Prevalence of overactive bladder in Asian men: an epidemiological survey

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OBJECTIVE
To study the epidemiology of overactive bladder (OAB) and the influence of demographic factors on its incidence in Asian men.

SUBJECTS AND METHODS
A survey based on a self-administered questionnaire (locally translated in participating countries) was conducted between March 1998 and May 1998 to quantify the prevalence of OAB in a random sample of men (2369, aged 18-70+ years) visiting other than urology clinics in 26 centres in 11 Asian countries. The questionnaire was divided into two parts, i.e. social and demographic factors, and OAB symptoms. For OAB the questionnaire primarily focused on symptoms, degree of bother and treatment measures. The degree of bother was quantified by classifying it as mild, moderate and severe. The statistical relationship between demographics and OAB was assessed using the chi-square independent test.

RESULTS
The prevalence of OAB was 29.9% (709 men); OAB was more common in professional workers (43%), the high-income group (26%, income of >US$ 800) and urban dwellers (64%). With increasing age the incidence of OAB increased, i.e. the prevalence was 63% in men aged >70 years; the family history and type of toilets used had some relationship with OAB. Frequency (37%), urgency (34%), and frequency and urgency (10%) were the most common symptoms of OAB. Urge incontinence symptoms were reported by 13%. Some degree of bother was recorded in 32% of those with OAB, of whom only 5.9% received treatment for their OAB, with general practitioners and specialists being preferred equally.

CONCLUSIONS
The prevalence of OAB in Asian men is high and more common in older patients. The treatment rate for the symptoms was much lower than in western countries, suggesting a need for better education of patients and more research for effectively managing the OAB.

KEYWORDS
Asia, incontinence, overactive bladder, survey, prevalence

INTRODUCTION
The pathophysiology and management of the overactive bladder (OAB) has been the subject of intensive research, but the prevalence of OAB in the community has not been well documented [1]. Published reports on the effects of OAB on quality of life are also limited [2], suggesting that OAB is generally under-treated and under-diagnosed [3]. Furthermore, available reports mainly focus on the prevalence of urge incontinence, citing increased incidence with ageing [4]. In addition, the prevalence and epidemiology of OAB has only been reported in Asian women, and reports in Asian men are scarce. Globally, except for a European report [5], there has been no comprehensive epidemiological survey on the OAB in men. We report an epidemiological survey of all the presenting symptoms of OAB, with the aim of determining the prevalence and type of OAB symptoms (re-evaluated according to the current standard definition [6]), degree of bother, treatment rate and its association with social demographics.

SUBJECTS AND METHODS
A questionnaire-based survey was conducted between March 1998 and May 1998 to quantify the prevalence of OAB in Asian men. A randomly chosen sample (2369 men) of patients visiting other than urology clinics was surveyed in 26 centres in 11 Asian countries, i.e. China (two centres), Hong Kong (two), India (three), Indonesia (two), Malaysia (two), Pakistan (four), Philippines (two), Singapore (one), South Korea (three), Taiwan (three) and Thailand (two). The questionnaire was self-administered by the patients and when necessary help was given by the qualified personnel. The questionnaire was translated into the local language where necessary. It was divided into two parts, i.e. the social and demographic factors (age, occupation, monthly income, family history, type of toilet used and place of residence), and symptoms associated with OAB, primarily focusing on symptoms, degree of bother and treatment measures. Urgency with or without urge incontinence, usually with frequency and nocturia, was taken to indicate OAB [6]. Voiding of ≥8 times/day was defined as frequency; urgency is defined as a strong desire to void, and involuntary loss of urine with urgency was considered as urge incontinence. The degree of bother was quantified as mild, moderate or severe in answer to the question 'has OAB interfered with your work, social contact or regular daily activities', and using a scoring system of 0-5, where 0 was 'none of the time' and 5 'all of the time'. The statistical associations between demographics and OAB were assessed using the independent chi-squared test.

RESULTS
The prevalence in each country is shown in Table 1; overall, the prevalence of OAB in Asia...
was 29.9% (709 men), with Hong Kong and India reporting higher and lower incidences, respectively. With increasing age the prevalence increased (Fig. 1) and the symptoms of OAB were more common in professionals than in manual workers and others (not working) (Table 2). There was a higher incidence of OAB symptoms in the high-income group and in those who lived in an urban environment than in the low income group and rural population.

Frequency and urgency were the predominant symptoms; 16% of the cohort had both frequency and urgency symptoms, and urge incontinence alone was reported in 13% (Fig. 2). In all, 32% were bothered by OAB, with 70%, 14% and 14% reporting mild, moderate and severe bother, respectively. Irrespective of symptom severity in men with OAB symptoms, only 6% (42 men) sought some form of treatment, and chose GP or specialist consultation equally (2% for both).

The relationship between OAB and other factors was assessed using the odds ratio (Table 2). Age, type of toilets used and living environment were closely related to the symptoms of OAB. Although the prevalence increased with age there was no significant difference in those <70 (odds ratio 2.287) and >70 years old (2.808). Family history had a positive influence on the prevalence of OAB symptoms, accounting for 19% of the prevalence in respondents. The environment and type of toilets also had a positive influence on the prevalence of OAB symptoms. Patients using ‘sitting’ toilets and living in urban environments had a higher odds ratio than rural dwellers and users of ‘squatting’ toilets (Table 2).

