

## THE NEED FOR CONTINUAL PHARMACOTHERAPY FOR LOWER URINARY TRACT SYMPTOMS (LUTS) FOLLOWING TRANSURETHRAL RESECTION OF THE PROSTATE (TURP) CAN BE PREDICTED BY THE RESECTED PROSTATE WEIGHT - A NATION-WIDE POPULATION BASED STUDY

### Hypothesis / aims of study

Under the treatment guideline of benign prostatic obstruction (BPO), transurethral resection of prostate (TURP) is widely accepted procedure for relieving the obstructive symptoms. However, many patients still complained of lower urinary tract symptoms (LUTS) after TURP and the same medication as prescribed before TURP were noted. We did the research in order to prove the resected prostate weight being a predictive factor for continual pharmacotherapy after TURP.

### Study design, materials and methods

The subset of the National Health Insurance Research Database (NHIRD) of Taiwan contains data on all outpatient and inpatient medical benefit claims and covers more than 99% of Taiwan populations. According to the International Classification of Disease (ICD) codes-9, all patients, who received TURP in the period from 2008 to 2009, were recruited with meanwhile following diagnostic codes, 600.X, 601.X, and 602.X. The patients were excluded if the diagnosis with cancer of prostate was recorded in one month after operation. Due to different benefit claims under different resected prostate weight, we further subdivided the patients into three subgroups, small weight group (< 15 grams), medium weight group (15–50 grams), large weight group (>50 grams). Medication with alpha-blocker, antimuscarinic drug, bethanechol at 3 months, and 6 months after TURP was recorded. In addition, the medication must be prescribed by urologist at outpatient department for more than 14 days. Postoperatively continual medication was further compared by logistic regression model.

### Results

Among the total population of 22.8 millions, 18698 patients received TURP from January of 2008 to December of 2009. In 18698 patients, 829 (4.4%) were excluded due to prostate cancer diagnosed in one month after TURP. The patient's number of each subgroups were 8126 (45.5%) in small weight group, 8283 (46.3%) in medium weight group, and 1460 (8.2%) in large weight group. The patients' number of re-medication with alpha blocker at 3 months and 6 months after TURP in each subgroup (small weight, medium weight, large weight) were 2669 (32.9%), 1788 (21.6%), 249 (17.1%) and 2250 (27.7%), 1443 (17.4%), 204(14.0%), respectively. The patients' number of re-medication with antimuscarinic drug at 3 months and 6 months after TURP in each subgroup were 1779 (21.9%), 1325 (16.0%), 199 (13.6%) and 1339 (16.5%), 913 (11.0%), 118 (8.3%), respectively. The patients' number of re-medication with bethanechol at 3 months and 6 months after TURP in each subgroup were 991(12.2%), 569 (6.9%), 69 (4.7%) and 773 (9.5%), 387 (4.7%), 46 (3.2%), respectively. Details of different relative risk of continual pharmacotherapy at 3 months and 6 months after TURP were characterized in the table 1.

Table 1. Relative risk of continual pharmacotherapy after TURP by using logistic regression model\*

	3 months after TURP			6 months after TURP		
	Adjust OR	95% CI	p value	Adjust OR	95% CI	p value
$\alpha$ – blocker**						
Small v.s. Large	2.35	2.03-2.71	<0.001	2.34	2.00-2.74	<0.001
Medium v.s. Large	1.33	1.15-1.54	<0.001	1.29	1.10-1.52	0.002
Anticholinergic**						
Small v.s. Large	1.84	1.57-2.16	<0.001	2.31	1.89-2.81	<0.001
Medium v.s. Large	1.23	1.05-1.45	0.011	1.44	1.17-1.75	<0.001
Bethanechol**						
Small v.s. Large	2.73	2.12-3.51	<0.001	3.14	2.32-4.26	<0.001
Medium v.s. Large	1.47	1.14-1.91	0.003	1.49	1.09-2.04	0.012

\*: Adjust with demography Factors: age, urbanized level, geographic location.

\*\* : Reference group: large weight

### Interpretation of results

It is obviously noted that there are still many patients received continual pharmacotherapy after TURP. The patients with LUTS were prescribed more alpha-blocker than antimuscarinic drug and bethanechol no matter in 3 months or 6 months after TURP. The patients with smaller resected prostate weight have higher risk to continue pharmacotherapy no matter what kind of medication.

### Concluding message

Although TURP maintains feasible treatment for relieving BPO, prostatic size, especially possible resected prostate weight, could be a predictive factor for continual medication after TURP. In a word, it might be necessary to further evaluate the indication of TURP for smaller prostate.

### References

1. Kaplan SA. Update on the american urological association guidelines for the treatment of benign prostatic hyperplasia. Rev Urol. 2006;8 Suppl 4:S10-7

### Disclosures

**Funding:** None **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** Institutional review board, Taipei Veterans General Hospital **Helsinki:** Yes **Informed Consent:** No