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Analysis of overactive bladder and urinary incontinence in working women aged between 25 and 64 years. EPICC study☆

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A B S T R A C T

Introduction: Urinary symptoms Overactive Bladder (OAB) and Urinary Incontinence (UI) result in an important personal and economic impact. This work concentrates on the detailed analysis of OAB and UI (derived symptoms and tendencies in medical consultation and resource consumption), in a sample of working women aged 25-64.

Material and methods: Study within the framework of the EPICC study of the Spanish Association of Urology (epidemiologic, observational, multicentric, national study) and concentrates on the detailed analysis of the characteristics of the sample of working women aged 25-64 (N=3090) and of the subgroup of individuals with VH and/or IU (N=307).

Results: 4.01% of the subjects presented UI alone, 2.69% OAB alone, 3.24% presented both pathologies. There exists association between UI and/or VH presence and frequent urinary infections, hypertension and diabetes. Taking into account individuals with UI and/or OAB, 28.01% had problems to retain urine, and 16.94% suffered leakage daily; 27.36% suffered uncontrollable urge to urinate daily; 57.65% had never sought medical advice, 35.40% had visited a specialist, 23.13% would like to visit a specialist in incontinence; 28.01% had received treatment, from which 55.81% had received physiotherapy and 25.58% pharmacologic treatment.

Conclusion: In this study, specific data about VH and IU in working women aged 25-64 are presented, including those referring to the magnitude of these conditions and use of sanitary resources in subjects with UI and/or OAB, aiming at contributing to a better diagnosis and handling of patients and resources.

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Análisis del síndrome de vejiga hiperactiva y de la incontinencia urinaria en mujeres laboralmente activas entre 25-64 años. Estudio EPICC

Palabras clave:
Incontinencia urinaria
Vejiga hiperactiva
Mujeres

RESUMEN

Introducción: Los síntomas urinarios de vejiga hiperactiva (VH) e incontinencia urinaria (IU) tienen un elevado impacto personal y económico. Este trabajo se centra en el análisis detallado de VH e IU (sintomatología derivada, hábitos de consulta y consumo de recursos) en una muestra de mujeres laboralmente activas de 25-64 años.

Material y métodos: Trabajo enmarcado en el Estudio EPICC de la Asociación española de urología (epidemiológico, observacional, multicéntrico, ámbito nacional) y centrado en el análisis detallado de la muestra de mujeres laboralmente activas de 25-64 años (N = 3090) y del subgrupo de mujeres con VH y/o IU (N = 307).

Resultados: El 4,01% de la muestra presentó únicamente IU, el 2,69% únicamente VH y el 3,24% ambas patologías. Se observó asociación entre la presencia de IU y/o VH e infecciones urinarias frecuentes, hipertensión y diabetes. En la muestra de sujetos con IU y/o VH el 28,01% tenía problemas para retener orina y el 16,94% tenía pérdidas diarias; el 27,36% sufría diariamente deseos incontrolables de orinar; el 57,65% no había consultado al médico, el 35,40% había consultado al especialista, el 23,13% deseaba consultar al especialista en incontinencia; el 28,01% había recibido tratamiento, de ellas al 55,81% se les prescribió fisioterapia y al 25,58% tratamiento farmacológico.

Conclusión: Se presentan datos sobre presencia de VH e IU en mujeres laboralmente activas de 25-64 años y sobre la magnitud de las afecciones y uso de recursos sanitarios en sujetos con IU y/o VH, a fin de contribuir al mejor diagnóstico de estos trastornos y manejo de pacientes y recursos.

Introduction

According to the International Continence Society (ICS), urinary incontinence (UI) is the involuntary and objectively demonstrable leaking of urine, while overactive bladder (OAB) is a syndrome characterized by the presence of urgency with or without frequent associated incontinence, and often accompanied by frequency of micturition and nocturia.[1]

These urinary disorders are common in the general population, particularly in elderly individuals. The present work is set within the cooperative epidemiological study designed to determine the Prevalence, Burden and Cost of Overactive Bladder and Urinary Incontinence in Spain (EPICC study) of the Spanish Association of Urology, which estimated the prevalence of OAB and/or UI in this country to be close to 10% for working women between 25-64 years of age, 5% for working males between 50-65 years of age, and over 50% in institutionalized subjects of either sex older than 65 years of age.[2]

