

# Prevalence of Erectile Dysfunction among Treated Hypertensive Males

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**Objective:** Study the prevalence rate of erectile dysfunction (ED) in treated hypertensive males.

**Material and Method:** Four hundred and twenty nine patients attending the outpatient clinic at Siriraj Hospital between April 2001 and October 2002 were interviewed. The International Index of Erectile Function, a 5-item version (IIEF-5) questionnaire was used. All questions were carried out by a well-trained interviewer.

**Result:** Of the 429 patients (mean age of  $57.5 \pm 12.0$  years) interviewed, 241 cases (56.2%) reported ED. The prevalence was found to increase with age: from 0% in men aged < 40 years, 47.4% in men aged 40–59 years, and 75.3% in men aged  $\geq 60$  years. Risk of ED was significantly ( $p < 0.01$ ) associated with the elderly (OR = 4.7, 95%CI = 3.1-7.1), patients who suffered from hypertension longer than 5 years (OR = 4.0, 95%CI = 2.6–6.1), those with a history of back/pelvic surgery (OR = 2.8, 95%CI = 1.4-4.8), smoking (OR = 1.5, 95%CI = 1.0-2.2), alcohol ingestion (OR = 2.0, 95%CI = 1.3-3.0), diabetes mellitus (OR = 6.3, 95%CI = 3.5-11.2), diuretics (OR = 1.9, 95%CI = 1.3-2.8), and alpha-2 agonist (OR = 7.9, 95%CI = 2.3-26.1) usage. On multivariate regression analyses, the elderly (OR = 4.0, 95%CI = 2.5-6.4), diabetes mellitus (OR = 6.4, 95%CI = 3.5-11.8), the usage of diuretic (OR = 2.1, 95%CI = 1.3-3.4), and alpha-2 agonist (OR = 6.0, 95%CI = 1.7-21.3) predicted ED ( $p < 0.005$  in all categories). Neither history of back/pelvic operation, smoking, alcohol ingestion, overweight (BMI  $\geq 30$  kg/m<sup>2</sup>), or any other antihypertensive medications independently predicted ED.

**Conclusion:** Our results indicated that ED in male hypertensive patients is common and the cause should be sought and avoided. Diabetic patients or those who have been using diuretic or alpha-2 agonists should receive much attention and be routinely evaluated for ED.

**Keywords:** Hypertension, Erectile dysfunction

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Sexual health is an important part of an individual's overall physical and emotional well-being. The inability to obtain or maintain an erection sufficient for satisfactory sexual performance, defined officially as erectile dysfunction (ED)<sup>(1-2)</sup>, could have vast negative effects on their quality of life and their partners<sup>(3)</sup>. Many countries, therefore, have looked at this

particular problem to understand and establish supportive and therapeutic strategies. Recent population-based surveys, mostly from Canada, USA, and Europe, have suggested that the prevalence of ED varied from 31.6% to 52% among men over the age of 40<sup>(4-7)</sup>. The prevalence rate of ED in South East Asia is not much different (36.6% to 51.3%)<sup>(8-10)</sup>. Our nationwide epidemiological study had also shown a relatively high figure of ED in urban men (37.5%)<sup>(11)</sup>. Hypertension, a very common condition in clinical practice, and antihypertensive medication can cause ED<sup>(4,12-14)</sup>. Therefore, this study was carried out to give an insight into this problem among our hypertensive males.

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## Objective

To study the prevalence and risks of ED in treated hypertensive male patients attending at the outpatient clinic, Siriraj Hospital.

## Material and Method

### Study Design

Ambulatory male hypertensive patients attending the Hypertension Clinic, at the Outpatient Department, Siriraj Hospital were invited to participate in this study. This study was carried out under GCP regulations from April 2001 to October 2002. After the verbal consent of individual volunteers was obtained, a detailed questionnaire addressing patients' age, duration of known hypertension, drug treatment, smoking habits, alcohol consumption, and pelvic/spine injury, radiation, or surgery was devised. Associated clinical conditions such as diabetes mellitus, neuropathy, cardiovascular disease, chronic kidney disease, benign prostatic hypertrophy, arthritis, depressive illness, cerebrovascular disease, intermittent claudication or absent foot pulse, and other illnesses that could interfere with sexual health were noted. The International Index of Erectile Function, the 5-item Thai version (IIEF-5) questionnaire, a modified Sexual Human Inventory for Males (SHIM), was used<sup>(15-16)</sup>. The presence of ED was defined if the IIEF-5 score was less than 21. The severity of ED was further classified into mild (IIEF-5 score

of 16-20), moderate (11-15), and severe or complete (10 or less).

