260

Masumori N[1], Tsukamoto T[1], Horita H[2], Sunaoshi K[3], Tanaka Y[4], Takeyama K[5], Sato E[6], Miyao N[7]
1. Sapporo Medical University, 2. Saiseikai Otaru Hospital, 3. Hokkaido Health Insurance Hospital, 4. Esashi Prefectural Hospital, 5. Yakumo General Hospital, 6. Akabira City General Hospital, 7. Muroran City Hospital

DOES BASELINE PROSTATE VOLUME AFFECT THE SHORT-TERM OUTCOME OF TAMSULOSIN?

Hypothesis / aims of study
Surprisingly few studies have investigated the relationship between baseline prostate volume (PV) and the short-term outcome of alpha1-blocker use,even though the use of alpha1-blockers is recommended as the first-line medical treatment in several guidelines. In the present study, we evaluated the short-term outcome of tamsulosin according to baseline PV using the same cohort of patients with benign prostatic hyperplasia (BPH)/lower urinary tract symptoms (LUTS) enrolled in the 5-year prospective study.[1]

Study design, materials and methods
112 patients aged 50 years or older who had BPH/LUTS and an International Prostate Symptom Score (IPSS) ≥ 8 were prospectively enrolled in a multicenter study.[1] At baseline, the patients underwent symptomatic examination using the IPSS, BPH problem index (BPI) and QOL index. PV (ml) was determined by transrectal ultrasound using the formula; 0.523 x anteroposterior diameter (cm) x transverse diameter (cm) x longitudinal diameter (cm). The patients underwent uroflowmetry to evaluate the maximum flow rate (Q_{max}, ml/sec.). Postvoid residual urine volume (PVR, ml) was measured by transabdominal ultrasound using the same formula as for PV. Tamsulosin hydrochloride, 0.2 mg/day, which is the approved dosage in our country, was given to the patients. They were prospectively followed for 5 years with periodic evaluation. In the present study, the short-term outcomes at 4 weeks and 3 months after tamsulosin treatment are evaluated according to estimated PV at baseline. Differences in parameters between two time points were determined by the paired t-test. A combined analysis model was used to determine differences in the pattern of changes over time of each parameter between two groups stratified by baseline PV using JMP5.0.1a software.

Results
The mean age ± standard deviation was 68.8 ± 7.7 years old. The mean PV at baseline ± standard deviation was 30.8 ± 12.6 ml. Of the 112 patients, 81 (72.3%) and 31 (27.7%) had PV of < 35 ml and ≥ 35 ml, respectively. The IPSS, QOL index and BPI were significantly improved both in patients with PV < 35 ml and those with PV ≥ 35 ml during 3 months (Table 1). There were no significant differences in the patterns of changes over time for the IPSS (p = 0.559), QOL index (p = 0.149) and BPI (p = 0.416) between the groups in the combined analysis model. Neither the pattern of changes in Q_{max} (p = 0.641) nor that of PVR (p = 0.988) showed significant differences between the smaller and larger PV groups.

Table 1 Changes in subjective and objective parameters by baseline prostate volume

Parameter	Prostate volume	Baseline	4 weeks	3 months	P-value[2]
IPSS	< 35 ml	17.8 ± 5.9 (81)[1]	13.5 ± 7.0 (69)[d]	11.9 ± 6.1 (55)[d]	p = 0.559
	≥ 35 ml	17.4 ± 6.7 (31)	13.1 ± 7.0 (28)[b]	13.4 ± 6.2 (29)[b]	
BPI	< 35 ml	10.2 ± 5.5 (74)	8.6 ± 5.2 (66)[b]	6.8 ± 4.5 (52)[c]	p = 0.416
	≥ 35 ml	10.1 ± 6.1 (29)	7.2 ± 5.8 (28)[b]	7.6 ± 5.7 (29)[a]	
QOL index	< 35 ml	4.3 ± 1.0 (81)	3.4 ± 1.4 (69)[d]	2.7 ± 1.4 (55)[d]	p = 0.149
	≥ 35 ml	4.0 ± 1.3 (31)	3.0 ± 1.4 (28)[b]	3.0 ± 1.4 (29)[b]	
Q_{max}	< 35 ml	12.8 ± 5.8 (81)	12.9 ± 6.7 (66)	12.4 ± 5.8 (55)	p = 0.641
	≥ 35 ml	10.1 ± 5.3 (31)	11.8 ± 6.8 (27)	11.3 ± 5.2 (28)	
PVR	< 35 ml	55.0 ± 58.5 (81)	43.1 ± 46.6 (66)[a]	30.3 ± 41.7 (55)[c]	p = 0.988
	≥ 35 ml	83.0 ± 56.8 (31)	73.8 ± 76.1 (27)	60.0 ± 66.3 (29)[a]	

1) Mean ± standard deviation (number of patients)

2) Comparison among groups (combined analysis model)

a) p < 0.05, b) p < 0.01, c) p < 0.001, d) p < 0.0001, vs. baseline, paired t-test

Interpretation of results
Surprisingly, information on the short-term outcomes of alpha1-blockers for patients with BPH/LUTS stratified by baseline PV is extremely limited. The present study demonstrated that 3-month treatment with tamsulosin improved subjective symptoms measured by the IPSS, QOL index and BPI in both patients with PV of < 35 ml and ≥ 35 ml. In addition, there were no significant differences in the patterns of improvement of these parameters between the two groups. Thus, the short-term

efficacy of tamsulosin is promising irrespective of baseline PV.

Concluding message
Alpha1-blocker monotherapy should be considered for all patients with BPH/LUTS to rapidly relieve symptoms, although the long-term outcome is not promising for patients with a large PV at baseline as previously reported.[1, 2]

References
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