How do PUL, Water Vapor Therapy, and Laser Enucleation Compare to TURP?

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**LUTS/BPH Treatments**

- Minimally-Invasive Surgical Therapy (MIST)
  - Prostatic Urethral Lift
  - Water Vapor Therapy
  - PVP?

- Standard endoscopic BOO treatments
  - TURP
  - PVP
  - Laser Enucleation
How Do These Compare To the Gold Standard?

Vs.
Vs.

- Randomized trial – PUL vs TURP
- IPSS > 12, Qmax ≤ 15, prostate volume ≤ 60cc
- 80 subjects randomized 1:1
- 2 year f/u – IPSS, BPHII, SHIM, MSHQ-EjD, Jenkins Sleep Questionnaire

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<tr>
<th></th>
<th>IPSS</th>
<th>Qmax</th>
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<tr>
<td></td>
<td>PUL</td>
<td>TURP</td>
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<tr>
<td>Baseline</td>
<td>21.4</td>
<td>22.8</td>
</tr>
<tr>
<td>24 months</td>
<td>12.2</td>
<td>7.4</td>
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<tr>
<td>Change</td>
<td>-9.2</td>
<td>-15.3</td>
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<td>p = 0.004</td>
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<tr>
<th></th>
<th>QoL</th>
<th>BPHII</th>
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<tr>
<td></td>
<td>PUL</td>
<td>TURP</td>
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<tr>
<td>Baseline</td>
<td>4.6</td>
<td>4.6</td>
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<tr>
<td>24 months</td>
<td>2.1</td>
<td>1.3</td>
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<tr>
<td>Change</td>
<td>-2.5</td>
<td>-3.3</td>
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<tr>
<td>p = 0.066</td>
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Erectile Function – Change in mean SHIM scores statistically similar in both groups

Ejaculatory Function – EjF preserved in PUL (p<0.001)
Ejaculatory Bother – Bother similar between groups (p=0.771)

Continence similar between groups at 2 years

Durability – Additional procedures required in 11% PUL, 6% TURP

2 year QoL outcomes similar, voiding parameters better for TURP
Limitations – prostate size, long-term outcomes
How Do These Compare To the Gold Standard? Vs.
McVary et al, Urol 2019;126:171.

- 4-year/3-year outcomes of treatment arm/crossover arm of RCT for WVT
- IPSS $\geq 13$, Qmax $\leq 15$, prostate volume 30-80cc
- 90/137 treatment subjects analyzed at 4 years
- 53/61 control subjects opted for crossover – 30 analyzed at 4 years
WVT TURP*
Baseline 21.4
48 months 11.4 6.9
Change -10.1

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<tr>
<th>Baseline</th>
<th>WVT</th>
<th>TURP*</th>
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<th>TURP*</th>
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<td>13.7</td>
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- WVT QoL and BPHII similar to PUL in reported trials
- Sexual function measures (IIEF, EjF, EjF Bother) for WVT similar to PUL in reported trials
- *Omar et al, BJU Int 2014;113:24
Retreatment Rates

• PUL – 13.6% surgical at 5 years, 10.7% taking medication (L.I.F.T. study, Roehrborn et al 2017)

• WVT – 4.4% surgical at 4 years, 5.2% taking medication (McVary et al 2019)

• TURP – 4% surgical at 3 years, 22% taking medication
  • Strope et al: “Use of Medical Therapy and Success of Laser Surgery and Transurethral Resection of the Prostate for Benign Prostatic Hyperplasia”. Urol 2015:85;341

• Commercial Claims Database – use in community

• Included anti-spasmodics – MIST trials did not include use of anti-spasmodics in analysis
Cost Effectiveness

- ComboRx vs WVT vs PUL vs PVP vs TURP
- Estimated treatment effect and cost in 6 month cycles up to 2 years
- ComboRx 1/3 symptom relief of MIST
- WVT cost $900 more than ComboRx
- PUL cost 2x more than WVT
- TURP better by ~4 points IPSS to MIST
- TURP similar cost to PUL

How Do These Compare To the Gold Standard?

- Systematic review and meta-analysis of transurethral procedures for BPH – no large prostate volumes (>120cc)

- HoLEP/ThuLEP vs m-TURP
  - LEP better IPSS (0.91; p=0.003), Qmax (1.59 mL/s; p=0.02), no difference in QoL
  - Complications – higher transfusion rate for m-TURP – short- and long-term similar between groups

- HoLEP/ThuLEP vs b-TURP
  - Similar IPSS, Qmax, QoL on 2-yr follow up
  - LEP shorter catheterization, hospitalization, lower risk of bleeding, similar long-term complication rates
Conclusions

• MIST give favorable QoL and bother outcomes as TURP

• MIST long-term retreatment rates in community still unknown

• LEP as effective as b-TURP for small-moderate size prostates, likely more effective for large prostates – regionalization affects outcomes