Answering all questions that appeared in the IIEF-5 by volunteers was facilitated by a well-trained male interviewer. Administrative and logistic details such as handling non-responders and partial responders were covered during the training sessions. Medical terms were clearly defined and explained.

Hypertension was diagnosed according to the World Health Organization (WHO) Guidelines<sup>(17)</sup> and those who were already on antihypertensive drugs. ED was defined according to the National Institute of Health Consensus Panel on Erectile Dysfunction as the inability to achieve or maintain an erection sufficient for satisfactory sexual function<sup>(1)</sup>.

### Statistical analysis

Results were demonstrated as mean  $\pm$  standard deviation (SD) or percent (%) where appropriate. Statistical analyses were performed using Statistical Packages for Social Sciences (SPSS 9.0). Student's *t*-test and Chi-square test were used to compare the continuous and categorical data, respectively, between the ED and the non-ED groups. A *p*-value of less than 0.05 was considered statistically significant.

## Results

Four hundred and twenty nine hypertensive

**Table 1.** Patients' characteristic and known risk factors among 429 volunteers\*

Patients' characteristics	Number of volunteers (%)
Elderly	199 (46.4)
Obese	60 (14.0)
History of hypertension $\geq$ 5 years	290 (67.6)
History of ever smoking	244 (56.9)
History of pelvic/spine surgery or radiation	63 (14.7)
Chronic alcohol ingestion	151 (35.2)
Diabetes mellitus	105 (24.5)
Ischemic heart disease	85 (19.9)
Benign prostatic hypertrophy	24 (5.6)
Hypothyroidism with thyroxin replacement	7 (1.6)
Major depression	2 (0.5)
Chronic kidney disease	1 (0.2)
No associated illnesses	233 (52.0)

Elderly = age  $\geq$ 60 years,

Obese = BMI  $\geq$ 30 kg/m<sup>2</sup>,

History of smoking = volunteers who regularly smoked, at least > 1 cigarette/d in the past 6 months

Chronic alcohol ingestion = volunteers who drank alcoholic beverages of > 1 bottle (180 cc.)/week in the past 6 months

\*Some patients had 2 or more associated illnesses

volunteers with a mean age of  $57.5 \pm 12.0$  years (range 28 to 94 years), and a BMI of  $26.3 \pm 3.6$  kg/m<sup>2</sup> (range 15.6 to 42.3 kg/m<sup>2</sup>) were recruited in this study. The duration of hypertension was <5 years in 139 cases, 5 to 10 years in 163 cases and > 10 years in 127 cases. The most prevalent risk was duration of hypertension  $\geq 5$  years (67.6%). Other risk factors e.g. smoking history (56.9%), elderly defined as age  $\geq 60$  years (46.4%), chronic alcohol ingestion (35.2%), and diabetes mellitus (24.5%) were commonly found (Table 1). Among treated hypertensive patients, combination drug therapy was common. The average number of prescribed antihypertensive drugs was  $2.0 \pm 0.8$  items in each patient (range 1 to 5 items).

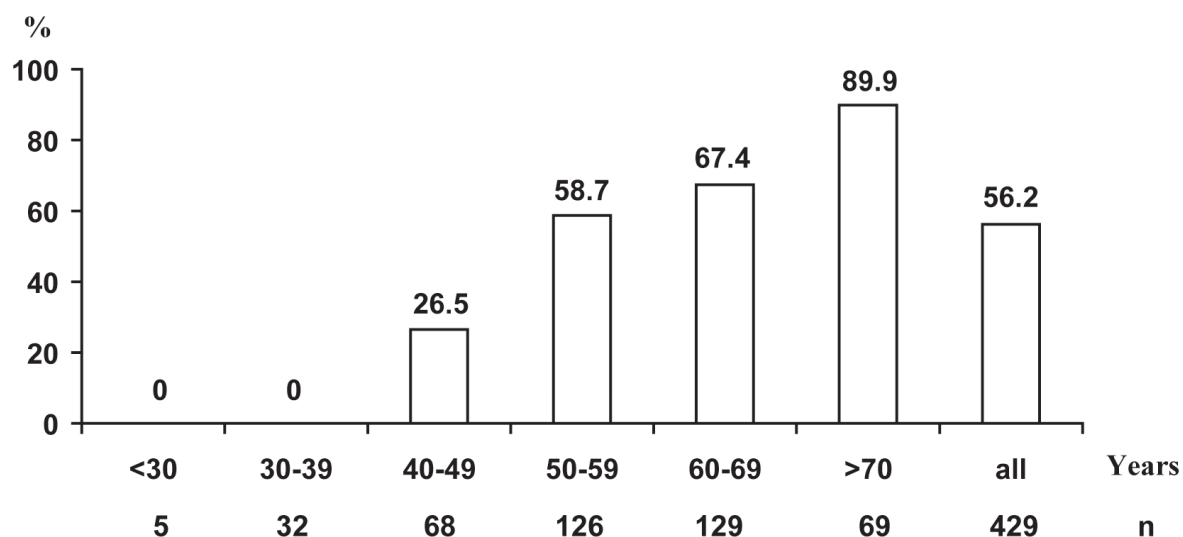
According to the IIEF-5 questionnaire, 241 cases (56.2%) reported ED. Of the 324 hypertensive