UI and OAB have a negative impact upon patient quality of life, and may even affect the personal and professional relationships of those who suffer these disorders.[3] On the other hand, different urinary symptoms have been identified as predictors of anxiety.[4-6]

In addition to the physical and psychological burdens which these disorders may represent, urinary manifestations such as UI and OAB, and their consequences in the form of falls and fractures, urinary or skin infections, and depression, represent an important economic burden from both the healthcare and occupational perspectives, as a result of lessened work productivity or sick leave.[7-9]. In Spain, the annual expenditure per individual with urinary symptoms is estimated to be € 262.[7]

On the other hand, UI and OAB are underdiagnosed, due in part to the fact that many people feel ashamed to seek medical help for their problem, or believe that there is no solution for their symptoms. This fact, and the important human and economic impact of these disorders, make it necessary to identify specific strategies for securing an effective diagnosis and providing adequate treatment for these urinary symptoms.[10-12]

Studies conducted in Spain and in other countries in our setting have reported an increased prevalence of urinary symptoms in women compared with men.[2,13,14] Specifically, in women a correlation has been found between the presence of urinary symptoms and lessened sexual activity,[14,15] as well as an association between such symptoms and alterations like depression, recurrent lower urinary tract infections, diabetes and obesity.[16-18]

The present study offers a detailed analysis of OAB and UI in reference to the derived symptoms, patient consulting habits, and healthcare resource utilization, in a sample of working women between 25-64 years of age.

Material and method

The present work is set within the cooperative EPICC study of the Spanish Association of Urology, which centers on the study of the prevalence of UI, nocturnal enuresis and OAB in

Spain, in different general population groups.[2] The present study offers a detailed analysis of one of the EPICC population groups, namely working women between 25-64 years of age (N=3090). The general characteristics of the study and the methodology used to collect the data can be consulted in detail in the cooperative EPICC survey.[2]

In this study, and in addition to the data needed to detect signs and symptoms of UI and OAB in the general population with a view to determining the prevalence of these disorders, a structured interview was used to document 6 clinical parameters complementing the study in the general population, along with information on the magnitude of the disorders and the use of healthcare resources in those individuals found to be positive at screening for UI or OAB. Data on the presence of the following pathologies were collected: frequent urinary infections, hypertension, diabetes mellitus, brain palsy / stroke, Parkinson's disease and other illnesses. Data on the gynecological history of the women were also collected: number of vaginal deliveries, episiotomies, use of forceps, cesarean sections, miscarriages, presence of vaginal prolapse, menopause and age at menopause, and hormone replacement therapy. A complete list of urinary symptoms was used to describe the patients with UI and/or OAB in detail (N=307). Lastly, healthcare resource utilization in this group of patients with UI and/or OAB was evaluated based on the collection of data on the clinical practice involved in the detection and treatment of the disease (medical consultation, hospitalization, diagnostic tests used and treatments provided).

The study series was classified according to whether the patients presented UI (cases with urine leakage on more than one occasion in the last year, and with a frequency of leakage of at least 3 times a year), OAB (cases reporting a sudden and imperious urge to urinate, with a frequency of such urgent sensation of at least 3 times a year), both diseases, or neither of them. The group with UI and/or OAB was defined as the subjects presenting UI, OAB, and both disorders.

Statistical analysis

Double data input by independent personnel and the generation of consistency filters were used for data processing. Logic data filtering was employed. These procedures[7] were carried out with data processing software validated by the regulatory agencies (Oracle® Clinical), and the statistical analyses and tables were generated using the SAS version 9.1 statistical package.

The quantitative variables were expressed as the mean and standard deviation (SD). Qualitative variables in turn were represented by the absolute and relative (percentage) frequencies. The Shapiro-Wilk statistic was used to test for normality. The comparison of groups was based on the chi-squared test in the case of discrete variables, and on the Student t-test in the case of continuous variables. Statistical significance with the different tests was accepted for $p<0.05$.

