

Change of autonomic nervous activity after treatment with alpha-blocker in men with lower urinary tract symptoms

아주대학교병원
Ajou University Hospital

Choo S H¹, Seo J T², Kim H W³, Kim J Y⁴, Choi J B¹

1. Ajou University School of Medicine, 2. Cheil General Hospital and Women's Healthcare Center, 3. The Catholic University of Korea, 4. Gwangmyeong Sungae Hospital



Aim of the study

To evaluate the changes of autonomic functions according to the LUTS treatment using heart rate variability (HRV)

Methods

108 male volunteers with LUTS (IPSS > 8)

Electrocardiographic signals were obtained from subjects in resting state for the analysis of their HRV

After initial measurement, LF/HF ratio \leq 1.6 → Group A

LF/HF ratio > 1.6 → Group B

alfuzosin 10mg once a day for 12 weeks

Follow-up measurement of HRV at 12 weeks

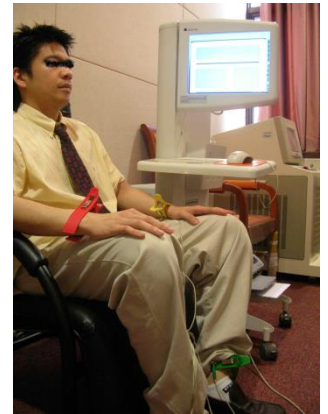


Figure 1. A system developed in-house for HRV acquisition and signal processing (SA-3000p, Medcore, Seoul, Korea)

Table 1. Basic characteristics of subjects

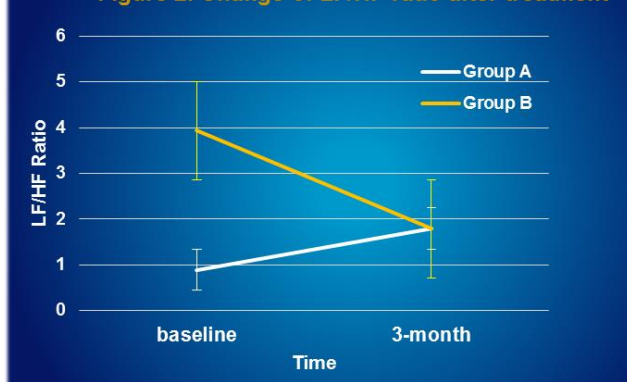
	Group A (LF/HF \leq 1.6)	Group B (LF/HF > 1.6)	P value
N	54	41	
Age (years old)	65.5 \pm 7.68	62.7 \pm 5.75	0.055
LF (ms ²)	104.5 \pm 128.22	132.9 \pm 105.95	0.253
HF (ms ²)	137.7 \pm 216.28	47.8 \pm 43.64	0.010
Total IPSS	15.8 \pm 5.68	15.7 \pm 5.60	0.936
IPSS-voiding subscore	9.9 \pm 4.89	9.4 \pm 3.82	0.622
IPSS-storage subscore	5.9 \pm 2.90	6.2 \pm 3.00	0.582
Qmax (mL/sec)	10.3 \pm 4.17	9.4 \pm 4.00	0.297

Table 2. Change of mean total IPSS, IPSS subscores, Qmax and LF/HF ratio after treatment with alfuzosin XL 10 mg for 12 weeks

	Group A		Group B	
	Baseline	12 week	Baseline	12 week
Total IPSS	15.7 \pm 5.62	10.9 \pm 6.13*	15.8 \pm 5.68	10.1 \pm 6.11*
IPSS-voiding subscore	9.7 \pm 4.20	6.4 \pm 4.11*	9.9 \pm 4.49	6.0 \pm 4.35*
IPSS-storage subscore	6.1 \pm 2.93	4.6 \pm 2.75*	5.9 \pm 2.90	4.1 \pm 2.56*
Qmax (mL/sec)	10.3 \pm 4.17	15.7 \pm 8.00*	9.31 \pm 3.99	14.0 \pm 7.94*
LF/HF [†]	0.89 \pm 0.407	1.80 \pm 1.804*	3.93 \pm 5.471	1.79 \pm 1.153*

(*: difference from baseline, p < 0.05; †: difference between groups, p < 0.05)

Figure 2. Change of LF/HF ratio after treatment



Conclusions

LF/HF ratios of both groups were merged to about 1.79 (near value in healthy people) after treatments of male LUTS. It shows how the balance of autonomic nervous system is important to improve LUTS and related to treatment efficacy with alpha-blocker. This finding is a clue that imbalance of autonomic nervous system may be a causative factor to bring out LUTS and influence on the efficacy of treatment.