volunteers without any known history of diabetes mellitus, 152 (46.9%) suffered ED. Moreover, among 105 hypertensive diabetic patients, 89 cases (84.8%) also reported ED (data not shown). The prevalence and severity of ED increased with advancing age ( $r = 0.52, p < 0.01$  and  $r = 0.61, p < 0.01$ , respectively) (Table 2 and Fig. 1, 2). Pearson coefficients between age and IIEF-5 Score also showed a statistically inverse relation ( $r = -0.65, p < 0.001$ ). The prevalence of ED increased while the IIEF-5 score decreased with increasing duration of hypertension and number of antihypertensive drugs used ( $r = -0.33, p < 0.01$  and  $r = -0.12, p = 0.02$ , respectively) (Table 3).

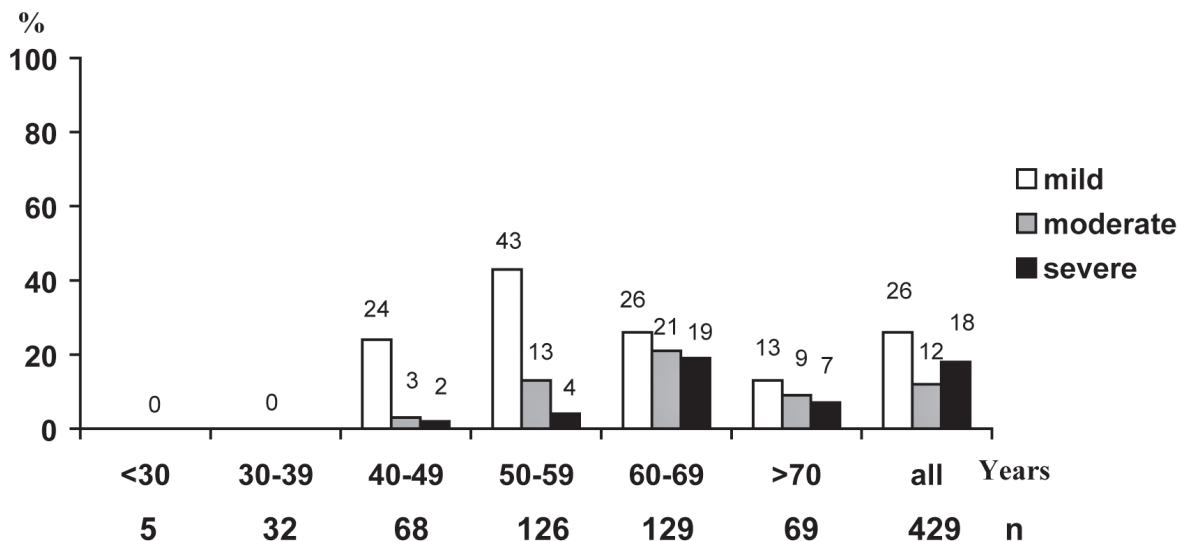
Certain current diseases, associated cardiovascular risks and complications and types of antihypertensive drugs used found in these patients were

**Table 2.** International Index of Erectile Function-5 Score for men in different age groups

Age (years)	Number of patients (%)	International Index of Erectile Function-5 score
<30	5 (1.1)	25±0.0
30-39	32 (7.4)	24.16±0.92
40-49	68 (15.9)	21.31±4.63
50-59	126 (29.4)	17.84±5.64
60-69	129 (30.1)	14.39±7.28
>70	69 (16.1)	6.45±7.02



