

# Benign Prostatic Hyperplasia in Elderly Thai Men in an Urban Community : The Prevalence, Natural History and Health Related Behavior

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## Abstract

**Problem :** Although benign prostatic hyperplasia (BPH) is a common disease in elderly Thai men the prevalence in the community and its natural history is unknown.

**Objectives :** To determine the prevalence of symptomatic BPH and its natural history. To determine the health related behaviors which have an impact on the voiding symptoms.

**Material and Method :** 879 elderly men aged  $\geq 60$  years from communities around Siriraj Hospital were studied. The International Prostate Symptom Scores (IPSS) and Quality of Life (QOL) scores were evaluated in the participants at the beginning of the study and 1 year later. The overall assessment, complications and health related behaviors were also evaluated.

**Result :** The prevalence of symptomatic BPH in the community was 41.3 per cent. In terms of overall assessment at 1 year follow-up, symptomatic BPH patients (IPSS 8-35), the rate of "improved", "same" and "worse" was 10.6, 70.2 and 19.2 per cent respectively. The complication rate was about 10 per cent. Three quarters of the elderly men had health related behavior at risk.

**Conclusion :** The prevalence of symptomatic BPH was high. Its natural history was unpredictable and some BPH symptoms may be influenced by their behaviors.

**Key word :** BPH, Prevalence, Natural History, Health Related Behavior

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In the year 2020, the aging population in Thailand will increase to 10.8 million or 15.3 per cent of the total population. Benign Prostatic Hyperplasia (BPH) is still a very common disease in elderly men around the world. Although it is not life threatening, it has an impact on the quality of life and costs a lot of money due to variety of expensive medication prescribed for it. The authors conducted a community survey to find out the prevalence of symptomatic BPH in elderly Thai men living in the community and then assessing the burden of the disease at present and in the future. In addition to the prevalence, the natural history of BPH was also studied, which is considered as the outcome of watchful waiting treatment. Finally, the authors tried to evaluate the behavior which will be related to BPH symptoms in order to develop a behavior therapy model for remedy of symptoms.

## MATERIAL AND METHOD

From 1998 to 1999, elderly men aged 60 years or more from urban communities 10 kilometers around Siriraj Hospital were given appointments with the research team for the BPH study. The International Prostate Symptom Score (IPSS) questionnaire was used to evaluate the severity of voiding symptoms. The Quality of Life (QOL) score which was evaluated by one question "If you were to spend the rest of your life with your urinary condition just the way it is now, how would you feel about that?" was also evaluated. The answer to QOL questionnaire

was divided into 7 choices from "delighted" with the score 0 to "terrible" with the score 6. Digital Rectal Examination (DRE) was used to differentiate prostate cancer and uroflowmetry was attempted in the community setting to evaluate voiding ability.

The subjects were reevaluated again at one year for IPSS and QOL scores. The natural history of BPH at 1 year follow-up was evaluated in terms of overall assessment, complications of BPH and change in IPSS. Overall assessment was the main outcome. It consisted of only one question asking "How can you compare your voiding symptom at present with last year?". The answer to the overall assessment was divided into 3 categories "improved", "same" and "worse" and was performed by the participants themselves. Complications such as pyuria, hematuria, dysuria and retention of urine were also assessed. The health related behavior questionnaire asking about health behavior which affected the voiding symptoms such as "drinking before bedtime", "voiding at first desire" and "exercise" was also assessed in this visit.

## RESULT

From two community visits, 879 elderly men were initially evaluated by the IPSS and QOL questionnaire. The IPSS score was divided into 4 categories : 0-2, 3-7, 8-19 and 20-35 which represented normal, mild, moderate and severe symptoms respectively. The prevalence of each IPSS and QOL category is shown in Table 1. The prevalence of

**Table 1. Prevalence of International Prostate Symptom Score (IPSS) and Quality Of Life score according to category and prevalence of symptomatic BPH according to age.**

IPSS		0-2	3-7	8-19	20-35
N=879	Prevalence	26.2 (23.3-29.1)	32.5 (29.4-35.6)	35.5 (32.3-38.7)	5.8 (4.3-7.4)
QOL		0-1	2-4	5-6	-
N=540	Prevalence	47.2	49.1	3.7	-
Age		60-69	70-79	>80	Total
N=879	Prevalence of BPH	37.1	47.0	60.9	48.3

symptomatic BPH which meant that the IPSS was >7 was 41.3 per cent (95%CI 38.04-44.55). Uroflowmetry was done in 448 men but only 39.5 per cent had a voided volume of 150 ml or more and in this group, two thirds had a normal peak flow rate (>15 ml/sec).

