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Subjective urinary urgency in middle age women: A population-based study

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ABSTRACT

Aims: There are few population-based studies evaluating the epidemiology of overactive bladder syndrome (OAB) in women, especially in the climacteric stage where there is a decrease in estrogen production. This study aimed to assess the prevalence of OAB and associated factors in climacteric Brazilian women.

Methods: A descriptive, exploratory, cross-sectional study was conducted between September 2012 and June 2013 with 749 women (a population-based household survey). The dependent variable was OAB, defined as the presence of urinary urgency, with or without urinary incontinence, and when there was no concomitant stress urinary incontinence. The independent variables were sociodemographic data, health related habits and problems, self-perception of health, and gynecological background. Statistical analysis was carried out by Chi-square test and Poisson regression using the backward selection criteria.

Results: Mean age was 52.5 (±4.4) years. With regard to menopausal status, 16% were premenopausal, 16% perimenopausal and 68% postmenopausal. The prevalence of OAB was 7.8%. The vast majority of women had only urinary urgency. Only two women who responded to the interview reported urge incontinence. In the final statistical model, vaginal dryness (PR 1.75; 95% CI 1.13–2.69; $p = 0.012$) and bilateral oophorectomy (PR 2.21; 95% CI 1.11–4.40; $p = 0.025$) were associated with a greater prevalence of OAB.

Conclusions: Health professionals should adopt a proactive behavior in surgically menopausal women and those with a history of genital atrophy to identify and treat OAB, thus contributing to an improved quality of life and healthier aging.

1. Introduction

Overactive bladder syndrome (OAB) is characterized by the presence of urinary urgency with or without urinary incontinence. OAB is usually accompanied by urinary frequency and nocturia in the absence of metabolic, infectious, or local factors [1]. Increased urinary frequency is the most frequently reported symptom of OAB (85%), followed by urinary urgency (54%) and urge incontinence (36%) [2]. Diagnosis of OAB is essentially clinical and can be performed through a structured questionnaire. The prevalence of OAB varies according to the population studied; the greater the age, the higher the prevalence of OAB. Epidemiological studies in North America have shown a prevalence of 16.9% for OAB, which increases to 30% after 65 years of age [3]. However, European studies have reported a prevalence of OAB of 16.6% in women aged over 40 years [2]. A Brazilian population-based study demonstrated a prevalence of 13% of OAB in women older than 50 years [4].

In addition to aging, other factors, such as ethnicity and menopausal status, are associated with the prevalence of OAB. During the climacteric stage of woman's life, a transition from the reproductive to the non-reproductive period occurs because of decreased sex hormone production in the ovaries [5]. Climacteric-stage estrogen deficiency causes atrophy of the genital and urinary tracts and may be related to the onset of symptoms, such as urinary frequency, urinary urgency, nocturia, incontinence, and recurrent urinary tract infection [6–8]. However, the use of systemic estrogens postmenopausally has produced varying results, except for vaginal-use systemic estrogens, which were shown to improve symptoms in OAB patients [9,10]. There are few population-based studies evaluating the epidemiology of OAB in women, especially

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in the climacteric stage where there is a decrease in estrogen production, with an effect on the prevalence of OAB. Therefore, this study aimed to assess the prevalence of OAB and associated factors in climacteric Brazilian women.

2. Materials and methods

An exploratory, descriptive, cross-sectional study was conducted between September 2012 and June 2013 to evaluate the prevalence of OAB and associated conditions in climacteric women. Inclusion criteria were native Brazilian women, aged 45–60 years, and residing in the metropolitan region of Campinas. Women who were unable to complete an interview for any reason, such as illness and incompatibility of schedules, were excluded.

According to the Brazilian Institute of Geography and Statistics, in 2010, the population of the metropolitan region of Campinas was 2,798,477, including 1,423,748 women. There were 257,434 women in the age group between 45 and 60 years [11]. To calculate the sample size of the study, the prevalence of general menopausal symptoms in women aged 45–60 years in the city of Campinas (symptom reference: hot flashes) was assumed to be 70% [12]. A maximum difference between the calculated sample size and the actual sample size of 3.5%, a type I error (alpha) of 5%, and a refusal rate of 20% determined the sample size of 820 [13]. The Campinas Metropolitan Region is composed of 19 municipalities. A list containing numbered and clearly defined census tracts was provided by the Brazilian Institute of Geography and Statistics. Using simple random sampling, 92 tracts were selected. For the selection, rural, semi-rural, and industrial sectors were excluded. Urban census tracts containing at least 10 women aged 45–60 years were listed. The sectors in which there were at least 10 women in this age group were grouped with neighboring sectors. The 92 sectors were randomly divided into two blocks by sector, and the number of women aged 45–60 years was determined. Ten women from each sector were randomly selected for an interview. Trained research female assistants, guided by maps, drove to the homes of the selected women and invited them to participate in the study, at which point a face-to-face interview was held or a phone interview was scheduled for a later date. The interview was doorstep. A total of 820 women were invited to participate in the study, but 71 refused, resulting in a final sample size of 749. All the participants provided written informed consent prior to the interview. The study was approved by the ethics committee of the Department of Obstetrics and Gynecology of the Faculty of Medical Sciences, State University of Campinas (protocol number: 030/2011).