**Fig. 1** The prevalence of erectile dysfunction according to each age group



**Fig. 2** The prevalence of erectile dysfunction: stratified by its severity according to each age group

**Table 3.** Erectile Function according to the duration of hypertension and the number of antihypertensive drugs used

Characteristic	Prevalence of ED n (%)	Mean IIEF-5 score* Score (SD)
Duration (years)		
<5 (n = 139)	47 (33.8)	19.73 (6.9)
5-10 (n = 163)	104 (63.8)	15.33 (7.3)
>10 (n = 127)	90 (70.9)	13.03 (8.3)
Number of antihypertensive drugs used		
1 (n = 110)	52 (47.3)	16.95 (8.2)
2 (n = 207)	107 (51.7)	16.48 (8.2)
3 (n = 105)	75 (71.4)	14.55 (7.2)
≥ 4 (n = 7)	7 (100.0)	13.00 (4.4)

ED = Erectile dysfunction,

SD = Standard deviation,

\*International Index of Erectile Function-5 score

analyzed to find their association with ED. The risk of ED significantly increased among the elderly ( $\geq 60$  years), those with a duration of hypertension  $\geq 5$  years, those with a history of back/pelvic surgery, current smoking, chronic alcohol ingestion, diabetes mellitus, benign prostatic hypertrophy, except for those who were obese and those with ischemic heart disease

(Table 4). Among antihypertensive drugs used, diuretics and alpha-2 agonists were significantly associated with ED (Table 5). However, on multivariate regression analyses, only elderly, those with a duration of hypertension  $\geq 5$  years, diabetes mellitus patients and those who used diuretics and alpha-2 agonists predicted ED (Table 6).

**Table 4.** Comparison on the patients' characteristics and risk factors between ED and non-ED patients

Patients' characteristics and risk factors	ED-patients	Non-ED patients	p-value	Odds ratio	95% Confidence interval
Age (years)	63.0±9.5	50.5±11.2	<0.001*	12.5	10.5-14.4
Elderly (%)	62.2	26.1	<0.001*	4.7	3.1-7.1
Obese (%)	13.3	14.9	0.63	0.9	0.6-1.5
History of hypertension ≥ 5 years (%)	80.5	51.1	<0.001*	4.0	2.6-6.1
History of smoking (%)	61.4	51.1	0.03*	1.5	1.04-2.2
History of pelvic/spine surgery or radiation (%)	19.5	8.5	0.001*	2.6	1.44-4.8
Chronic alcohol ingestion (%)	41.9	26.6	0.001*	2.0	1.3-3.0
Diabetes mellitus (%)	36.9	8.5	<0.001*	6.3	6.5-11.2
Ischemic heart disease (%)	19.6	20.2	0.89	1.0	0.6-1.7
Benign prostatic hypertrophy (%)	7.9	2.7	0.019*	3.1	1.2-8.6

ED = Erectile dysfunction,

BMI = Body mass index,

Elderly = age ≥ 60 years,

History of smoking = volunteers who regularly smoked, at least > 1 cigarette/d in the past 6 months

Chronic alcohol ingestion = volunteers who drank alcoholic beverages of > 1 bottle (180 cc.)/week in the past 6 months

**Table 5.** Comparison of the patients' antihypertensive drugs used between ED and non-ED patients

Antihypertensive drugs used	ED-patients n = 241 (%)	Non-ED patients n = 188 (%)	p-value	Odds ratio	95% Confidence interval
Diuretic (n = 188)	122 (50.6)	66 (35.1)	0.001*	1.9	1.3-2.8
Beta blocker (n = 279)	156 (64.7)	123 (65.4)	0.88	1.0	0.7-1.5
Calcium antagonist (n = 232)	130 (53.9)	102 (54.3)	0.95	1.0	0.8-1.3
Alpha blocker (n = 22)	9 (4.8)	13 (5.4)	0.77	0.9	0.4-2.1
ACE Inhibitors (n = 110)	66 (27.4)	44 (23.4)	0.35	0.8	0.5-1.3
ARB (n = 5)	4 (1.7)	1 (0.5)	0.28	0.3	0.04-2.9
Alpha-2 agonists (n = 30)	27 (11.2)	3 (1.6)	<0.001*	7.8	2.3-26.1

ED = Erectile dysfunction,

ACE inhibitor = Angiotensin converting enzyme inhibitors,

ARB = Angiotensin receptor blockers

## Discussion

The reported prevalence of ED among Asian countries varied widely from 18.8% in Iran<sup>(18)</sup> to 63.2% in Japan<sup>(19)</sup> depending on the method of data collection, type of questionnaire and surveillance group. A self-administered questionnaire or interviewer-facilitated questionnaire, the age group of volunteers etc. definitely will have an impact on the prevalence of ED. For instance, the sub-study of the Global Study of Sexual Attitudes and Behavior investigators have reported the prevalence of ED, using a random population

survey among urban men who had at least one dysfunction in nine Asian countries i.e. early ejaculation, erectile difficulties, inabilities to achieve orgasm etc., which varied from 32% (range 25% - 42%) to 82% (range 75% - 89%)<sup>(20)</sup>. The estimation of overall prevalence of ED among 1,250 urban Thai men aged between 40 to 70 years was 37.5% (36.4% in smaller provinces and 46.4% for larger provinces)<sup>(11)</sup>. Our study demonstrated a higher prevalence of ED (56.2%) compared to the above nationwide survey. This considerably higher rate ( $p < 0.001$ ) could probably be due to a number of reasons

