

Trends for Managing Benign Prostatic Hyperplasia in Taiwan

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OBJECTIVE: To investigate the current trend of Taiwanese urologists in managing benign prostatic hyperplasia (BPH). This study can help establish our own consensus, recommend appropriate diagnostic tools, and offer ideal treatment options to related patients.

MATERIALS AND METHODS: From November 2000 to April 2001, a questionnaire concerning the tools used for establishing a diagnosis of BPH, treatment options in different hierarchies associated with various sizes of the prostate currently and 5 years ago was mailed to each of the 465 urologists in active practice in Taiwan.

RESULTS: A total of 240 physicians (51.6%) responded to the questionnaire. For evaluation of severity of BPH, more than 2/3 of the surgeons did not depend on serum creatinine, cystoscopy, intravenous urography, or residual urine as adjuvant tools. Of these subjects, 89.1% would add serum prostatic-specific antigen (PSA) to detect suspected malignancy, and 86.7% of them believed the International Prostate Symptoms Score (IPSS) was essentially valuable. Regarding current treatment and a comparison with treatment 5 years ago, surgeons still preferred using α -blocker for medical therapy. Transurethral resection of the prostate (TURP) remained the most popular procedure for a medium-sized enlarged prostate with 87.5% of surgeons maintaining this choice, and increasing acceptance for huge prostates of from 64% to 84%. On the other hand, the use of finasteride dropped from 10% to 1.7%.

CONCLUSIONS: The trends of treating BPH we report herein can provide useful insights into variations in clinical practice among Taiwanese urologists and may help in the development of more widely accepted guidelines by our urological community. (*J Urol R.O.C.*, 13:25-31, 2002)

Key words: prostate, practice pattern.

INTRODUCTION

On many occasions, guidelines for evaluation and management of benign prostatic hyperplasia (BPH) developed by authorities [1] have been widely accepted and regarded as the standard for daily practice. However owing to limitations of health-care providers and medical cultures in different countries, surgeons have modified some of the diagnostic and treatment modalities. The introduction of medical therapy and new technologies and the appreciation of the importance of patient preferences in treatment decisions have increased variations in clinical practice among Taiwanese urologists. Ramsey et al. reported the Canadian practice patterns and compared differences with the Americans in order to develop their own guidelines suited to their commu-

nity [2]. To our knowledge, there has been no formal survey conducted in Taiwan to understand our current trends of managing these patients under our own unique health care community.

The purpose of this study was to investigate the current practice patterns of Taiwanese urologists for BPH in order to help set our own guidelines suitable for our urological community.

MATERIALS AND METHODS

Questionnaire description. A multiple-choice questionnaire we modified and developed [2] was sent to each of the 465 members of the Urological Association of the R.O.C. in active practice. The questionnaire was divided into 3 sections, consisted of a total of 26 ques-

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tions, and was used with permission from the publisher. Comments were then solicited on its content from 3 experienced urologists from National Taiwan University Hospital.

For management of BPH, the 3 sections included: (1) the use of various diagnostic tools (10 questions, Table 1); (2) comparison of different diagnostic modalities currently used and used 5 years ago (14 questions, Appendix 1) where respondents were required to answer 'yes' or 'no' and; (3) treatment modalities adopted for different severities of BPH in current practice and 5 years ago (3 questions had a single choice, Appendices 2-4) in which surgeons were asked to rate their first priority in treating the disease with various conditions and symptoms in order to assess any change in the trend of management. Since there are no previous data, comparisons were made by requiring surgeons to recall their choices in the same circumstances 5 years previous. For consultant surgeons who had been practicing for fewer than 5 years, the comparison was made by recalling what they had been taught by their teachers or their choices at the time they were residents. The questionnaire was mailed with a cover letter explaining the project and a stamped self-addressed envelope.

Survey response. Of the 465 surveys mailed, we received a response from 240 with 204 (85%) directly replying and the remaining 36 (15%) being collected during the monthly meeting of the UAROC. The overall response rate was 51.6%. Baseline demographics of the responders are detailed in Table 2. Responses to additional questions are detailed in Appendices 1 through 4.

