Urinary incontinence: an ignored problem in elderly patients

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Urinary incontinence is a common problem among the elderly, especially those admitted to acute care hospitals. A study investigating this problem was conducted in the geriatric wards of the Tuen Mun Hospital, Tuen Mun, from 26 October 1995 to of 9 November 1995. Fifty of 139 (36%) patients had urinary incontinence with a male to female ratio of 1:1.5. Patients with urinary incontinence were found more often to have mobility problems and a higher institutionalisation rate than did continent patients. Dementia and cerebrovascular accident were also found to be associated with this problem. Although it is a common problem, none had been evaluated or treated before. Most of the caregivers thought that urinary incontinence was a normal ageing process and used diapers to treat this problem.

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Introduction

Urinary incontinence (UI) is a common problem among the elderly. Previous studies show the prevalence to be between 12% and 15%[1] but some studies claim it is as high as 30%.[2] In acute care hospitals, the proportion of the elderly with UI is even higher. Approximately 35% of the elderly admitted to acute hospitals are incontinent.[3] Urinary incontinence is not only a problem in hospital but it is also one of the major caring problems in nursing homes. In one study, the prevalence of UI was close to 50% in a nursing home.[4]

Urinary incontinence causes a financial burden on the health care system of the elderly. In the United States, about US$2 billion is spent on the management of UI in nursing homes.[5]

Besides the economic impact of UI on health care costs, this condition affects an individual's life, including social, domestic, physical, occupational, and leisure activities. Eight to 41% of patients report that UI interferes with their social activities.[6] Some incontinent individuals manage their problem by decreasing their social activities to reduce the embarrassment caused by it.

Although UI is a common problem, 50% to 70% of people with this complaint do not seek help because some believe it to be a normal ageing process while others are embarrassed to reveal this problem to health workers. Apart from this, unawareness of the importance of UI and a lack of knowledge of the management of UI by health workers can lead to a missed opportunity to appropriately treat the sufferers.

Most of the previous studies on UI have been performed in western countries. We performed this survey to find out the baseline characteristics of UI patients in our locality and to find out the prevalence of UI in geriatric wards to assist us in developing our policy for dealing with UI. Apart from the above, we wanted to review our practice in the management of UI.

Subjects and methods

The study was carried out at in the Geriatric Unit of the Tuen Mun Hospital, Tuen Mun, from 26 October 1995 to 9 November 1995. Tuen Mun Hospital is one of the district hospitals in Hong Kong and it provides health care to a population of 0.6 million. Approximately 10% of the population is aged 65 years or older.

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Table 1. Baseline characteristics of patients investigated for urinary incontinence

		Women	Men	Total
No. of patients		80	62	142
No. of patients excluded*		2	1	3
Eligible patients		78 (56%)	61 (44%)	139
Age (y)				ns
	mean	82.6	81.1	82.0
	range	64-105	66-92	64-105
			No. of patients (%)	
	60-69	2 (2.6)	1 (1.6)	3 (2.2)
	70-79	23 (29.5)	23 (37.7)	46 (33.1)
	80-89	40 (51.3)	33 (54.1)	73 (52.5)
	90-99	11 (14.1)	4 (6.6)	15 (10.8)
	100-110	2 (2.6)	0 (0.0)	2 (1.4)
Accommodation				ns
	institution	32 (41.0)	19 (31.1)	51 (36.7)
	non-institution	45 (57.7)	41 (67.2)	86 (61.9)
	unknown	1 (1.3)	1 (1.6)	2 (1.4)
Mobility				ns
	independent	47 (60.3)	37 (60.7)	84 (60.4)
	dependent	29 (37.2)	18 (29.5)	47 (33.8)
	unknown	2 (2.6)	6 (9.8)	8 (5.8)

*Three patients were excluded from the study because of incomplete data collection; ns = there was no significant difference in basic characteristics between the women and men studied

The hospital has two geriatric wards with 68 beds offering an acute in-patient service.