At the first visit to the community 848 elderly men participated in the initial screening and only 388 men or 45.8 per cent of initial screening were followed-up. In the follow-up group, 254 men or 65.5 per cent had an initial IPSS score and overall assessment at 1 year. The results of the overall assessment according to the severity of IPSS are shown in Table 2.

IPSS change was another natural history outcome which was evaluated. Two hundred and seventy seven men had complete data for IPSS at the initial and follow-up visits. The change in IPSS category between the two visits is shown in Table 3. For example, there were 63 men who had IPSS between 0-2 in the initial visit and the IPSS was still the same in only 33 men in this group at the follow-up visit. There were 23 and 7 men in this group in

whom the IPSS in the follow-up visit had increased to 3-7 and 8-9 respectively. This table demonstrates that 40 men (in bold type) had a changed IPSS from 0-7 to 8-35 and it was interpreted that the incidence of symptomatic BPH was 40 in 277 men or 14.4 per cent per year.

The baseline data of the follow-up group (n=334) and the lost to follow-up group (n=460) was comparable as shown in Table 4.

In the follow-up group, 314 men were evaluated for complications of BPH; these were dysuria, pyuria, hematuria and retention of urine in 2.5, 2.5, 1.5 and 0.6 per cent respectively. The rest of the group (92.4%) had no complications.

At the second or follow-up visit, the health related behavior of the 162 men was evaluated. The results showed that 76.8 per cent drank water before bedtime everynight, 71.8 per cent voided at first desire and 76.9 per cent noticed that the greater the volume voided, the stronger the stream.

## DISCUSSION

The prevalence of symptomatic BPH in elderly men according to age and overall prevalence

**Table 2. Overall assessment after 1 year follow-up according to the International Prostate Symptom Score (IPSS) severity.**

IPSS	Improved	Same	Worse	n
0-2	4	51	5	60
3-7	5	75	10	90
8-19	8	62	19	89
20-35	3	11	1	15
Total	20	199	35	254
0-35	7.9%	78.3%	13.8%	254
(Total population)	(4.6-11.2)	(73.3-83.4)	(9.5-18.0)	
8-35	10.6%	70.2%	19.2%	104
(Symptomatic BPH)	(4.7-16.5)	(61.4-79.0)	(11.7-26.8)	

**Table 3. Change in International Prostate Symptom Score (IPSS) category between the initial and follow-up visits in 277 men.**

	IPSS	Follow-up visit				N
		0-2	3-7	8-19	20-35	
Initial visit	0-2	33	23	7	-	63
	3-7	22	45	32	1	100
	8-19	12	32	47	8	99
	20-35	-	2	9	4	15

**Table 4. Baseline data of the follow-up and lost to follow-up groups.**

Baseline data	Follow-up group (n=334)	Lost to follow-up group (n=460)
Age	69.02	68.47
IPSS	7.62	7.61
QOL	1.85	1.84
Severity of BPH (Mild : Moderate : Severe)	59 : 35 : 6	60 : 33 : 7

Note : IPSS = International Prostate Symptom Score,

QOL = Quality of Life, BPH = Benign Prostatic Hyperplasia

in this study is similar to the prevalence in Asian men which is about 40 per cent and increases with age<sup>(1)</sup>. From this figure, the prevalence of severe symptomatic BPH was 5.8 per cent or about 150,000 elderly men all over the country. So the burden of the disease is quite large. The QOL in these men with BPH was quite good. The QOL was "terrible" in only 3.7 per cent. From DRE screening the authors found an abnormal DRE in 8.7 per cent and they were excluded from the BPH study. Uroflowmetry done in the community was possible but the reliability was low due to the low volume voided. So the authors do not recommend uroflowmetry for the screening of BPH in the community.