Statistics. The response rate from medical centers and regional hospitals was compared by Chi-square test

(χ^2). Choices of treatment modalities and the comparison with those of 5 years ago listed in Appendix 1 and the difference in treatment modalities of the 2 periods listed in Appendices 2-4 were compared using the McNemar test. A p-value < 0.05 denoted a significant statistical difference.

RESULTS

Baseline demographics. Of all respondents, 90% had practiced for fewer than 20 years and were relatively young (Table 2). Of the total, 85.9% were affiliated with either a Class I (medical center) or II (regional) teaching hospital, according to the classification of the Ministry of Education and Department of Health, Taiwan. The response rates of urologists from medical

Table 2. Demographics of responders (N = 240)

Item	Responders (%)
Years in practice	
Less than 5	21.7
5-10	32.5
10-20	35.8
20-30	5.8
Greater than 30	4.2
Affiliation	
Medical center	44.2
Regional hospital	41.7
District hospital	8.3
Clinic	5.8

Table 1. Percentage of respondents who performed certain studies for initial evaluation of benign prostatic hyperplasia

Items	Respondents (%)				
	Always	More than half of time	About half	Less than half of time	Never
IPSS score	33.9	24.2	22.5	12.7	6.7
Serum creatinine	19.2	11.7	15	41.7	12.5
PSA	73.3	15.8	5	2.5	3.3
Residual urine					
Catheterization	1.7	2.5	10	38.3	47.5
Transabdominal ultrasound	15.8	14.2	20	30	20
IVU	4.2	10	17.5	50	18.3
KUB	20.8	11.7	19.2	32.5	15.8
Measurement of prostate size					
Transabdominal	6.7	11.7	7.5	32.5	41.6
Transrectal (TRUS-P)	24.3	27.5	12.5	17.5	14.2
Cystourethroscopy	5.8	5.8	20	57.5	10.9
Uroflowmetry	38.3	27.5	22.5	10	1.7
Urodynamic study	1.7	7.5	26.7	58.3	5.8

Abbreviations: IPSS, International Prostatic Symptoms Score; PSA, prostate specific antigen;

IVU, intravenous urography; KUB, kidney-ureter-bladder plain film;

TRUS-P, transrectal ultrasonography for the prostate.

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centers and regional hospitals were 61% and 48%, respectively ($p < 0.01$).

BPH case identification and management. Table 2 shows the responses to the frequency of use of different modalities in evaluating a man with suspected BPH. Of total respondents, 80.6 % used the IPSS (at least 1/2 of the time), and 89.1% would add serum prostatic-specific antigen (PSA)(at least 1/2 of the time) to detect prostatic malignancy. Only 31.7% and 31.6% of respondents used intravenous urography (IVU) and cystoscopy, respectively, for evaluating the severity of BPH (at least 1/2 of the time). Regarding the measurement of residual

urine, only 1/2 of them would make the estimation with ultrasound and fewer than 15% of them would use catheterization. Almost 90% of the respondents had adopted uroflowmetry as an objective tool for assessing severity but fewer than 10% of subjects routinely or frequently used urodynamic study (including CMG, UPP, EMG and pressure-flow) for further evaluation. Urologists tended to have increased the use of IPSS and found it useful when compared with 5 years ago, although 60% still believed that improvements in the scoring system were needed (Appendix 1). Transrectal ultrasonography of the prostate (TRUS-P), which is

Appendix 1. A 55 year-old man in good health is bothered with moderately severe voiding symptoms and wishes to be treated. On digital examination he has a 25-g prostate. Both U/A and creatinine are normal.

Questions	Percent answering Yes		
	Currently	5 years ago	p- value
Would you use the IPSS score?	79.2	50	< 0.01*
Do you think the IPSS score is of value?	86.7	55.8	< 0.01*
Do you think the IPSS score needs improvement?	60	32.5	< 0.01*
Do you use uroflowmetry?	94.2	69.2	< 0.01*
Do you routinely use uroflowmetry?	66.7	45	< 0.01*
Do you use cystoscopy?	48.3	43.3	0.12
Do you routinely use cystoscopy in symptomatic BPH patients?	11.7	15	0.01*
Do you do TRUS-P?	64.2	49.2	< 0.01*
Do you routinely do TRUS-P?	40	25	< 0.01*
Do you have TRUS in your office?	53.3	36.7	< 0.01*
Do you do TRUS-P biopsy?	74.2	55.8	0.01*
Do you do IVU?	32.5	32.5	0.6
Do you do renal ultrasound?	58.3	40.8	< 0.01*
Do you do a post-void residual urine?			
By catheterization	18.3	20.8	0.15
By ultrasound	66.7	44.3	< 0.01*

* McNemar test: $p < 0.05$ denotes a significant statistical difference.

