44

Soda T[1], Masui K[2], Okuno H[2], Terai A[1], Ogawa O[3], Yoshimura K[3]
1. *Department of Urology, Kurashiki Central Hospital,* ***2.*** *Department of Urology, Kyoto Medical Center,* ***3.*** *Department of Urology, Kyoto University Graduate School of Medicine*

PREDICTORS OF THE EFFICACY OF NON-DRUG LIFESTYLE MODIFICATIONS FOR THE MANAGEMENT OF NOCTURIA

Hypothesis / aims of study

Nocturia has a great impact on people's quality of life and affects numerous aspects of health. Nocturnal / global polyuria, reduced nocturnal bladder capacity and sleep disturbance are the possible causes of nocturia. Medical therapy such as anticholinergic agents, desmopressin and time release diuretics is often considered as first line treatment (1), however, medication has a potential risk of adverse effects and would also cause problems with national medical expenditures as the number of patients increase due to the aging of the population. Lifestyle modifications such as fluid restriction, sleep enhancement etc are expected to be helpful, but effectiveness of this strategy has not been established. The aim of this study was to test the efficacy of non-drug lifestyle measures as the first step to treat nocturia. We also sought to find predictive factors of the efficacy of the intervention.

Study design, materials and methods

We enrolled patients who visited our outpatient clinic with a chief complaint of nocturia from October 2005 to January 2009. After the initial screening with history taking / urinalysis / physical examination and frequency volume chart (FVC), the patients were encouraged to modify their lifestyle in order to improve nocturia. Patients who strongly sought medical treatment were excluded. Lifestyle modifications consisted of four measures - restriction of fluid intake, avoiding too long bed time hours, moderate daily exercise and keeping warm in bed. The International Prostate Symptom Score (IPSS), MOS Short-Form 36-Item Health Survey (SF-36), Pittsburgh Sleep Quality Index (PSQI) and FVC before and 4 weeks after the intervention were used to assess the efficacy of the therapy. Two or more times reduction in the number of nocturia was considered highly effective. Non-responders received further medical therapy.

Results

Data from 50 patients (42 men and 8 women) were evaluable. The mean age was 74.5±5.5 years (range 59-85). Both the mean number of nocturia, determined from IPSS question 7, and IPSS-QOL were significantly decreased after the intervention (Table 1). In 28 of 50 patients (56%), 1 or more times decrease in the number of nocturia was achieved. In 27 (54%), IPSS-QOL score improved by 1 or more points. FVC was available in 43 patients. Abstracts from FVC before and after the intervention showed that 24hr-frequency, nocturnal urine volume and number of nocturia were significantly reduced after the intervention (Table 1).
Among the pre-treatment parameters tested, 24hr-urine volume and noturnal urine volume significantly correlated with the degree of improvement (Figure 1).
Moreover, this treatment was significantly more "highly effective" in patients presenting with polyuria (greater than 1800ml/24hr) than in those without polyuria (Table 2).

Table 1: Results of IPSS and FVC before and after the intervention.

	before	after	p value*
IPSS-7	3.71	2.98	<0.0001
IPSS-QOL	4.53	3.78	<0.0001
24hr-frequency	11.5	10.7	0.0148
24hr-vol (ml)	1862	1744	0.0513
noct. vol (ml)	929	771	0.0008
day vol (ml)	933	970	0.9395
# of nocturia	3.57	2.68	<0.0001

* Wilcoxon signed-rank test

Figure 1: Correlations between pre-treatment 24hr-urine volume (A) or noturnal urine volume (B) and number of decrease in the frequency of nocturia.

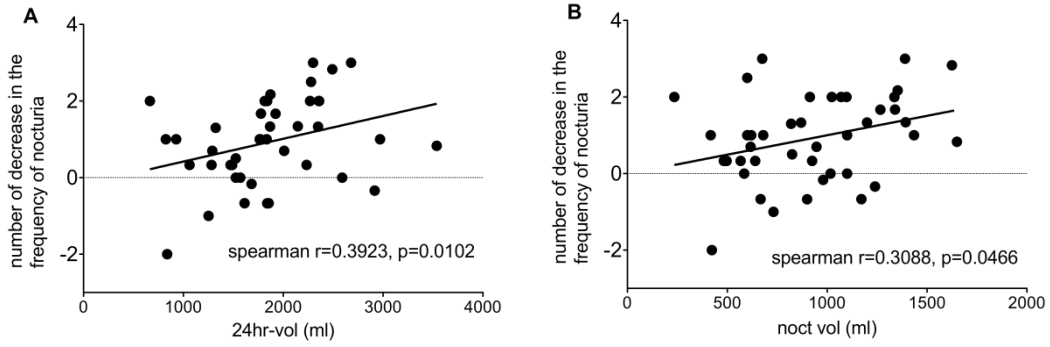

Table 2: Efficacy of the intervention, by pre-treatment 24hr-urine volume.

	highly effective	not highly effective	
24hr-urine vol <1800ml	1	18	19
24hr-urine vol >1800ml	10	14	24
	11	32	43

Chi-square test: p=0.0066

Interpretation of results

Non-drug lifestyle measures were effective in reducing the number of nocturia and improving patients' QoL. Nocturnal urine volume decreased after the intervention. Patients with global / nocturnal polyuria show better response to the treatment.

Concluding message

Non-drug lifestyle measures are safe, effective and less expensive. This strategy could be the first line treatment of choice for any patients complaining of nocturia. Especially, the patients with global / nocturnal polyuria are good canditates for this program.

References

1. BMJ 2004;328:1063-6

Specify source of funding or grant	**none**
Is this a clinical trial?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**No**
This study did not require eithics committee approval because	**part of normal clinical practice**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**