**Table 6.** Multiple logistics regression analyses on the patients' risks and the prevalence of ED

Patients' characteristics and risk factors	p-value	Odds ratio	95% Confidence interval
Elderly	<0.001*	3.4	2.1-5.5
History of smoking	0.89	1.0	0.6-1.6
History of hypertension $\geq$ 5 years	<0.001*	2.6	1.6-4.3
History of pelvic/spine surgery or radiation	0.16	1.7	0.8-3.4
Chronic alcohol ingestion	0.15	1.5	0.9-2.4
Diabetes mellitus	<0.001*	6.3	3.4-11.8
Benign prostatic hypertrophy	0.59	1.4	0.4-4.4
Antihypertensive drugs used			
Diuretic (n = 188)	0.003*	2.1	1.3-3.3
Alpha-2 agonists (n = 30)	0.013*	5.0	1.4-17.6

ED = Erectile dysfunction,

Elderly = age  $\geq$  60 years

History of smoking = volunteers who regularly smoked, at least > 1 cigarette/d in the past 6 months

Chronic alcohol ingestion = volunteers who drank alcoholic beverages of > 1 bottle (180 cc.)/week in the past 6 months

e.g. surveillance selectively carried out among hypertensive patients in the tertiary care hospital who usually had associated clinical conditions. Moreover, 16.1% of our studied volunteers were > 70 years old, whereas the studied population in the nationwide survey was younger. However, our results conformed to those reported from Singapore (51.3%,  $p = 0.20$ )<sup>(8)</sup>, Brazil (53.9%,  $p = 0.46$ )<sup>(21)</sup> and the Massachusetts Male Aging Study (52%,  $p = 0.15$ )<sup>(4)</sup>.

Previous studies had demonstrated that ED is 2 to 4 times more prevalent among diabetic patients than non-diabetic patients, which was similar to our result (84.8% vs. 46.9%)<sup>(22-23)</sup>. A higher prevalence of ED (84.8%) was found among 105 patients being treated for both diabetes and hypertension. Again, it conformed to those reported from the nationwide study in our country (85%)<sup>(11)</sup>, the Israel Diabetes Research Group (86.5%,  $p = 0.74$ )<sup>(24)</sup>, a French study (77%,  $p = 0.09$ )<sup>(25)</sup> and a Japanese study (90.0%,  $p = 0.13$ )<sup>(26)</sup>.

The correlation of the age-related prevalence of ED and IIEF-score is reported elsewhere<sup>(6,14)</sup>. This study also gave similar results ( $r = -0.65$ ). However, the correlation coefficient ( $r$ ) in this study lies between that reported by Rhoden et al ( $r = -0.35$ ,  $p < 0.01$ )<sup>(20)</sup> and Cao et al ( $r = -0.98$ ,  $p < 0.01$ )<sup>(27)</sup>. However, our findings of a lower prevalence in younger adults as compared to older ones, were also consistent with other reports<sup>(6,14)</sup>.

The severity of ED also increases with advancing age. The age related severity was similar to that reported from the Men's Health Study in Japan<sup>(19)</sup>.

Moreover, it was found that the probability of severe ED in hypertensive patients in their 6<sup>th</sup> decade was more than twice as great as those in their 5<sup>th</sup> decade and five times as great for those in their 7<sup>th</sup> decade as compared with those in their 6<sup>th</sup> decade. This finding was also confirmed by Marumo and colleagues<sup>(14)</sup>.

The duration and severity of hypertension was shown to correlate with the severity of ED in this study as was confirmed by Giuliano and coworkers<sup>(25)</sup>. Although a weak but significant correlation of the prevalence of ED and the severity of hypertension demonstrated by the number of antihypertensive drugs needed in controlling blood pressure was shown in our study (data not shown). This was also found by the same authors<sup>(25)</sup>.