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Appendix 2. In the same patient, his obstructive score is 9/20, irritative score is 6/15, and his Qmax is 10 ml/s; what would you recommend for him? (Choose 1 answer only)

	Respondents (%)		
	Currently	5 years ago	p- value
Observation	1.7	5.8	0.04*
Finasteride	1.7	10	< 0.01*
α -Blocker	90	67.5	< 0.01*
Transurethral resection of prostate	4.2	13.3	0.03*
Transurethral incision of bladder neck	2.5	1.7	(--)
Transurethral microwave	0	1.7	0.04*
Laser prostatectomy	0	0	(--)

* McNemar test: $p < 0.05$ denotes a significant statistical difference.

Qmax: maximal uroflow velocity.

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thought to be very valuable in assessing prostatic size, was only routinely currently performed by 40% of the respondents, while 5 years ago only 1/4 of respondents administered it. In suspected cases of BPH, 74.2% would add TRUS-biopsy, and demand for renal ultrasound increased from 40.8% to the current 58.3%.

Appendices 2-4 reveal changes in attitudes towards managing different conditions of BPH over 5 years. For small prostates with moderate symptoms, medical therapy has become the mainstream of treatment with α -blocker the current predominant prescription (90%). Finasteride was rarely used for small prostates with 1.7% of respondents currently only continuing to believe in its effect ($p < 0.01$). Regarding the choices of surgery for medium-sized prostates of 40 g with moderate symptoms, standard TURP was still the most widely adopted procedure. Laser prostatectomy has begun to gain acceptance. None of the respondents had adopted vaporization or microwaving to treat BPH.

For huge prostates of 80 g with bothersome symptoms, the importance of standard TURP had increased from 64.2% to the current 84.2% ($p < 0.01$). Open enucleation had gradually lost its position as only 6.7% currently thought it was strongly indicated. On the con-

trary, 32.5% had recommended it for huge prostates in the previous period ($p < 0.01$). Again laser prostatectomy was currently favored by 4.2% of respondents in handling such huge prostates, while less than 1% had done so 5 years ago ($p < 0.01$).

DISCUSSION

Despite the development of guidelines in a number of areas regarding the appropriate evaluation and treatment for BPH and prostate cancer, many uncertainties and wide variations exist among urologists in the approach to many of these problems. Taiwan possesses a unique health care community where the system provides universal access for residents and is funded by a single payer, the National Health Insurance. The most impressive medical cultures to which it forms a strong contrast are: comparing to the British Commonwealth countries such as Great Britain and Canada, in Taiwan, there is a total freedom of specialists' consultation with no references required from general practitioners; however, a guilty sentence will be charged to the physicians in case of malpractice. In addition, we have extremely low self-paid medical costs and high accessibility to

Appendix 3. In a healthy patient with an IPSS score 17 and Qmax of 9.8 ml/s, his prostate is about 40 g and he is dissatisfied with medical treatment; what would you recommend for him? (Choose 1 answer only)

	Respondents (%)		
	Currently	5 years ago	p- value
Standard transurethral resection of prostate	87.5	92.5	< 0.01*
Limited transurethral resection of prostate	7.5	3.3	< 0.01*
Vaporization	1.7	0	0.04 *
Microwave	0	0	(--)
Laser prostatectomy	3.3	0.8	0.12
Open enucleation	0	3.3	0.01*

* McNemar test: $p < 0.05$ denotes a significant statistical difference.

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Appendix 4. In a healthy patient with an IPSS score of 19 and Qmax of 6.5 ml/s, his prostate is about 80 g and he is dissatisfied with medical treatment; what would you recommend for him? (Choose 1 answer only)

	Respondents(%)		
	Currently	5 years ago	p- value
Standard transurethral resection of prostate	84.2	64.2	< 0.01*
Limited transurethral resection of prostate	5	2.5	0.02 *
Vaporization	0	0	(--)
Microwave	0	0	(--)
Laser prostatectomy	4.2	0.8	0.01*
Open enucleation	6.7	32.5	< 0.01*

* McNemar test: $p < 0.05$ denotes a significant statistical difference.

