424

Liao C[1], Chung S[2], Wang C[3], Lin C H[4], Kuo H C[5]

1. *Cardinal Tien Hospital, Taipei, taiwan,* ***2.*** *Far Eastern Memorial Hospital, Taipei, Taiwan,* ***3.*** *En Chu Kong Hospital, Taipei,Taiwan,* ***4.*** *E-DA Hospital, Kaohsiung, Taiwan,* ***5.*** *Buddhist Tzu Chi General Hospital, Hualien, Taiwan*

THERAPEUTIC EFFECT OF A-BLOCKERS AND ANTIMUSCARINICS IN MALE LOWER URINARY TRACT SYMPTOMS BASED ON INTERNATIONAL PROSTATE SYMPTOM SCORE (IPSS) SUBSCORE RATIO

Hypothesis / aims of study

Lower urinary tract symptoms (LUTS) include voiding, storage, and postmicturition symptoms. Although most initial treatments for male LUTS focused on prostate and based on alpha-adrenoceptor antagonists traditionally, a subset of men who receive treatment for prostate conditions may have persistent storage symptoms. Under such condition, additive of antimuscarinics for residual storage symptoms is recommended. However, many primary care clinicians (PCPs) may avoid using antimuscarinics in men because of safety concerns. We had reported that measuring International Prostate Symptom Score (IPSS) subscores and calculating the IPSS voiding to storage subscore ratio (IPSS-V/S) is a simple and useful method to differentiate failure to voiding and failure to storage lower urinary tract dysfunction in men with LUTS [1]. To further investigate if IPSS-V/S can help to guide the treatment for male LUTS, we conducted the prospective, non-randomized and open-label study to investigate the therapeutic effect of α-blockers and antimuscarinics in male LUTS based on IPSS-V/S.

Study design, materials and methods

Three hundred and seventy-one men aged 40 years or older with a total IPSS (IPSS-T) 8 or more were enrolled from January 2010 to December 2010. The voiding (IPSS-V) and storage IPSS subscores (IPSS-S) were recorded separately by patients themselves before any treatment, and the IPSS-V/S was calculated. Patients were divided into 2 groups according to IPSS-V/S. Doxazosin 4mg and tolterodine 4mg per day was given to patients with IPSS-V/S>1 and IPSS-E/S<=1, respectively.

Results

There were no significant differences of baseline age, quality of life (Qol), total prostate volume (TPV), transition zone index (TZI), prostate specific antigen (PSA), maximum flow rate (Qmax), voided volume, or postvoid residual (PVR) between groups (Table 1). After medical treatment for 1 month, 100/139 (71.9%) patients receiving tolterodine and 170/209 (81.3%) patients receiving doxazosin reported an improved outcome (global response assessment, GRA >= 1 point). Total IPSS and IPSS-S were significantly decreased in both groups. But significant increased Qmax, voided volume and decreased IPSS-V were noted only in patients receiving doxazosin. No patient treated with tolterodine developed urinary retention, but significantly increased PVR (from 51.7 ml to 65.6 ml) was noted (Table 2). When comparing baseline parameters between those with GRA>=1 and GRA<1, there were no significant differences in both groups (Table 3).

Interpretation of results

Our preliminary results showed satisfactory response using IPSS-V/S to guide the initial treatment for male LUTS. Using tolterodine for patients with IPSS-V/S<=1 was safe and effective except mild increased PVR was noted. However, it's hard to identity who will report GRA>=1 using baseline parameter.

Concluding message

Initial treatment with tolterodine for patients with IPSS-V/S<=1 and doxazosin for patients with IPSS-V/S>1 is safe and effective. Using IPSS-V/S ratio can help to guide the treatment of male LUTS, especially for the PCPs.