Although concomitant risks i.e. diabetes mellitus<sup>(12,23-26)</sup>, smoking<sup>(4,8,12)</sup>, chronic alcohol consumption<sup>(10)</sup>, a history of any pelvic/spine surgery or radiation<sup>(28)</sup> and treatment for benign prostatic hypertrophy were found to be associated with the problem of ED in this study, only diabetes mellitus was an independent risk factor. The risk of developing ED among hypertensive volunteers was 6.3 fold among diabetic patients. Since, the development of ED is often caused by several interrelated mechanisms, including vascular disease, endothelial dysfunction, autonomic neuropathy, hormone imbalance, and certain medications, early detection and intensive control of all the possible factors should be attempted i.e. good glycemic control and abstinence from smoking and alcohol consumption etc. This should minimize the problem of ED.

One of the crucial issues is that the greater rate of ED in hypertensive individuals caused by hypertension, antihypertensive drug treatment and associated illnesses may represent one of the major threats to drug compliance. On the other hand, if the patients were able to stay on therapy, it may lead to deterioration in patients' quality of life instead. Therefore, it is important for general practitioners to routinely explore the problem of ED among hypertensive patients, especially those who are elderly, have diabetes mellitus, and a long duration of hypertension  $\geq 5$  years. Physicians should be aware of the ED side effects produced by certain antihypertensive drugs and be ready to discuss the potential occurrence of these side effects with their patients.

An improvement in ED was shown after brief aggressive treatment<sup>(7)</sup>. Our results showed that diuretic and alpha-2 agonists, but not beta-blockers had a significant impact on sexual function, which is consistent with the previous reports<sup>(29)</sup>. This can be explained by the type of beta-blockers used. Atenolol, a water soluble one, is the major agent used (87.1%) (data not shown) that may have less effect on ED<sup>(30)</sup>. Therefore, choosing an appropriate drug is also important to solve the problem of ED. In many cases, a change in the patient's drug regimen may help patients overcome specific sexual side effects from medical treatment. Practitioners should be cautious in selecting an antihypertensive therapy that is highly effective in lowering blood pressure but preserves patient quality of life.

### Conclusion

Sexual dysfunction in male hypertensive patients is common. Elderly diabetic men with long standing hypertension who are taking diuretics or alpha-2 agonists should receive greater attention for sexual dysfunction.

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### References

1. NIH Consensus Conference. Impotence. NIH Consensus Development Panel on Impotence. *JAMA* 1993; 270: 83-90.
2. Jardin A, Wagner G, Khoury S, Giuliano F, Goldstein I, Padma-Nathan H, editors. Erectile dysfunction. First International Consultation on Erectile Dysfunction. Paris, 1-3 July 1999. Plymouth: Health Publications; 2000.
3. Mallis D, Moisisidis K, Kirana PS, Papaharitou S, Simos G, Hatzichristou D. Moderate and severe erectile dysfunction equally affects life satisfaction. *J Sex Med* 2006; 3: 442-9.
4. Feldman HA, Goldstein I, Hatzichristou DG, Krane RJ, McKinlay JB. Impotence and its medical and psychosocial correlates: results of the Massachusetts Male Aging Study. *J Urol* 1994; 151: 54-61.
5. Grover SA, Lowensteyn I, Kaouache M, Marchand S, Coupal L, DeCarolis E, et al. The prevalence of erectile dysfunction in the primary care setting: importance of risk factors for diabetes and vascular disease. *Arch Intern Med* 2006; 166: 213-9.
6. Giuliano F, Chevret-Measson M, Tsatsaris A, Reitz C, Murino M, Thonneau P. Prevalence of erectile dysfunction in France: results of an epidemiological survey of a representative sample of 1004 men. *Eur Urol* 2002; 42: 382-9.
7. Haczynski J, Lew-Starowicz Z, Darewicz B, Krajka K, Piotrowicz R, Ciesielska B. The prevalence of erectile dysfunction in men visiting outpatient clinics. *Int J Impot Res* 2006; 18: 359-63.
8. Tan JK, Hong CY, Png DJ, Liew LC, Wong ML. Erectile dysfunction in Singapore: prevalence and its associated factors—a population-based study. *Singapore Med J* 2003; 44: 20-6.
9. Cho BL, Kim YS, Choi YS, Hong MH, Seo HG, Lee SY, et al. Prevalence and risk factors for erectile dysfunction in primary care: results of a Korean study. *Int J Impot Res* 2003; 15: 323-8.
10. Bai Q, Xu QQ, Jiang H, Zhang WL, Wang XH, Zhu JC. Prevalence and risk factors of erectile dysfunction in three cities of China: a community-based study. *Asian J Androl* 2004; 6: 343-8.
11. Thai Erectile Dysfunction Epidemiologic Study Group (TEDES). An epidemiological study of erectile dysfunction in Thailand (Part 1: Prevalence). *J Med Assoc Thai* 2000; 83: 872-9.
12. Saigal CS, Wessells H, Pace J, Schonlau M, Wilt TJ. Predictors and prevalence of erectile dysfunction in a racially diverse population. *Arch Intern Med* 2006; 166: 207-12.
13. Ponholzer A, Temml C, Mock K, Marszalek M, Obermayr R, Madersbacher S. Prevalence and risk factors for erectile dysfunction in 2869 men using a validated questionnaire. *Eur Urol* 2005; 47: 80-5.
14. Marumo K, Nakashima J, Murai M. Age-related prevalence of erectile dysfunction in Japan: assessment by the International Index of Erectile