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health care. Such circumstances have caused changes in perceptions towards medical care in which patients are regarded and recognized as consumers during treatment seeking. The practice may hence not always obey the guidelines but depends largely on conditions set by the insurance provider and by potential pressure from patients.

Ramsey et al. revealed some changes in the Canadian practice patterns between 1995 and 1998 and compared these differences with the Americans [2]. Such a comparison provided an ideal example and reference for our design of a survey for our own urological community. Most of our respondents were in their 'golden practice' period in which 90% had practiced for fewer than 20 years. We also noted the relative passivity in the responses of elderly urologists who had practiced for longer than 20 years as only 28% (24/85) responded compared to the high response rate from the younger generation of 54% (206/380). This proportion implies that the younger generation may be more concerned and involved in affairs related to their practice. From our observations, we noted that IPSS has been promoted quite successfully in that almost 80% of urologists trusted it. However, the 60% who indicated that improvement was still mandatory was similar to percentage of the Canadian series of 56%. McConnell et al. [1] and Koyanagi et al. [3] placed endoscopic evaluation in the optional category, indicating that urethrocytoscopy was not recommended to determine the need for treatment. They also discourage the use of ultrasonography or IVU in an otherwise healthy person in whom initial evaluation is consistent with uncomplicated BPH. Our low frequency of the use of cystoscopy and IVU indicates that most of the urologists agree with this consensus and avoid such relatively invasive studies. Despite the fact that renal ultrasound is indicated only in patients with a specific serum creatinine level and/or post-voiding residual volume [4], the increased use of renosonography from 40.8% to 58.3% over 5 years which is discordant with the suggested guidelines may be attributed to the high accessibility of ultrasound as more than 1/2 of practitioners had their own machines in their offices with a low, affordable examination cost (about USD18); patients also request it. Urodynamic study is still not widely accepted although it can provide important and objective information on obstructions and detrusor function, which are independent of subjective symptoms and prostate size and may be beneficial in diagnosis, determination of treatment options, and evaluation of treatment outcomes [5]. The reason for such low acceptance requires further justification.

Medical therapy is the treatment of choice for men with uncomplicated BPH and moderate symptoms. Finasteride was used by 1/10 of urologist 5 years ago but had appreciably decreased to the current rate of 1.7%. On the other hand, α -blocker had gained in popularity over these years with an increment of from 67.5% to the current 90% of respondents ranking it as the first priority, while the surgical rate dropped from 16.7% to 6.7%, indicating that urologists were aware of treating a man with moderate symptoms without an enlarged prostate gland on digital rectal examination

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gland on digital rectal examination with an α 1-adrenergic antagonist as the first drug of choice [6]. Finasteride was previously shown to be effective in 2 prospective series in reducing prostatic size and hence improving the symptom scores in patients with larger prostatic volumes (>30 ml) [7-8], but it did not provide more advantages over a placebo in clinical BPH with moderate prostate size (<30 ml) [9-10]. Our study indicates that most urologists understand the ineffectiveness of finasteride for small prostates.

For patients in whom medical therapy has failed and with appreciable prostate size and/or severe symptom scores, TURP still remains the mainstream of choice. A small number of surgeons have shifted their preference to limited TURP (resection of the adenoma from the 5' to 7'o'clock positions only or channeling [11]) or newly developed treatment modalities including laser prostatectomy. However since most hospitals are not equipped with laser equipment, the existence of an increment in usage for huge prostates over the study period remains questionable. Open enucleation, previously thought to be strongly indicated for prostate sizes greater than 50g [12], was almost regarded as second-line procedure even for huge prostates, for example 80 g, in which some respondents admitted that they did it only for demonstration and teaching purposes. The use of vaporization or microwaving is almost negligible in our community. Since the advent of PSA, it has been widely used for detection of prostate cancer (CaP) with tremendous effect [13]. Up to 90% of urologists routinely used serum PSA for detection of CaP during the evaluation of a man with suspected BPH.

