**Do high residual volumes predict successful outcomes after Transurethral Resection of Prostate for Chronic Urinary Retention?**

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**BACKGROUND**

- ICS defines Chronic Urinary Retention (CUR) as a non-painful bladder with a chronically high Post-Void Residual (PVR).
- High PVR may be considered >300-400mls.
- High residual volumes with weak detrusor function may result in poor surgical outcomes.
- Pre-operative utilisation of urodynamic studies (UDS) is variable.
- Aim: To evaluate a correlation between high PVR and successful voiding after Transurethral resection of prostate (TURP) in patients with CUR.

**METHODS**

- Retrospective electronic patient record (EPR) based study over 6 years (March 2012 and December 2018).
- A histopathological database of all TURP patients was obtained.
- Identified patients with CUR, defined as any combination of lack of pain, large residual volume on initial catheterisation, impaired renal function and upper tract dilatation.
- Data collected for demographics, co-morbidities, residual volumes, pre-operative UDS and surgical outcomes
- A successful outcome was defined as complete freedom from catheter.

<table>
<thead>
<tr>
<th>Category</th>
<th>Total (685 patients)</th>
<th>Result of TURP</th>
<th>p-value</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Successful</td>
<td>Unsuccessful</td>
</tr>
<tr>
<td>CUR diagnosis</td>
<td>93</td>
<td>49 (52.6%)</td>
<td>44 (47.4%)</td>
</tr>
<tr>
<td>Mean Age</td>
<td>73 (51 – 95)</td>
<td>70</td>
<td>75</td>
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<tr>
<td>Mean Residual Volume</td>
<td>1.4L (0.6L – 4L)</td>
<td>1.2L (0.4L – 3L)</td>
<td>p-value &gt; 0.05</td>
</tr>
</tbody>
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**RESULTS**

- Total TURP patients: 685. CUR patients: 93
- Mean age: 73 years (51 - 95 years)
- Successful: 49 (52.6%) of these got rid of their catheters. Mean age: 70
- Mean residual volume: 1.4 L (range = 0.6 L – 4 L)
- Unsuccessful: 44 (47.4%) continued to use it post-operatively. Mean age: 75
- Mean residual volume: 1.2 L (range = 0.4 L – 3 L)
- Difference of mean age was statistically significant (p-value < 0.05).
- Difference of residual volume was not statistically significant.
- Outcomes of patients with PVR ≥15L were no different from patients with PVR <1.5L.
- No Pre-operative UDS: 47 of 93 CUR patients.
- Successful: 15 (32%)
- Unsuccessful: 32 (68%)
- Pre-operative UDS: 46 of 93 CUR patients.
- Bladder outflow obstruction (BOO): 40 (87%)
- Detrusor hypocontractility: 6 (13%)  
- Successful post UDS: 29 of 46 patients (63%).
- Unsuccessful post UDS: 17 of 46 (37%) (including 14 with BOO).
- Post-operative UDS was not carried out in this group to rule out persistent BOO. Initial failure of outflow surgery could be due to incomplete relief of obstruction.
- Routine use of pre-operative UDS could have resulted in avoidance of TURP.
- Co-morbidities contributing to poor outcomes in the ‘success’ and ‘failure’ groups were not statistically different (Chi-square test; p-value > 0.05).

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**CONCLUSIONS**

- Age is predictive for outcomes of TURP for CUR
- The outcomes of TURP in patients with CUR are not dependent on residual volume and co-morbidities.
- Pre-operative UDS should be used routinely to select patients for surgery.
- Among those who did not have pre-operative urodynamics, only 1/3 of patients had a successful outcome.
- For patients with unsuccessful outcomes from surgery, post-operative UDS should be carried out to exclude persistent obstruction.