Urinary incontinence was defined as the involuntary loss of urine. All patients who were admitted through the Accident and Emergency department to these two geriatric wards during the study period were involved. A questionnaire was attached to the hospital records for each patient and was completed by a trained person (the case doctor or nurse). The epidemiological data of each patient was recorded in the questionnaire; these included the patient's age, sex, type of residence, and past medical history. The mental state of subjects were carefully assessed by the case doctors and occupational therapists. Abbreviated mental test or mini mental state examination were performed to document any impaired mental function. If the duration of memory loss was long and the patient's progress was slow, the diagnosis of dementia was accepted; otherwise, thorough investigations were carried out to ascertain the cause of the deterioration of mental function. These types of patient were classified as having delirium. Mobility problems were also asked about in the questionnaire. Patients were defined as independently mobile if they could walk independently with or without an aid. If they needed supervision, however, or assistance with walking, or were chair-bound, they were included in the group with dependent mobility. Questions concerning the use of diapers before admission were asked. The cause of UI claimed by patients or their caregivers; and whether the incontinence problem had been evaluated or treated by doctors before was asked on the day of admission.

During the study period, the health workers in the unit were discouraged from using diapers routinely unless there was a clear indication for their use. If the patients were given diapers during hospitalisation, the

reason for their use was clearly recorded. In addition, the health workers of our unit were asked to provide urinals or bed pans every two hours to those patients who could not go to the toilet by themselves.

Statistical analysis

The ages of different groups of patients were compared by Student's *t*-test. Chi-square test was used to compare the categorised data including sex, types of residence, different diseases the patients suffered from, and mobility. Those with unknown data were excluded from the analysis.

Results

The study was carried out from 26 October 1995 to 9 November 1995. A total of 142 patients who were admitted through the Accident and Emergency department to our geriatric wards were included in the study. Three patients were excluded from the study because there was incomplete data collection for them. Hence, only 139 patients were included in the study. The baseline characteristics of these patients are shown in Table 1. There were 78 women (56%) and 61 men (44%). The ages ranged from 64 to 105 years; the mean age was 82 years. There was no significant difference between the sexes in terms of age, type of residence, and mobility.

Table 2. Comparison of characteristics of patients with and without urinary incontinence prior to admission

		No UI*	UI	
No. of patients		89 (64%)	50 (36%)	
Age (y)				
	range	66-93	64-105	
	mean	81.34	83.26	
		No. of patients (%)		
	60-69	2 (2.2)	1 (2.0)	
	70-79	31 (34.8)	14 (28.0)	
	80-89	50 (56.2)	24 (48.0)	
	90-99	6 (6.7)	9 (18.0)	
	100-109	0 (0.0)	2 (4.0)	
Accommodation				P<0.001
	institution – private aged home	12 (13.5)	28 (56.0)	
	– subvented aged home	4 (4.5)	6 (12.0)	
	non-institution	73 (82.0)	13 (26.0)	
	unknown	0 (0.0)	2 (4.0)	
Mobility				P<0.001
	independent	78 (87.6)	6 (12.0)	
	dependent	7 (7.9)	40 (80.0)	
	unknown	4 (4.5)	4 (8.0)	
Diagnoses of patients				
	dementia	1	8	P<0.001
	cerebrovascular accident	3	12	P<0.001
	Parkinson's disease	0	2	ns
	heart failure	15	6	ns
	ischaemic heart disease	11	5	ns
	diabetes mellitus	9	12	P<0.05

*UI urinary incontinence; ns = not significant

Table 3. Analysis of patients with urinary incontinence prior to hospital admission