**DISCUSSION**

The symptoms of OAB are known to compromise quality of life in the physical, social, emotional and psychological domains, and yet the disorder is under-treated and under-diagnosed. In particular these symptoms affect the social, psychological, occupational, domestic and physical capabilities of an individual. OAB predominantly arises from disturbed central neuronal control of the lower urinary tract, leading to poor functional bladder capacity [7]. Detrusor hyperactivity with impaired contractile function is a distinct physiological subset of detrusor hyper-reflexia and presents as an OAB, with incomplete and ineffective emptying [8].

According to the standard classification [6] the prevalence in the present study was 29.9% in Asian men. In a Swedish population, Geirsson et al. [9] reported a prevalence of 33%. The prevalence of OAB symptoms in Asian men can be attributed to cultural factors, possibly related to learned behaviour. Although one in three men is affected by OAB most of them are not severely bothered (14%) by the symptoms. We also assume that the estimated prevalence of 29.9% could be even higher, as the treatment-seeking behaviour is less in Asians, and because of the perception and social taboos of the problem in some countries, e.g. India. However, the estimated Asian prevalence is slightly higher than in most European countries, where the average was 15.6% in men [2]. The lower prevalence of OAB in South Asian countries, i.e. India and Pakistan, at 13.6% and 23.5% (mean 18.6%) is interesting, given that the South-east Asian countries, Malaysia, Indonesia, Philippines, Singapore and Thailand, reported a mean prevalence of 36.4%. This difference may also be related to education, social and individual perception of symptoms, and the better health-seeking behaviour of the population. Furthermore, of the surveyed populations, in Hong Kong 46% were aged >60 years whereas in India the same age-group comprised only 8.3%; this could be another reason for the higher prevalence of OAB in Hong Kong (64%) than in India (14%). Moreover, among the Indian population the problem is still considered a social taboo and hence many men may not consult their physician, despite the potential implications of the underlying problem. In the present survey a high prevalence of OAB symptoms was more common and constant in the older population, i.e. >60 years old. This estimate agrees with a study on the Swedish population [9] which reported a 70% prevalence in the older population (>65 years).

Previous questionnaire-based studies in different races and cultures gave a lower
prevalence than studies using validated questionnaires [5]. Whether these differences are related to social, cultural, hygienic and economic factors remains unclear. Thus we foresee that in Asian men the reported incidence of 29.9% would even be higher when validated clinical objective studies like a pad-test or urodynamics were used.

Compared with western countries fewer men seek medical intervention in Asia. For instance, Harrison and Memel [10] cited a treatment rate of 12% in western women but in Asian men the treatment-seeking rate was even lower. Although severe bother was reported by 14% of men, only 6% sought treatment. As this was a multinational study including countries with different per capita income, educational levels, health awareness and treatment-seeking behaviour, this could be the probable reason for the treatment-seeking rate of 5.9%, despite the severity. In addition, those reporting severe bother had urge incontinence and those less bothered had frequency and urge symptoms but no incontinence per se.

The family history of voiding disorders and OAB suggests an involvement of genetic factors, but this can be considered only when the subject is living in same environment with a similar behavioural pattern.

Unlike in the west, in Asia people prefer to use the squatting type of toilets and this prompted us to assess the prevalence of OAB in response to the different toilet types. Interestingly, among those reporting OAB there was a higher prevalence in those using the 'sitting' type, although the pathophysiology behind this is unclear. Lapitan and Chye [4] noted a positive correlation with the 'sitting' toilet and prevalence of OAB symptoms in Asian females. A high incidence of OAB in men using sitting toilets might be attributed to the large proportion of respondents from industrialized and developing nations with large urban populations. A previous study in Pakistani women highlighted the high incidence of incontinence in those using sitting toilets [11]. Thus we presume there is a similar situation in their male counterparts. Similar to the type of toilets, urban dwellers had a higher odds ratio for the incidence of OAB than the rural population.

Although OAB is difficult to cure, a significant improvement can be achieved in most patients. Repeated surveys of the same population over time would yield better results for prevalence and incidence. Such questionnaire-based surveys would also isolate the potential risk factors involved, e.g. neurological, constitutional and behavioural. Neurological risk factors (stroke, paraplegia, paralysis agitans, immobility and cognitive impairment) are linked to detrusor hyper-reflexia [12]. Obesity, white race and increasing age were reported as constitutional risk factors [2]. Similarly, behavioural factors, e.g. the consumption of caffeine, alcohol, tobacco, and low daily physical activity, also play a major role in OAB. However, in the Asian population the relationship between these factors and OAB were not assessed and thus identifying these factors might also lower the cost of management and therapy. The outcome of this survey could be used to facilitate better healthcare planning for those with OAB; this study also highlights the need for more research towards effective management.

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REFERENCES


7. de Groat WC. A neurologic basis for the overactive bladder. *Urology* 1997; 51: 36–52


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Abbreviations: OAB, overactive bladder.