The dependent variable was OAB, which was considered as present when the participant answered that she had urinary urgency ("urge to urinate and have to run to the bathroom"), with or without urinary incontinence, and when there was no stress urinary incontinence, according to International Continence Society (ICS) guideline recommendation (1). Stress urinary incontinence (SUI) complain of urine leakage that occurs in situations of increased abdominal pressure, e.g. sneezing, coughing and physical exercise; urge incontinence (UUI) abrupt urine leakage accompanied by a strong need to void (1).

International Consultation on Incontinence Questionnaire (ICIQ) short form (SF) and overactive bladder (OAB) form were applied for diagnose. These instruments are recommended by the International Continence Society. Both of these questionnaires are validated in Portuguese [14a,b].

The questionnaire included four sections: sociodemographic information, health habits, health problems, and self-reported health status. This questionnaire was based on an existing Brazilian questionnaire (Economic Classification Criteria of Brazil) [15]. Independent variables were as follows: age (years); schooling (years of attendance at educational institutions); marital status (with or without partner); ethnicity (white/nonwhite); paid work (yes/no); monthly household income (in Dollar); other sources of income (yes/no); socioeconomic status (A/B, C, D/E); smoking (current smoker, ex-smoker, or nonsmoker); alcohol use (1 or more drinks per week, less than 1 drink per week); physical exercise ≥two times per week (yes/no); height (meters); weight (kg); body mass index (<20, 20–24.9, 25–29.9, >30); waist circumference (cm); hypertension (yes/no); diabetes mellitus (yes/no); dyslipidemia (yes/no); myocardial infarction (yes/no); stroke (yes/no); deep venous thrombosis or pulmonary embolus (yes/no); osteoporosis or osteopenia (yes/no); osteoarticular problems (yes/no); asthma or bronchitis (yes/no); tuberculosis (yes/no); depression, anxiety, or other psychiatric disorders (yes/no); cancer (yes/no); number of morbidities (≤1, ≥2); number of pregnancies (0, 1, 2, ≥3); number of deliveries (0, 1, 2, ≥3); number of cesarean deliveries (0, 1, 2, ≥3); number of abortions (0, 1, ≥2); number of live-born children (0, 1, 2, ≥3); number of sexual partners over a lifetime (1, ≥2); sexual activity in the previous month (yes/no); prior hysterectomy (yes/no); bilateral oophorectomy (yes/no); anterior colporrhaphy (yes/no); posterior colporrhaphy (yes/no); vaginal dryness (yes/no); menopausal status (premenopausal if regular menstrual cycles, perimenopausal if irregular menstrual cycles or amenorrhea for less than 1 year, postmenopausal if amenorrhea for more than 1 year); menopausal treatment (any treatment prescribe for climacteric symptoms that included hormonal therapy, antidepressant medications, soybean products or vaginal cream. It was categorized on currently/previously/never did); hormone treatment for menopausal symptoms (currently/previously/never did); antidepressant medications for menopausal symptoms (currently/previously/never did); soybean products for menopausal symptoms (currently/previously/never did); vaginal cream treatment for menopausal symptoms (currently/previously/never did); physical exercise (currently/previously/never did) and self-rated health (poor/very poor, fair, good/excellent).

2.1. Statistical analysis

The frequency distribution of the characteristics of the women was analyzed. Bivariate analysis using the chi-square test was carried out to test the association between the dependent variable (OAB) and the independent variables. A multiple Poisson regression model was created to assess which variables were independently associated with a higher prevalence of OAB. Prevalence ratios (PRs) and 95% confidence intervals (95% CIs) were calculated by backward selection of significant variables. The level of statistical significance was set at 5% and the sampling clusters (census tracts) were considered in the bivariate and multivariate analyses. All analyses were performed using IBM SPSS version 20 and Stata version 7.

3. Results

The 749 women who completed an interview were included in the analysis. The mean (SD) age was 52.5 ± 4.4 years. With regard to menopausal status, 16% were premenopausal, 16% were perimenopausal, and 68% were postmenopausal. The mean age of menopause was 46.5 ± 5.8 years. Of the 749 women, 59 (7.8%) answered that they had urinary urgency without stress incontinence and were classified as having OAB. The prevalence of urinary incontinence was 23.7%: 6.4% stress urinary incontinence, 7.8% OAB and 9.5% mixed urinary incontinence. The women had informed nocturia in 30.6%. In bivariate analysis, there were no differences in the main sociodemographic characteristics between women with and without OAB (Table 1). With regard to clinical and behav-