

URGE PERCEPTION INDEX AS A PREDICTOR VALUE FOR INCIDENCE OF OVERACTIVE BLADDER SYMPTOMS IN A LONGITUDINAL STUDY

Hypothesis / aims of study

In order to enhance quantitatively identifying severity of OAB in analysis of the bladder diary including urinary perception grades, we developed a quotient of voided volume divided by urinary perception grade, which we refer to as urge perception index (UPI). We have revealed that UPI could be useful in distinguishing OAB and non-OAB in quantitative analysis of bladder diary with patient's self-reported urinary perception grades and the cutoff value of 108 for the UPI revealed diagnostic accuracy of OAB might be suitable (1). However, the long-term relations between the incidences OAB symptoms and the lower UPI value remain unclear. The aim of this study was to compare longitudinally between the lower UPI value and OAB symptoms in community-dwelling women without OAB examined during a mass-screening program in Japan, in order to enhance the usefulness of UPI as a predictor for incidence of OAB.

Study design, materials and methods

Out of 163 women (mean 61 years of age, range 40 to 84) without OAB at the beginning, who have taken medical screening following 5 years from 2005 to 2010, were asked to complete 3-day bladder diary with a grade of urinary perception and to onset of OAB symptoms on community-based study. The grade of urinary perception at each void was defined on scores 1-5 as follows: 1 = Sensation of bladder filling without desire to void, 2 = Desire to void, 3 = Strong desire to void, 4 = Urgency without urge urinary incontinence (UUI), and 5 = Urge incontinence episode. Urge perception index (UPI) was defined as a quotient of voided volume/urinary perception grade at each void. Plots of the estimated proportion of subjects with appearing OAB symptoms were constructed by the Kaplan-Meier method and were compared with use of the log-rank test.

Results

Of the 163 women without OAB at the beginning in 2005, 18 (11%) had had exhibited OAB symptoms for 5 years by 2010. The parameters of those bladder diaries at the beginning were shown in table 1. There was nothing a significant difference except UPI between the two groups. Additionally, of the 163 women 57 (35%) had the lower UPI (<108) and 106 (65%) had the upper UPI (>108) (83.7 vs. 155.0, $p < 0.0001$). Twelve out of 57 (21.0%) women with lower UPI in 2005 had exhibited OAB symptoms for 5 years. In contrast, six out of 106 (5.7%) women with upper UPI in 2005 had exhibited OAB symptoms for 5 years. A significant difference between the two groups was seen the whole period of follow up ($p = 0.0026$) (**Figure 1**).

Interpretation of results

In the present study, we revealed urge perception index (UPI), which have proposed as a novel quantitative index thereby a quotient of voided volume divided by urinary perception grade, is useful as a predictor for incidence of OAB symptoms as well as a identifying severity of OAB. The women with lower UPI who had not OAB symptoms have high risk for incidence of OAB symptoms for five years. Additionally, only the UPI was a significant item in the parameters of bladder diary. Thus, the UPI easily predicted the incidence of OAB symptoms moreover the severity of OAB in the women. Bladder diary is considered to be an essential tool for diagnosis of OAB, and when we interpret the bladder diary with simultaneous analysis of both voided volume divided by urinary perception grade in each void, UPI could be a useful quantitative diagnostic tool of OAB.

Concluding message

Our results demonstrated that UPI could be useful as a predictor for incidence of OAB symptoms in the near future as well as distinguishing OAB and non-OAB at the beginning in quantitative analysis of bladder diary with patient's self-reported urinary perception grades.

Table 1 The parameters of bladder diary in non-OAB women at the beginning.

	Non-OAB (n=145)	OAB (n=18)	p-value
Age (yrs.)	61.2±8.7	63.7±7.8	0.24
24hr urine volume (ml)	1709.3±568.6	1760.1±711.7	0.86
Frequency	6.6±1.4	7.1±2.6	0.58
Maximum voided volume (ml)	433.3±124.6	381.4±137.8	0.09
Average voided volume (ml)	260.8±75.9	261.2±95.9	0.81
Urge perception index	132.6±44.6	110.1±54.0	0.009

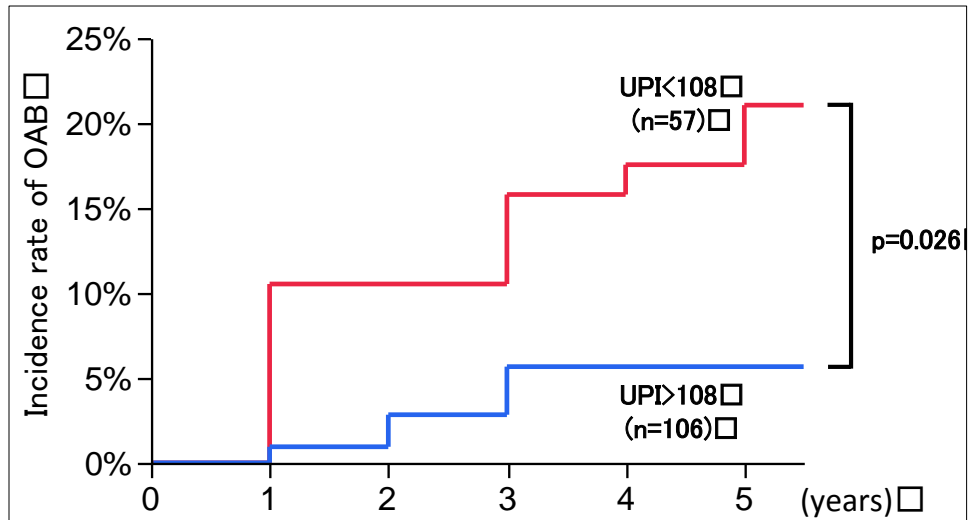


Figure 1 Time course of the incidence rate of OAB symptoms in the women without OAB at the beginning

References

1. Eur Urol Suppl, 10(2): 288, 2011

Disclosures

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