	No. of patients (%)		
	Women	**Men**	**Total**
Duration of UI* before admission			
<1 month	2 (6.7)	2 (10.0)	4 (8.0)
>1 month	14 (46.7)	11 (55.0)	25 (50.0)
unknown	14 (46.7)	7 (35.0)	21 (42.0)
Causes of UI claimed by carers			
normal ageing	3 (10.0)	3 (15.0)	6 (12.0)
ill heath	3 (10.0)	5 (25.0)	8 (16.0)
immobility	7 (23.3)	2 (10.0)	9 (18.0)
unknown	17 (56.7)	10 (50.0)	27 (54.0)
others	0 (0.0)	0 (0.0)	0 (0.0)
UI evaluated or treated by medical doctor before			
yes	0	0	0
no	15	12	27
unknown	15	8	23

*UI urinary incontinence

Prevalence of urinary incontinence

Fifty of the 139 patients (36%) had UI before admission (Table 2) and the number of female incontinent patients was one and a half times the number of male incontinent patients.

Characteristics of incontinent patients

The mean age of all incontinent patients was 83 years 3 months. There was no age difference between patients with and without UI (Table 2). This finding was also seen in the women in subgroup analysis. In the men, however, those with UI were older than those without ($P<0.05$). Patients with UI were more mobility-dependent and more commonly living in institutions, especially in private aged homes than were those without UI; this trend was also seen in subgroup analysis (Table 2, $P<0.001$).

Diseases associated with urinary incontinence

Dementia and cerebrovascular accident were more common in the incontinent group (Table 2). This finding was also found in female incontinent patients in the subgroup analysis. However, only dementia was found to be more common in male incontinence patients but not cerebrovascular accident. Diabetes mellitus was also found to be associated with UI in female patients but not in male patients; when all incontinent patients were analysed, diabetes mellitus was found to be associated with UI. No association was found between UI and Parkinson's disease, heart failure, ischaemic heart disease, or hypertension.

Difference between male and female incontinent patients

There were 30 women and 20 men with UI and the female to male ratio was 1.5:1. There was no difference in the mean age, institutionalisation rate, and the dependency of mobility between male and female incontinent patients. However, more female than male incontinent patients were demented.

Analysis of urinary incontinence before admission

The majority of incontinent patients had had an incontinence problem for more than one month. Most of the caregivers (27/50) did not know the causes of UI and some thought that it was one of the natural processes of ageing (6/50) [Table 3]. Twenty-seven of these 50 patients had never been evaluated or treated by doctors for their urinary problems. The caregivers of the remaining 23 patients did not know whether or not the patients had had their urinary problems evaluated or treated before.

Diaper use

Diaper used on day of admission

Forty-six of 50 patients with UI before admission used

Table 4. Diaper use in patients with and without urinary incontinence

		No. of patients	
Diaper used on day of admission		**Patient with UI* (%)**	**Patient without UI (%)**
		46 (92.0)	5 (5.6)
Reason given:			
	urinary incontinence	13 (28.3)	0 (0.0)
	bowel incontinence	0 (0.0)	0 (0.0)
	double incontinence	32 (69.6)	0 (0.0)
	no incontinence before but afraid of incontinence during transfer	0 (0.0)	5 (0.0)
	unknown	1 (2.2)	0 (0.0)

		No. of patients (%)
Diaper used during hospitalisation		
1) For patients with urinary incontinence before admission		
	No. of incontinent patients wearing diaper on day of admission	46 (96.0)
	No. of incontinent patients wearing diaper during hospitalisation	26 (52.0)
Reason given:		
	patient used diaper before admission	17 (65.4)
	UI detected during hospitalisation	4 (15.3)
	faecal incontinence during hospitalisation	0 (0.0)
	double incontinence during hospitalisation	4 (15.4)
	unknown	1 (3.8)
2) For patients without urinary incontinence before admission		
	Total no. of continent patients	89
	No. of continent patients wearing diaper during hospitalisation	6 (6.7)
Reason given:		
	patient used diaper before admission	2
	UI detected during hospitalisation	1
	faecal incontinence during hospitalisation	1
	double incontinence during hospitalisation	2
	unknown	0

*UI urinary incontinence

a diaper on the day of admission. The reasons for its use included UI and double incontinence. Five patients were wearing a diaper on the day of admission although they were not incontinent; it was present because their caregivers were afraid of incontinence during the transfer to hospital (Table 4).

