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# Comparison of Urolift and Rezūm for BPH – A Focus on Drug-Free Status, Unplanned Admissions, and Functional Outcomes in IPSS and Uroflometry results

## Background

- Minimally invasive surgical therapies (prostatic urethral lift, PUL and water vapour thermal therapy, WVTT) are becoming popular for their safety and preservation of sexual function
- Studies have demonstrated that WVTT and PUL both show durable improvement in IPSS for 5 years without a clinically significant impact on sexual function post-treatment
- Key questions unanswered regarding the outcomes PUL v.s. WVTT
  - The proportion of patients who achieve drug-free status
  - Real-world unplanned readmission rates
  - Predictors of reintervention, such as preoperative catheter dependence, baseline comorbidities, and prostate size, which are currently not well characterised in trial data

## Methodology

- BPH patients (age ≥50) with prostate volumes 30-80 cc who underwent either PUL or WVTT between January 2021 and December 2024 were identified
- The two groups were matched, using a 1:3 propensity score matching; multivariable logistic regression analyses were performed on the full unmatched cohort
- The primary outcome is drug-free status, defined as the cessation of alpha-blockers and 5-alpha reductase inhibitors at 6 months post-procedure
- Secondary outcomes include unplanned readmission within 30 days

## Results

- In total, 421 eligible patients were analysed (363 WVTT; 58 PUL); Baseline characteristics of patients are shown in table 1
- The results for primary and secondary outcomes are summarised in Table 2a
- Primary outcome – Drug free status
  - In propensity score matched analyses (174 WVTT; 58 PUL), PUL demonstrated superior drug-free status at 6 months compared to WVTT (weighted OR: 2.62, [95% CI: 1.22-5.61], p=0.013)
  - The association remained significant in multivariable regression analysis (adjusted OR: 2.41 [95% CI: 1.31–4.58], p=0.006).
- Secondary outcome – 30-day unplanned readmission
  - No statistically significant difference in 30-day readmission rates between the two groups in either propensity score (p=0.097) or multivariable analysis (p=0.123)
  - Possibly due to low number of readmission events (WVTT: 30; PUL: 5)
  - The causes of readmission in the matched cohort are summarised in Table 2b
- No reintervention in the matched cohort within 1 year, including repeat MISTs or TURP
- Subgroup analysis
  - Examined the 6-month drug-free status across different patient demographics
  - Revealed that PUL was associated with a significantly higher likelihood of being drug-free across nearly all subgroups, including patients with prostate size >50cc (OR 3.68, 95% CI 1.50–9.02, p = 0.004), catheter-dependent patients (OR 2.54, 95% CI 1.13–5.70, p = 0.024), and in patients without median lobe treatment (OR 2.53, 95% CI 1.18–5.43, p = 0.018
  - The results of subgroup analysis are summarised in Table 3

**Table 1.** Baseline clinical characteristics and balancing diagnostics before and after propensity score matching

| Parameters | Before PS matching | | | After PS matching | | |
|---|---|---|---|---|---|---|
| | Rezūm (n = 363) | UroLift (n = 58) | ASD | Rezūm (n = 174) | UroLift (n = 58) | ASD |
| Age, years | 73.0 ± 8.5 | 72.0 ± 7.8 | 0.13 | 72.6 ± 8.6 | 72.0 ± 7.8 | 0.08 |
| BMI, kg/m$^2$ | 23.5 ± 3.4 | 24.1 ± 4.3 | 0.14 | 24.0 ± 3.6 | 24.1 ± 4.3 | 0.02 |
| Prostate size, cc | 54.5 ± 15.2 | 51.5 ± 12.7 | 0.24 | 52.0 ± 15.4 | 51.5 ± 12.7 | 0.04 |
| Catheter-dependent | 257 (70.8) | 34 (58.6) | 0.25 | 105 (60.3) | 34 (58.6) | 0.04 |
| DM | 57 (15.7) | 14 (24.1) | 0.20 | 42 (24.1) | 14 (24.1) | 0 |
| IHD | 34 (9.4) | 12 (20.7) | 0.28 | 30 (17.2) | 12 (20.7) | 0.09 |
| CVA | 39 (10.7) | 11 (19.0) | 0.21 | 30 (17.2) | 11 (19.0) | 0.04 |

Continuous variables were presented as mean ± standard deviation while categorical variables were presented as number (percentage).
ASD, absolute standardized difference; BMI, body mass index; DM, diabetes mellitus; IHD, ischemia heart disease; CVA, cerebrovascular accident.

**Table 2a.** Summary of results of multivariable analyses and propensity score matching (Rezūm as reference) on drug-free status and readmission rate.

| Multivariable regression | OR (95% CI) | *P* |
|---|---|---|
| 6-month drug-free status | 2.41 (1.31 – 4.58) | 0.006 |
| 30-day readmission rate | 0.46 (0.15 – 1.13) | 0.123 |
| **Propensity score matching** | **OR (95% CI)** | ***P*** |
| 6-month drug-free status | 2.62 (1.22 – 5.61) | 0.013 |
| 30-day readmission rate | 0.45 (0.17 – 1.16) | 0.097 |

OR, odds ratio; CI, confidence interval.

**Table 2b.** Causes of readmission in the matched cohort.

| Causes of readmission | Rezūm (n = 30) | UroLift (n = 5) |
|---|---|---|
| Hematuria | 11 (36.7%) | 1 (20%) |
| Urinary tract infection | 7 (23.3%) | 0 (0%) |
| Recurrent retention | 6 (20%) | 1 (20%) |
| Sepsis | 1 (3.3%) | 0 (0%) |
| Other causes | 5 (16.7%) | 0 (0%) |
| Missing / None? | | 3 (60%) |

**Table 3.** Subgroup analysis on 6-month drug-free status (Rezūm as reference).

| | No. of patients | OR (95% CI) | *P* | *P for interaction* |
|---|---|---|---|---|
| Prostate size | | | | 0.217 |
| ≤ 50 cc | 111 | 1.62 (0.59 – 4.48) | 0.353 | |
| > 50 cc | 121 | 3.68 (1.50 – 9.02) | 0.004 | |
| Catheter-dependent | | | | 0.891 |
| Yes | 139 | 2.54 (1.13 – 5.70) | 0.024 | |
| No | 93 | 2.31 (0.74 – 7.27) | 0.151 | |
| Median lobe treated | | | | 0.792 |
| Yes | 66 | 2.10 (0.59 – 7.50) | 0.253 | |
| No | 161 | 2.53 (1.18 – 5.43) | 0.018 | |

OR, odds ratio; CI, confidence interval.

## Conclusion

- PUL demonstrates statistically significant advantage in achieving drug-free status at six months, which may translate into fewer medication-related side effects and enhanced quality of life, making it a compelling option for patients whose primary goal is to discontinue medical management for BPH.