

USE OF HEALTH CARE SERVICES IN THE ELDERLY CORRELATES WITH THE FREQUENCY OF NIGHTTIME VOIDING: RESULTS OF A 6-YEAR PROSPECTIVE COHORT STUDY IN JAPAN

Hypothesis / aims of study

Nocturia is a common problem that increases with age. It is often the result of an overproduction of urine at night (nocturnal polyuria), but may also be associated with several pathophysiological conditions, such as cardiovascular disease, diabetes mellitus, sleep apnea syndrome, renal dysfunction, lower urinary tract dysfunction and sleep disorders. In a previous study, nocturia was an independent risk factor for fracture or mortality¹. In recent years, World Health Organization pointed out the importance of healthy life expectancy². For the elderly, it is important to shorten duration being dependent or bed ridden. This study aimed to evaluate the association between nighttime frequency and use of health care services in a community-based elderly population.

Study design, materials and methods

We conducted a Comprehensive Geriatric Assessment of all residents aged ≥ 70 years in 2003 in an urban district of north Japan. The population-based cross-sectional survey was conducted using an extensive health interview for each participant. Use of health care services was investigated using data from the national health insurance system over 6 years. Hazard ratios (HRs) were estimated from multivariate Cox proportional hazard models.

Results

Seven hundred and eighty-eight subjects were included in the study (28.9% participation rate; 429 females, 359 males; mean age 76.0 years; range: 70-97 years). After multivariable adjustment, the HRs (95% confidence intervals) for use of health care services were 1.25 (0.92-1.72), 1.29 (0.87-1.89) and 1.58 (0.97-2.58) for people who voided 2, 3 and ≥ 4 times/night compared with ≤ 1 per night (p-value for trend=0.04; Table 1). The number of nighttime voiding episodes was associated with a significantly increased use of health care services.

Hazard ratios of care according to nocturia.

	Nighttime frequency				<i>p</i> for trend
	≤ 1 (n=417)	2 (n=215)	3 (n=99)	≥ 4 (n=41)	
Person-months of follow up	30276.6	15528.2	7164.3	2957.1	-
No. of cases	100	70	41	21	-
Hazard Ratio (95% Confidence Interval)					
Model 1*	1.00	1.37(1.01-1.86)	1.74(1.21-2.51)	2.16(1.35-3.46)	<0.0001
Model 2**	1.00	1.23(0.90-1.68)	1.42(0.98-2.07)	1.50(0.93-2.44)	0.03
Model 3***	1.00	1.25(0.92-1.72)	1.29(0.87-1.89)	1.58(0.97-2.58)	0.04

*Crude model.

**Adjusted for age, sex, body mass index.

***Adjusted for model 2 + diabetes, smoking status, history of coronary heart disease renal diseases and stroke, use of tranquilizers, hypnotics, and diuretics.

Interpretation of results

In this study there is a significantly increased use of health care service associated with the nighttime frequency of urination, even after adjustment for several factors. Nighttime frequency has tendency to correlate nocturnal urine volume. Thus, It is possible that some underlying factors may be undiagnosed and could contribute to increased healthcare needs in nocturia. It is important to investigate the causes of nocturia in people reporting frequent nighttime voiding. This would enable effective treatment of the condition, and in turn, might lead to improve patients' overall quality of life, and a reduction in the significant medical costs associated with the condition.

Concluding message

We conclude that there is a significantly increased use of health care services associated with the nighttime frequency of urination, even after adjustment for several factors.

References

1. J Urol. 2010 Oct; 184(4): 1413-8
2. Epidemiology and Burden of Disease World Health Organization Geneva 2003

Disclosures

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