Diaper used during hospitalisation

Although the health workers of our department had been told not to use a diaper unless there was a clear need, 19 patients had diapers without a clear indication. The reason given was that they had used diapers before admission (17 patients with UI before admission, two without UI before admission). Of those with UI before admission, 46 used a diaper on the day of admission but during hospitalisation, 20 patients stopped using diapers. Of these patients, four were in very poor condition and had a Foley's catheter inserted to monitor their fluid balance. Two patients whose caregivers claimed that they had UI, had mobility problems that affected their ability to go to the toilet. After the improvement of their mobility, no UI was detected, and so diapers were not needed.

Discussion

In this study, UI was found to be a common problem in acute care hospitals. More than 30% of elderly patients admitted to acute care hospitals have this problem. The prevalence rate for UI in acutely ill elderly patients found by us is comparable to that in western countries.

Although the prevalence rate for UI in these patients is high and the problem causes considerable work, this problem had been ignored by both the patients and their carers. This may be due to a lack of knowledge of incontinence care not only in patients but in health workers as well. The other reason for the problem being concealed is the embarrassment felt by patients when they reveal this problem to health workers. In addition, some caregivers and patients think that UI is a natural process of ageing and cannot be cured—so they are reluctant to discuss this problem with their doctors. Sometimes, even though they are willing to disclose the problem to health workers, they may not receive proper management because of little knowledge about incontinence care on the part of the health workers.

Diapers are commonly used to manage this problem. Although the applying of a diaper is simple, there are many complications. Wearing a diaper can affect mobility and cause embarrassment to a patient. If a diaper soaked with urine is not changed on time, it will rapidly cause bed sores. Appropriate voiding programmes such as time voiding, habit voiding, or prompt voiding can be applied to those with poor mental health and mobility problems. These steps can reduce the use of diapers and the embarrassment of patients.

In this study, we only investigated those patients admitted to an acute care hospital. There may be many elderly in the community with this problem but whose health workers are unaware of the problem. Public education on this problem is necessary to increase public awareness.

Urinary incontinence is not a natural process of ageing but a disease that can be cured. Its proper management not only reduces the caring work of caregivers but can improve the patient's quality of life.

Incontinence problems were found to be more common in those elderly living in institutions rather than those living at home. Since incontinence causes much caring work, UI may be one of the main factors causing the breakdown of caregivers that leads to the admission of elderly people to old age homes. Hence, if we can detect the problem earlier and provide proper treatment for sufferers, we may prevent the early institutionalisation of some patients. From an economical point of view, the proper management of UI will decrease health care costs.

Restricted mobility is one of the causes of UI. Although we did not specifically look for the cause of UI, there was a significantly higher proportion of incontinent patients with dependent mobility found in our study. In addition, two patients became continent after their mobility was improved. Therefore, the improvement of mobility may alleviate this problem.

Neurological diseases that affect the cognition and mobility of patients are recognised as causes of UI. Dementia and cerebrovascular accident were found to be more common in incontinent patients than in continent patients. Parkinson's disease typically restricts the mobility of patients and UI is more common in such patients because of this and the side effects of their medication. However, no such association was found in our study. This may be due to the small sample size; only two patients with Parkinson's disease were included in the study. To demonstrate such association, a further study with a larger sample size is required.

In conclusion, UI is a common problem in elderly patients. The problem is ignored by patients, their caregivers, and health workers. Public education is necessary to raise the awareness of the community about this problem. Urinary incontinence is not one of the natural consequences of ageing; it can be cured or alleviated if proper treatment is offered to patients. This problem must be managed by a multidisciplinary team with specialised knowledge. The team should involve doctors, nurses, occupational therapists, physiotherapists, and social workers so that different aspects of patients can be assessed and an optimum management plan devised out after the complete assessments by the different team members have been performed.

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