Table 1 Baseline parameters between IPSS-V/S>1 and IPSS-V/S<=1

	Total (N=371)	IPSS-V/S>1 (N=244)	IPSS-V/S<=1 (N=127)	P value
Age (years)	66.0 ± 11.9	65.4 ± 11.1	67.2 ± 13.3	0.179
IPSS-T	16.3 ± 6.0	17.3 ± 6.1	14.4 ± 5.4	0.000
IPSS-V	9.5 ± 5.0	11.8 ± 4.1	5.1 ± 3.4	0.000
IPSS-S	6.8 ± 3.5	5.5 ± 2.9	9.3 ± 3.1	0.000
Qol	3.9 ± 0.5	3.9 ± 0.5	3.8 ± 0.5	0.295
TPV (ml)	43.0 ± 26.3	42.9 ± 23.9	43.4 ± 30.6	0.870
TZI	0.33 ± 0.12	0.33 ± 0.12	0.34 ± 0.13	0.527
PSA (ng/ml)	3.7 ± 5.2	3.6 ± 5.3	3.9 ± 5.1	0.597
Qmax (ml/s)	11.5 ± 6.7	11.0 ± 6.1	12.3 ± 7.8	0.123
Volume (ml)	218.1 ± 157.4	229.4 ± 156.8	196.3 ± 156.9	0.063
PVR (ml)	50.1 ± 58.1	50.7 ± 58.5	48.9 ± 57.6	0.786

IPSS-T: IPSS total score; IPSS-V: IPSS voiding subscore; IPSS-S: IPSS storage subscore; IPSS-V/S: IPSS voiding to storage subscore ratio; Qol: quality of life; TPV: total prostate volume; TZI: transition zone index; PSA: prostate specific antigen; Q_{max}: maximum flow rate; PVR: postvoid residual

Table 2 Parameters changes after medical treatment for 1 month

	IPSS-V/S>1 (N=200) Doxazosin Tx			IPSS-V/S<=1 (N=97) Tolterodine Tx		
	Pre-Tx	Post-Tx	P-value	Pre-Tx	Post-Tx	P-value
IPSS-T	17.2 ± 6.1	9.8 ± 5.5	0.000	14.7 ± 5.7	10.7 ± 6.5	0.000
IPSS-V	11.8 ± 4.2	5.7 ± 4.6	0.000	5.3 ± 3.6	4.6 ± 4.5	0.138
IPSS-S	5.4 ± 2.9	4.1 ± 2.4	0.000	9.5 ± 3.2	6.1 ± 3.2	0.000
Qmax	10.4 ± 5.6	13.1 ± 6.9	0.000	13.0 ± 8.4	13.9 ± 8.2	0.177
Volume	228.5±154.3	265.0±158.8	0.001	213.4±166.3	235.7±155.9	0.094
PVR	53.0±59.9	46.8 ± 54.1	0.166	51.7 ± 62.0	65.6 ± 64.0	0.032

Table 3 Comparisons of baseline parameters between GRA >=1 and GRA<1 at 1 month in both groups

	IPSS-V/S>1 (N=200) Doxazosin Tx			IPSS-V/S<=1 (N=97) Tolterodine Tx		
	GRA>=1 (N=163)	GRA<1 (N=37)	P value	GRA>=1 (N=71)	GRA<1 (N=26)	P value
Age	66.5 ± 10.7	64.1 ± 9.6	0.215	68.3 ± 13.7	66.9 ± 10.8	0.606
IPSS-T	17.2 ± 6.0	17.0 ± 6.4	0.862	14.7 ± 5.7	14.9 ± 5.6	0.885
IPSS-V	11.8 ± 4.2	12.0 ± 4.3	0.831	5.3 ± 3.7	5.4 ± 3.4	0.894
IPSS-S	5.5 ± 2.9	5.1 ± 3.0	0.471	9.6 ± 3.3	9.5 ± 3.0	0.887
TPV	45.1 ± 25.3	40.8 ± 24.8	0.356	41.0 ± 26.1	42.4 ± 21.7	0.808
TZI	0.34 ± 0.12	0.31±0.12	0.135	0.34 ± 0.12	0.31 ± 0.14	0.496
Qmax	10.4 ± 6.0	11.1 ± 4.8	0.499	13.3 ± 9.0	11.9 ± 6.4	0.516
Volume	220.2±143.6	254.7 ± 193.8	0.248	212.2±184.2	185.7±120.2	0.513
PVR	56.5 ± 62.5	40.0 ± 49.4	0.155	53.3 ± 58.7	45.7 ± 70.2	0.604

References

1. 1. Liao CH, Chung SD Kuo HC Diagnostic Value of International Prostate Symptom Score (IPSS) Voiding-to-Storage Subscore Ratio in Male Lower Urinary Tract Symptoms. IJCP (accepted) /SCI

Specify source of funding or grant	**Nil**
Is this a clinical trial?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**Yes**
Specify Name of Ethics Committee	**Research Ethics Committee of Buddhist Tzu Chi General Hospital**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**