

## WHETHER A GOOD UROFLOW RATE GUARANTEE A LOW POST-VOID RESIDUAL URINE VOLUME IN MEN WITH OVERACTIVE BLADDER?

### Hypothesis / aims of study

When considering to apply antimuscarinics to patients with overactive bladder (OAB), post-void residual urine volume(PVR) is an important factor for decision-making. Using antimuscarinics in patients with a large amount PVR is not desirable. It is very reasonable that patients with good flow rates should be able to empty their bladders to achieve a low PVR. If this hypothesis is correct, then antimuscarinics can be used safely in OAB patients with high flow rate without the need to check PVR. This study tested this hypothesis by evaluating the correlation between uroflow rate and PVR in men with OAB symptom.

### Study design, materials and methods

We retrospectively recruited male OAB patients, who had urgency with or without urge incontinence, between Aug 2008 and July 2015. Exclusion criteria included urinary tract infection, prostate cancer, bladder cancer, strain pattern on UFR or inadequate voided volume (less than 150ml) on uroflowmetry (UFR). Patients were categorized into normal Qmax and low Qmax pattern by applying the cut-off value of maximal flow rate (Qmax) to be 15ml/s in free uroflowmetry. All patients received pressure flow studies for evaluating bladder outlet obstruction (BOO) and transabdominal ultrasonography for evaluating the prostatic size, intra-vesical prostatic protrusion (IPP) and detrusor wall thickness (DWT). BOO was defined by BOOI>40. Amounts of residual urine were determined by post-void catheterization. International Prostate Symptom Score (IPSS) and Overactive Bladder Symptom Score (OABSS) were collected for symptom evaluation.

### Results

Table 1 Comparison of subgroups between normal flow and low flow OAB

		Normal Qmax	Low Qmax	P value
Patient's demographics	Patients(n)	70	66	
	Age(year)	64.7±12.7	72.7±8.8	<0.01
	PSA(ng/ml)	2.2±1.6	2.7±1.9	0.36
	Prostate size	39.4±18.0	43.6±15.4	0.36
	Intravesical Prostate protrusion (cm)	0.6±0.4	0.7±0.4	0.09
	Detrusor wall thickness(cm)	0.3±0.1	0.3±0.1	0.61
IPSS	Storage-subscore	8.2±3.1	9.0±3.2	0.25
	Voiding-subscore	4.8±4.5	7.0±4.6	0.01
	Total	13.7±5.7	16.7±6.2	0.04
OABSS	Frequency	1.0±0.4	1.0±0.4	0.65
	Nocturia	2.1±0.9	2.6±0.6	<0.01
	Urgency	3.4±1.2	3.7±1.1	0.30
	Urge-incontinence	2.7±1.4	2.3±1.6	0.16
	Total	9.2±2.8	9.5±2.5	0.55
	Free UFR volume(ml)	305.9±112.1	219.1±48.4	<0.01

Urodyanmic parameters	Free UFR voided time	26.2±9.7	46.4±17.4	<0.01
	PVR(ml)	49.3±39.0	82.7±79.6	0.04

Interpretation of results

A total of 136 male patients with OAB symptoms were enrolled. The patient's demographic showed in table 1. The age of normal Qmax group was significantly younger (table 1). Patients with normal Qmax had lower scores in the total score of IPSS and voiding subscore(table 1). No statistically significant correlation was noted between Qmax and PVR (Correlation coefficient:-0.06). However, PVR in normal Qmax group was significantly less than that in low Qmax group (49.3±39.0 vs 82.7±79.6, p=0.04). In normal Qmax group, 15.7% patients had PVR more than 100ml and 7.1% had PVR more than 200ml. 24.2% patients in normal Qmax group and 48.6% in low Qmean group were diagnosed as BOO and reached significant difference between two subgroups (p=0.03).

Concluding message

Male OAB patients with maximal uroflow rate higher than 15ml/sec have lower PVR. Nevertheless, clinical significant high PVR might still present in patients with good flow rate. It is still necessary to measure PVR even in patients with a satisfactory uroflow rate.

Disclosures

**Funding:** none **Clinical Trial:** No **Subjects:** HUMAN **Ethics not Req'd:** retrospective studies **Helsinki:** Yes **Informed Consent:** No