

ORIGINAL

Time-series survey of prevalence and severity in urinary incontinence among elderly Japanese women

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ABSTRACT

Objectives: We conducted time-series surveys of urinary incontinence (UI) with the same elderly women once a year for 3 times, from 2010 to 2012, with a self-administrated questionnaire including the Japanese version of the International Consultation on Incontinence Questionnaire-Short Form (ICIQ-SF).

Methods: We randomly selected 1,600 women, aged between 65 and 74 years, from the 2010 Sapporo City resident registration, and 803 women in October, 2010, 746 women in October, 2011, and 718 women in October, 2012 responded to our study. UI was defined as frequent UI when it occurred at least once a week or less often, and, namely, more than or equal to 1 point in the score of ICIQ-SF.

Results: The prevalence of UI was 30.3%, 37.1%, and 42.2%, in 2010, 2011, and 2012, respectively, and the increasing trend of the prevalence was significantly noted ($p < 0.001$). The severities of UI shown by the ICIQ-SF scores were 1.70, 2.03, and 2.23 in 2010, 2011, and 2012, respectively, and the score significantly increased between 2010 and 2012 ($p = 0.003$).

Conclusion: Increasing trends on the prevalence and severity of UI were shown, and aging may cause these trends.

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Key words: Elderly women, Urinary incontinence, Prevalence, Severity

Introduction

Urinary incontinence (UI) is one of the most common health conditions in women, affecting personal quality of life (QOL). The estimated prevalence of UI varies from 10% to 60% depending on the population studied [1, 2]. Although cross-sectional epidemiological studies have estimated the prevalence of UI in various populations, limited data are available quantifying change of UI regarding remission or progression. Describing change of UI can aid its prevention and treatment [3, 4].

The International Consultation on Incontinence Questionnaire-Short Form (ICIQ-SF) was developed in order to be utilized in epidemiological research, as well as routine clinical practice [5], and has been increasingly used [6-9]. The Japanese version of ICIQ-SF was validated by Gotoh et al. [10, 11], and has been utilized in Japan [12, 13]. ICIQ-SF consists of 4 categories: frequency of leakage (range; 0-5 point), amount of leakage (range; 0-6 point), interference with everyday life (range; 0-10 point), and

perceived cause of leakage. Scores for the first 3 questions were summed up to obtain the total score (range; 0-21), and a higher total score of ICIQ-SF indicates more severity.

To grasp the change of UI, we conducted surveys for UI in the same elderly women once a year for 3 times, from 2010 to 2012, with a self-administrated questionnaire including the Japanese version of the ICIQ-SF.

Methods

We obtained the approval from the Ethical Committee of Sapporo Medical University in 2010. To conduct the time-series survey, 1,600 women aged between 65 and 74 years, corresponding to 1.4% of women with the ages of citizens in Sapporo City, were randomly selected from the resident registration [14]. In the postal survey, 803 women returned a completed self-administrated questionnaire with a written informed consent in October, 2010 (response rate, 50.2%). In addition, we obtained a completed second self-administrated questionnaire from 746 women in October,

2011 (response rate of the second survey among the 803 women, 92.9%), and we obtained a completed third self-administrated questionnaire from 718 women in October, 2012 (response rate of the third survey among the 803 women, 89.4%). The existence of UI was defined as frequency of leakage at least once a week or less often, and, namely, more than or equal to 1 point in the score of ICIQ-SF.

The Mantel-Haenszel test was used for changes in the prevalence of UI. Analysis of variance with the post-hoc Scheffe test was used for change of severity shown by the ICIQ-SF scores among elderly Japanese women. PASW® Statistics18 (SPSS) was utilized for analysis, and the statistical significance was set up at a 5% level.

Results

As shown in Fig. 1, the prevalence of UI was 30.3%, 37.1%, and 42.2%, in 2010, 2011, and 2012, respectively, and the increasing trend of the prevalence was significantly noted ($p < 0.001$). As shown in Fig. 2, change of the score of ICIQ-SF among women were 1.70, 2.03, and 2.23 in 2010, 2011, and 2012, respectively, and the score significantly increased between 2010 and 2012 ($p=0.003$).