The natural history of BPH after one year varied from case to case, was unpredictable and did not depend on the initial IPSS severity. This result is similar to other epidemiological studies<sup>(2-4)</sup>. The incidence of symptomatic BPH per year in the present study was also similar to the study of Diokno in which the annual incidence rate was 16.4 per cent<sup>(2)</sup>. The complication rate in the present study was also acceptable. Overall, the rate of acute urinary retention was 6.8 (95%CI is 5.2-8.9) events per 1,000 person-years of follow-up or 0.68 per cent<sup>(5)</sup>.

Knowledge concerning the natural history of BPH in the Thai community will be useful when the effectiveness of new treatments is studied by comparing them with the natural history of BPH or a watchful waiting treatment.

In the management of BPH, symptoms and how troublesome these are to the patients, is more important than the urodynamic findings or prostate size. In this study, it was found that three quarters of the elderly men had health related behavior which might affect the voiding symptom such as an increase of nocturia due to drinking before bedtime and an increase in frequency, urgency, and bladder instability due to voiding at first desire. So if this behavior is changed or modified, BPH symptoms especially irritative symptoms should be prevented.

## SUMMARY

The prevalence of symptomatic BPH (IPSS >7) in Thai elderly men in an urban community was 41.3 per cent. At one year follow-up, the overall assessment was "improved" "same" and "worse" in 10.6, 70.2 and 19.2 per cent respectively. Three quarters of the elderly men had behavior which might increase the BPH symptoms.

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## โรคต่อมลูกหมากโตในชายไทยสูงอายุในชุมชนเมือง : ความชุก, ธรรมชาติของโรค และพฤติกรรมสุขภาพ

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**ปัญหา :** โรคต่อมลูกหมากโตเป็นโรคที่พบบ่อยในชายไทยสูงอายุ แต่ความชุกของโรคนี้ในคนไทยและการดำเนินของโรคยังไม่ทราบแน่ชัด

**วัตถุประสงค์ :** เพื่อหาความชุกของโรคต่อมลูกหมากโตที่มีอาการ การดำเนินโรคตามธรรมชาติ และพฤติกรรมสุขภาพที่มีผลกระทบต่ออาการถ่ายปัสสาวะ

**วัสดุและวิธีการ :** ผู้สูงอายุ 879 คน ในชุมชนรอบโรงพยาบาลศิริราช ได้รับการประเมินอาการถ่ายปัสสาวะผิดปกติโดยใช้แบบประเมินอาการต่อมลูกหมากโตตามมาตรฐานสากล (IPSS) และแบบประเมินคุณภาพชีวิต เพื่อหาความชุกของโรคต่อมลูกหมากโต จากนั้นเมื่อครบ 1 ปี มีการตรวจติดตามในลักษณะเดียวกัน พร้อมทั้งประเมินผลโดยรวม และประเมินภาวะแทรกซ้อน ส่วนพฤติกรรมสุขภาพได้รับการประเมินในครั้งนี้อยู่

**ผล :** ความชุกของโรคต่อมลูกหมากโตในชุมชนเท่ากับร้อยละ 41.3 ธรรมชาติของโรคนี้เมื่อครบ 1 ปี พบว่าอาการดีขึ้น, คงเดิม และเลวลง เท่ากับร้อยละ 10.6, 70.2 และ 19.2 ตามลำดับ ภาวะแทรกซ้อน ใน 1 ปี มีประมาณร้อยละ 10 และ 3 ใน 4 ของผู้สูงอายุมีพฤติกรรมสุขภาพที่เสี่ยงต่อการถ่ายปัสสาวะผิดปกติ

**สรุป :** ความชุกของโรคต่อมลูกหมากโตมีสูง และธรรมชาติของโรคมีหลายแบบ ไม่สามารถทำนายได้

**คำสำคัญ :** โรคต่อมลูกหมากโต, ความชุก, ธรรมชาติของโรค, พฤติกรรมสุขภาพ

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