- Function. *Int J Urol* 2001; 8: 53-9.
15. Cappelleri JC, Rosen RC. The Sexual Health Inventory for Men (SHIM): a 5-year review of research and clinical experience. *Int J Impot Res* 2005; 17: 307-19.
  16. Rosen RC, Cappelleri JC, Smith MD, Lipsky J, Pena BM. Development and evaluation of an abridged, 5-item version of the International Index of Erectile Function (IIEF-5) as a diagnostic tool for erectile dysfunction. *Int J Impot Res* 1999; 11: 319-26.
  17. Chalmers J, MacMahon S, Mancia G, Whitworth J, Beilin L, Hansson L, et al. 1999 World Health Organization-International Society of Hypertension Guidelines for the management of hypertension. Guidelines sub-committee of the World Health Organization. *Clin Exp Hypertens* 1999; 21: 1009-60.
  18. Safarinejad MR. Prevalence and risk factors for erectile dysfunction in a population-based study in Iran. *Int J Impot Res* 2003; 15: 246-52.
  19. Sasayama S, Ishii N, Ishikura F, Kamijima G, Ogawa S, Kanmatsuse K, et al. Men's Health Study: epidemiology of erectile dysfunction and cardiovascular disease. *Circ J* 2003; 67: 656-9.
  20. Nicolosi A, Glasser DB, Kim SC, Marumo K, Laumann EO. Sexual behaviour and dysfunction and help-seeking patterns in adults aged 40-80 years in the urban population of Asian countries. *BJU Int* 2005; 95: 609-14.
  21. Rhoden EL, Teloken C, Sogari PR, Vargas Souto CA. The use of the simplified International Index of Erectile Function (IIEF-5) as a diagnostic tool to study the prevalence of erectile dysfunction. *Int J Impot Res* 2002; 14: 245-50.
  22. Braun M, Wassmer G, Klotz T, Reifenrath B, Mathers M, Engelmann U. Epidemiology of erectile dysfunction: results of the 'Cologne Male Survey'. *Int J Impot Res* 2000; 12: 305-11.
  23. Naya Y, Mizutani Y, Ochiai A, Soh J, Kawauchi A, Fujito A, et al. Preliminary report of association of chronic diseases and erectile dysfunction in middle-aged men in Japan. *Urology* 2003;62:532-6.
  24. Kalter-Leibovici O, Wainstein J, Ziv A, Harman-Bohem I, Murad H, Raz I. Clinical, socioeconomic, and lifestyle parameters associated with erectile dysfunction among diabetic men. *Diabetes Care* 2005; 28: 1739-44.
  25. Giuliano FA, Leriche A, Jaudinot EO, de Gendre AS. Prevalence of erectile dysfunction among 7689 patients with diabetes or hypertension, or both. *Urology* 2004; 64: 1196-201.
  26. Sasaki H, Yamasaki H, Ogawa K, Nanjo K, Kawamori R, Iwamoto Y, et al. Prevalence and risk factors for erectile dysfunction in Japanese diabetics. *Diabetes Res Clin Pract* 2005; 70: 81-9.
  27. Cao WL, Han YF, Wang YX. Effect of aging on male sexual function in 93 patients using international index of erectile function. *Zhonghua Nan Ke Xue* 2002; 8: 425-7.
  28. Zippe C, Nandipati K, Agarwal A, Raina R. Sexual dysfunction after pelvic surgery. *Int J Impot Res* 2006; 18: 1-18.
  29. Weiss RJ. Effects of antihypertensive agents on sexual function. *Am Fam Physician* 1991; 44: 2075-82.
  30. Silvestri A, Galetta P, Cerquetani E, Marazzi G, Patrizi R, Fini M, et al. Report of erectile dysfunction after therapy with beta-blockers is related to patient knowledge of side effects and is reversed by placebo. *Eur Heart J* 2003; 24: 1928-32.



