)	67.9 (56-82)	0.72
Mean BMI, kg/m2 (range)	23.1 (19-32)	24.7 (20-31)	0.69
Mean TRUS prostate volume, cc (range)	<b>118 (56-205)</b>	<b>124 (61-192)</b>	0.10
Mean anterior bladder wall thickness (mm)	10.5 (7-18)	11.2 (6-22)	0.66
Median lobe (%)	27 (54%)	29 (58%)	0.72
Foley retention (%)	33 (66%)	31 (62%)	0.67
Mean preoperative IPSS (range)	25.6 (17-35)	24.9 (16-35)	0.82
Mean preoperative QOL (range)	4.7 (3-6)	4.5 (3-6)	0.65
Mean preoperative Qmax, mL/sec (range)	5.9 (2-10)	6.1 (2-11)	0.43
Mean preoperative PVR, mL (range)	337.6 (94-872)	310.2 (85-995)	0.24
Mean preoperative SHIM (range)	17.7 (10-25)	18.4 (13-25)	0.31
Mean preoperative MSHQ Function (range)	9.3 (8-11)	9.1 (8-11)	0.88
Mean preoperative MSHQ Bother (range)	2.0 (1-3)	2.2 (1-3)	0.67
Mean preoperative PSA, ng/dL (range)	6.4 (1.4-15)	7.1 (2.8-13)	0.48