Discussion

Increasing trends on the prevalence and severity of UI were shown from the time-series surveys of UI with the same elderly women once a year for 3 times. The most plausible reason for increasing trends on the prevalence and severity of UI may be aging of the study subjects. Actually, the average ages of the study subjects were 69.8 ± 2.6 years in 2010, 70.8 ± 2.6 in 2011, 71.8 ± 2.6 in 2012 ($p < 0.001$). Several cross-sectional studies have also indicated that aging is a risk factor for UI [15, 16]. Aging has been shown to be associated with changes in the bladder and pelvic structures [2], physiological and structural changes of the urinary tract [16], and medical conditions such as diabetes [2] and hemorrhoids [17]. Hemorrhoids have been shown to increase with age [17], and were also indicated as a risk factor of UI in our previous article [14]. However, increasing trends on the prevalence and severity were shown in very short period such as 2 years. Accordingly, change in willingness to report UI for health profession may be another reason for increasing trends on the prevalence and severity of UI.

Several limitations of our study should be kept in mind when interpreting our findings, because all of the data were ascertained by self-report. The potential for an information bias would be induced by self-reported

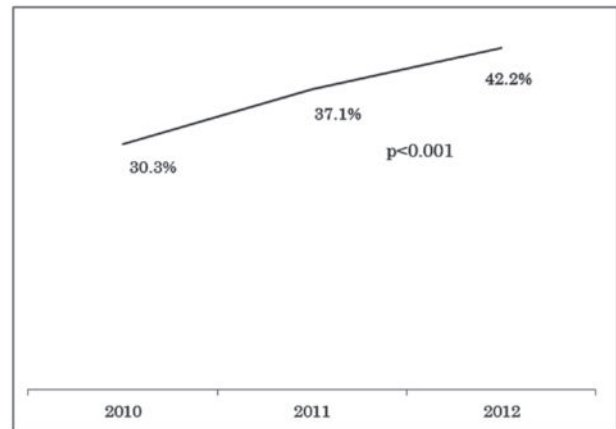


Fig. 1. Change of prevalence in urinary incontinence among elderly Japanese women analyzed by the Mantel-Haenszel test.

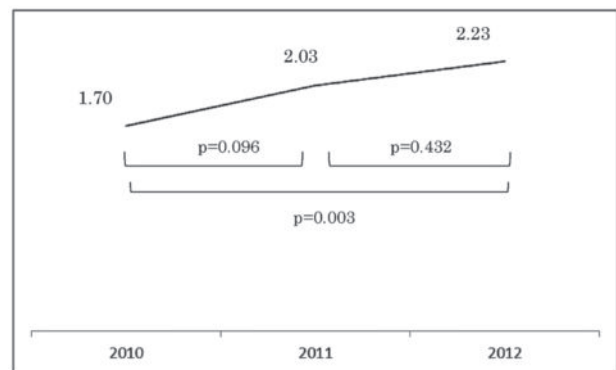


Fig. 2. Change of the ICIQ-SF score among elderly Japanese women evaluated by analysis of variance with the post-hoc Scheffe test.

information. However, self-report may best represent UI from women in a study with a reasonable sample size, as stated by Thom et al. [18]. Furthermore, 997 (49.8%) of 1,600 randomly selected women did not respond to our request to participate in the study, and 57 subjects in 2011 and 28 subjects in 2012 had dropped out from the survey. The potential for selection bias may be induced by an imperfect response rate. However, to our knowledge, our results were obtained from the first time-series survey for UI among randomly selected elderly women from the resident registration in Japan.

In conclusion, increasing trends on the prevalence and severity, which may be caused by aging, were shown in the present study. Thus research on the prevention of UI in older women may be particularly important.

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日本の高齢女性における尿失禁の有病率と重症度に関する時系列調査

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和文要旨

目的

2010年から2012年の3年間にわたり、同一の高齢女性に対して、International Consultation on Incontinence Questionnaire-Short Form (ICIQ-SF)を含む自記式質問紙を用いた郵送法調査を実施した。

方法

札幌市の住民基本台帳より前期高齢者(65歳以上74歳以下)の女性1600人を無作為抽出した。そのうち、2010年10月には803人、2011年10月には746人、2012年10月には718人から回答があった。尿失禁の定義は、「少なくとも週に1回あるいはそれ以下の尿失禁、すなわちICIQ-SFの得点が1点以上」とした。

結果

2010年の尿失禁の有病率は30.3%、2011年は37.1%、2012年は42.2%であり、加齢に伴う有病率の増加が認められた($p < 0.001$)。ICIQ-SFの得点は2010年は1.70、2011年は2.03、2012年は2.23であり、2010年と2012年の得点に有意差が認められた($p = 0.003$)。

結論

尿失禁の有病率と重症度に増加の傾向が認められた。これらの傾向には加齢が関連している可能性がある。

キーワード

高齢女性, 尿失禁, 有病率, 重症度