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## ความชุกของภาวะอวัยวะเพศไม่แข็งตัวในผู้ป่วยชายที่ได้รับการรักษาโรคความดันโลหิตสูง

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ได้ทำการศึกษาภาวะอวัยวะเพศไม่แข็งตัวในผู้ป่วยชายที่ได้รับการรักษาโรคความดันโลหิตสูงที่คลินิกผู้ป่วยนอก โรงพยาบาลศิริราชระหว่างเดือนเมษายน พ.ศ. 2544 ถึงเดือนตุลาคม พ.ศ. 2545 โดยใช้ International Index of Erectile Function ที่ได้รับการดัดแปลงเป็นชนิดแบบสอบถาม 5 ข้อ (IIEF-5) ทุกคำถามจะถูกถามโดยผู้สัมภาษณ์ที่ได้รับการฝึกฝนมาแล้วเป็นอย่างดี มีผู้เข้ารับการสัมภาษณ์ 429 ราย (อายุเฉลี่ย  $57.5 \pm 12$  ปี) พบ 241 ราย (ร้อยละ 56.2) มีปัญหาอวัยวะเพศไม่แข็งตัว ความชุกของภาวะดังกล่าวพบสูงขึ้นตามอายุโดยไม่พบเลยในผู้ป่วยอายุน้อยกว่า 40 ปี, พบร้อยละ 47.4 ในผู้ป่วยอายุ 40-59 ปี และร้อยละ 75.3 ในผู้ป่วยอายุมากกว่าหรือเท่ากับ 60 ปี ความเสี่ยงในการเกิดภาวะอวัยวะเพศไม่แข็งตัวเพิ่มขึ้นในผู้สูงอายุ (OR = 4.7, 95%CI = 3.1 - 7.1), ในผู้ป่วยที่เป็น โรคความดันโลหิตสูงมากกว่า 5 ปี (OR = 4.0, 95%CI = 2.6 - 6.1), ในผู้ป่วยที่มีประวัติได้รับการผ่าตัดหลังหรือ อังเชิงกราน (OR = 2.8, 95%CI = 1.4 - 4.8), ผู้ที่สูบบุหรี่ (OR = 1.5, 95%CI = 1.0 - 2.2), ผู้ที่ดื่มแอลกอฮอล์ (OR = 2.0, 95%CI = 1.3 - 3.0), ผู้ป่วยเบาหวาน (OR = 6.3, 95%CI = 3.5 - 11.2), ผู้ที่รับประทานยาขับปัสสาวะ (OR = 1.9, 95%CI = 1.3 - 2.8), และยากลุ่ม alpha-2 agonist (OR = 7.9, 95%CI = 2.3 - 26.1) จากการวิเคราะห์โดยวิธี multivariate regression ในผู้สูงอายุ (OR = 4.0, 95%CI = 2.5 - 6.4), ผู้ป่วยเบาหวาน (OR = 6.4, 95%CI = 3.5 - 11.8) ผู้ป่วยที่รับประทานยาขับปัสสาวะ (OR = 2.1, 95%CI = 1.3 - 3.4) และยากลุ่ม alpha-2 agonist (OR = 6.0, 95%CI = 1.7 - 21.3) พบว่าจะมีโอกาสเป็นภาวะอวัยวะเพศไม่แข็งตัวอย่างมีนัยสำคัญ ( $p < 0.005$  เมื่อพิจารณาทั้งกลุ่ม) ส่วนผู้ที่มีประวัติได้รับการผ่าตัดหลังหรืออังเชิงกราน, ผู้ที่สูบบุหรี่, ผู้ที่ดื่มแอลกอฮอล์, ผู้ที่อ้วน (ดัชนีมวลกาย  $\geq 30$  กก./ $m^2$ ) หรือรับประทานยาลดความดันโลหิตชนิดอื่น ๆ ไม่สามารถทำนายการเกิดภาวะอวัยวะเพศไม่แข็งตัวได้ โดยสรุปผลการศึกษาแสดงให้เห็นว่าภาวะเสื่อมสมรรถภาพทางเพศพบได้บ่อยในผู้ป่วยชายที่เป็นโรคความดันโลหิตสูง, ซึ่งควรค้นหาสาเหตุและแก้ไขปัญหานั้นที่หลีกเลี่ยงได้ ผู้ป่วยเบาหวานหรือผู้ป่วยที่รับประทานยาขับปัสสาวะหรือยาในกลุ่ม alpha-2 agonist ควรได้รับความสนใจให้มากและประเมินภาวะอวัยวะเพศไม่แข็งตัวอย่างสม่ำเสมอ

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