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IMPACT OF CONVENIENCE VOID IN BLADDER DIARY WHICH INVOLVES SELF-REPORTED URINARY PERCEPTION TO ASSESS BLADDER SENSITIVITY

Hypothesis / aims of study

Self-reported evaluation of bladder sensation during daily life can be evaluated by scoring the grade of perception of fullness on bladder diary, demonstrating that frequency-volume charts with evaluation of perception of fullness might provide an initial non-invasive tool to study bladder sensation (1). Moreover, a relatively new term, convenience void (CV), which describes voiding episodes without a desire to void for social reasons, has been advocated to be considered for inclusion in the bladder diary used in research (2). At the time of CV, the bladder will be emptied for social reasons, such as before joining a meeting, before going out on a long journey, or before retiring to bed at night. We considered that for men or women with OAB, the frequency of CV might be an indicator of how they controlled their voiding behavior in order to avoid urgency.

The aim of this study was to assess CV by the bladder diary with bladder perception grades and to evaluate the relationship between CV and OAB in community-dwelling women during a mass-screening program in Japan.

Study design, materials and methods

A total of 310 women (mean 58 years old, range 40 to 84) were asked to complete 3-day bladder diary with grade of bladder perception on community-based study in Japan. The grade of perception was defined by scores from 0 to 5 as follows; 0=No bladder sensation, 1=Sensation of bladder filling without desire to void (voiding can easily be delayed for more than 60 min), 2=Desire to void (voiding can easily be delayed for more than 30 min), 3=Strong desire to void (voiding cannot be delayed for more than 15 min), 4=Urgent desire to void (voiding cannot be delayed for more than 5 min) and 5=Urge incontinence episode with urgent desire to void. In this study, two definitions of CV were used, CV in the narrow sense and the broad sense. CV in the narrow sense was voids at perception grade 0, while CV in the broad sense was voids at perception grade 0 and 1. Additionally, the incidence of CV was calculated by the frequency of CV in the narrow sense or the broad sense / 24hr urinary frequencies per day in each women. The subjects with OAB were abstracted from the medical interview at the time of the mass-screening program by a definition of OAB of eight or more voids per day and one or more urgency episodes per week, as described in a previous epidemiological study in Japan (3).

Results

Of the 310 women, 48 (15.5%) had OAB symptoms, including 37 (11.9%) without urge incontinence (OAB-Dry), and 11 (3.5%) with urge incontinence (OAB-Wet) The other 262 women were classified as the Normal group. In the analysis of bladder perception grades in the Normal group, 111 (35.8%) women had voids at Grades 4 or 5 that indicated urgent desire (Normal with stronger perception group), while 151 (48.7%) did not (Normal perception group). The mean age of the OAB-Wet group was significantly ($p<0.01$) higher than those in any other group. There were no significant differences in the incidence of CVs in the narrow sense among the four groups, while, the incidences of CV in the broad sense in the Normal with urgency group was significantly ($p<0.01$) less than that in the Normal without urgency group.

The relationships between the CV and the mean voided volume from the 3-day bladder diaries were also shown in the Table 1. In the analysis of each CV, there were no statistical differences in the mean voided volume of CV in the narrow sense among the four groups. While, in the analysis of CV in the broad sense the mean voided volumes in the Normal without stronger perception group was significantly larger than those of the Normal with stronger perception group ($p=0.0002$), in the OAB-Dry group ($p=0.02$) and in the OAB-Wet group ($p=0.0001$). On the other hand, there was no significant difference between the Normal with stronger perception group and in the OAB-Dry group. The voided volumes of CV in the broad sense in the OAB-Wet group were significantly smaller than those in the Normal without stronger perception group ($p=0.0001$), in the Normal with stronger perception group ($p=0.03$) and in the OAB-Dry group ($p=0.03$).

Table 1 Distributions of convenience voids in comparison among the groups

	Normal perception	Normal with stronger perception	OAB-Dry	OAB-Wet
Number (%)	151 (48.7)	111 (35.8)	37 (11.9)	11 (3.6)
Mean age (yrs)	58.0 ± 9.6	58.4 ± 9.2	57.2 ± 9.7	67.9 ± 10.8 **, ##, ♭♭
Incidence of CV (%)				
Narrow sense	7.3 ± 14.5	7.4 ± 12.7	6.6 ± 9.1	6.3 ± 8.1
Broad sense	27.3 ± 29.9	17.6 ± 17.7 **	17.7 ± 17.2	14.7 ± 13.7
Voided volume at CV (ml)				
Narrow sense	152.0 ± 100.8	133.6 ± 76.8	123.7 ± 76.3	100.0 ± 57.3
Broad sense	182.7 ± 106.9	155.5 ± 88.8 **	157.7 ± 93.7 *	106.7 ± 63.8 **, #, ♭

＊: $p< 0.05$, compared with Normal perception, ＊＊: $p< 0.01$, compared with Normal perception, #: $p<0.05$, compared with Normal with stronger perception, ##: $p<0.01$, compared with Normal with stronger perception, ♭♭: $p< 0.01$, compared with OAB-Dry, ♭: $p< 0.05$, compared with OAB-Dry.

Interpretation of results

Our results demonstrated that the incidence of CV increased according to the strength of bladder perception, indicating women with OAB or stronger perception went to toilet earlier than normal women.

Concluding message

The incidence and voided volumes of CV were strongly related to severity of OAB symptoms as well as strength of bladder perception. The CV potentially becomes a clinical tool to relate with the storage dysfunction or bladder sensitivity. Further study of self-reported bladder perception grade in a bladder diary is warranted to assess the role of CV in relation to the etiology of bladder hypersensitivity or OAB.

References

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Is this a clinical trial?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**Yes**
Specify Name of Ethics Committee	**The ethics committee of Meiji University of Integrative Medicine**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**