There are some limitations inherent in our survey study. First, since this survey dealt with trends instead of the reasons why surgeons preferred certain diagnostic tools or treatment modalities, we did not delve deeply into the factors that might have resulted in such differences. A detailed analysis of their choices is worthy of further investigation as it reflects the real circumstances encountered by our urologists compared those in Western countries. Second, we also noted a significantly higher response rate of medical centers over regional hospitals. Such a significant difference is worthy of further investigation in the future to justify if there are different attitudes towards the same disease in different situations by 2 different groups of urologists. We could not control the non-responder bias, which means that non-responders would likely yield different responses than those who returned the questionnaires. It is noteworthy that the number of urologists from academic institutes (Classes I and II) constituted a large proportion of our survey instead of physicians being evenly distributed from different classes. Their concepts and attitudes may be more influential as it was taken for granted that they are more up-to-date with current trends in disease management. Thus actual practice in the overall community would likely be different. Further large-scale administrative database studies [14] would be mandatory to determine the real practice of responding urologists.

CONCLUSIONS

The results of our current survey provide useful information on the clinical practice of Taiwanese urologists. The solid data may help us set up our own consensus and guidelines suitable for our community. Such data also provide essential information to the National Health Insurance to avoid any unnecessary divergence in concepts regarding rational examinations and treatments.

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REFERENCES

1. McConnell JD, Barry MJ, Bruskewitz RC, et al. Clinical practice guidelines. Benign Prostatic Hyperplasia: Diagnosis and Treatment. Benign Prostatic Hyperplasia Guideline Panel. Rockville, MD: Agency for Health Care Policy and Research, 1994.
2. Ramsey EW, Elhilali M, Gidenberg SL, et al. Practice pattern of Canadian urologists in benign prostatic hyperplasia and prostate cancer. *J Urol* 2000;163:499-502.
3. Koyanagi T, Artibani W, Correa R, et al. Initial diagnostic evaluation of men with lower urinary tract symptoms. In: Proceedings of the 4th International Consultation on Benign Prostatic Hyperplasia, 1997. Paris, France.
4. Koch WF, Ezz el Din K, de Wildt MJ, et al. The outcome of renal ultrasound in the assessment of 556 consecutive patients with benign prostatic hyperplasia. [see comments]. *J Urol* 1996;155:186-90.
5. Gotoh M, Yoshikawa Y, Kondo A, et al. Diagnostic values and limitations of conventional urodynamic studies (uroflowmetry, residual urine measurement, cystometry) in benign prostatic hypertrophy. *Jpn J Urol* 1996;87:1321-30.
6. Walsh PC. Treatment of benign prostatic hyperplasia. *N Engl J Med* 1996;335:586-7.
7. The Finasteride Study Group. Finasteride (MK-906) in the treatment of benign prostatic hyperplasia. *Prostate* 1993;22:291-9.
8. Gormley GJ, Stoner E, Bruskewitz RC, et al. The effect of finasteride in men with benign prostatic hyperplasia. *N Engl J Med* 1992;327:1185-91.
9. Lepor H, Williford WO, Barry MJ, et al. The impact of medical therapy on bother due to symptoms, quality of life and global outcome, and factors predicting response. Veterans Affairs Cooperative Studies Benign Prostatic Hyperplasia Study Group. *J Urol* 1998;160:1358-67.
10. Boyle P, Gould AL, Rhoerborn CG. Prostate volume predicts outcome of treatment of BPH with finasteride: meta-analysis of randomized clinical trials. *Urology* 1996;48:398-405.
11. Yamaguchi A, Meiri H. Channeling vs. complete resection. *Jpn J Urol Surg* 1999;12:99-103.
12. Oesterling JE. Retropubic and suprapubic prostatectomy. In: Walsh PC, Retik A, Vaughan ED, eds. *Campbell's Urology*. 7th ed. Philadelphia: WB Saunders, 1998;Chapt 50:1529-31.
13. Oesterling JE, Martin SK, Bergstralh EJ, et al. The use of prostatic specific antigen in staging patients with newly diagnosed prostate cancer. *JAMA* 1993;269:57-60.
14. Naylor CD, Guyatt GH. Users' guide to the medical literature. XI. How to use an article about a clinical utilization review. Evidence-Based Medicine Working Group. *JAMA* 1996;273:1435-9.