Table 1 – Personal and sociodemographic characteristics of the study sample (N=3090)

	UI	OAB	Both	Neither
Distribution of urinary symptoms according to age				
25-34 years	1.33%	2.43%	1.77%	94.47%
35-44 years	5.33%	2.50%	2.50%	89.67%
45-54 years	5.35%	2.16%	2.57%	89.92%
55-64 years	4.56%	4.07%	7.17%	84.20%
Age	47.77 (8.99)	45.89 (12.50)	49.13 (11.44)	42.91 (11.27)
BMI	26.27 (5.32)	25.18 (4.75)	27.05 (5.04)	24.22 (4.04)
Marital status				
Single	8.06%	28.92%	15.00%	26.77%
Married	75.00%	60.24%	73.00%	63.46%
Widowed	5.65%	3.61%	5.00%	3.13%
Divorced	8.87%	4.82%	6.00%	5.53%
Education level				
Illiterate	3.23%	3.61%	3.00%	1.51%
Primary	35.48%	24.10%	45.00%	27.42%
Secondary	25.00%	31.33%	26.00%	32.09%
University	36.29%	39.76%	26.00%	37.69%
Profession				
Housewife	25.00%	16.87%	32.00%	16.60%
Liberal profession	1.61%	10.84%	6.00%	5.68%
Employee (directive post)	7.26%	2.41%	4.00%	4.49%
Employee (non-directive)	56.45%	62.65%	50.00%	64.32%
Number of offspring	2.02 (1.21)	1.47 (1.46)	1.68 (1.49)	1.24 (1.19)

Results

The study sample consisted of 3090 working women between 25-64 years of age, corresponding to 83% of the subjects with these characteristics invited to participate in the study. A total of 4.01% of the sample presented only UI, 2.69% only OAB, and 3.24% had both disorders – thus resulting in a prevalence of UI of 7.25% versus 5.93% in the case of OAB. Considering the distribution of urinary symptoms by age intervals, UI and/or OAB were present in 5.53% of the women between 25-34 years of age, in 10.33% of those between 35-44 years of age, in 10.08% of those between 45-54 years of age, and in 15.80% of the women between 55-64 years of age. Table 1 summarizes the personal and sociodemographic characteristics of the study sample, based on the presence or absence of the urinary disorders considered, along with the distribution of the contemplated urinary symptoms in the different age intervals. The mean age of the sample was 43.39 (11.32) years, and 29.26% of the women were between 25-34 years of age, 19.42% between 35-44 years of age, 31.46% between 45-54 years of age, and 19.87% between 55-65 years of age. On the other hand, 8.55% of the interviewed subjects that proved negative at screening for the urinary symptoms considered presented a body mass index (BMI) of over 30 kg/m^2. This figure in turn was found to be 21.77% for women with UI, 15.66% for women with OAB, and 25.00% for women with both disorders. Table 2 describes the study sample in terms of gynecological antecedents, while table 3 reports the urinary symptoms and other health problems. As can be seen in table 4, there were statistically significant differences in the prevalence of frequent urinary infections, hypertension, diabetes and the presence of other illnesses (excluding Parkinson's disease and brain palsy / stroke, which showed no differences, due to the sample size involved) between the group of patients with UI and/or OAB and the group without such urinary symptoms.

A detailed study was made of the sample of women with UI and/or OAB (N=307)(see table 5 for distribution by ages), revealing that 28.01% of the subjects had urine retention problems, and 16.94% suffered daily urine leakage. In turn, 49.51% described leakage as "droplets", 47.23% experienced a

Table 2 – Gynecological antecedents (N=3090)

	UI	OAB	Both	Neither
Vaginal deliveries	1.93 (1.14)	1.60 (1.37)	1.84 (1.54)	1.38 (1.17)
Forceps	0.27 (0.49)	0.10 (0.31)	0.27 (0.52)	0.09 (0.34)
Episiotomies	1.69 (1.12)	1.00 (1.30)	1.35 (1.39)	1.08 (1.04)
Cesarean sections	0.57 (0.82)	0.18 (0.44)	0.20 (0.49)	0.28 (0.57)
Miscarriages	0.61 (0.75)	0.23 (0.52)	0.41 (0.62)	0.32 (0.66)
Menopause	40.32%	44.58%	57.00%	30.94%
Age at menopause	48.04 (4.62)	48.32 (4.15)	49.08 (4.57)	49.12 (4.19)
Vaginal prolapse	5.65%	9.64%	14.00%	2.73%
Hormone therapy	7.26%	9.64%	5.00%	5.64%

Table 3 – Description of the global sample in terms of urinary symptoms and other health problems (N=3090)

	UI	OAB	Both	Neither
Symptoms				
Bothersome desire to urinate	7.26%	14.46%	26.00%	0.72%
Sudden and irresistible desire to urinate	16.13%	100.00%	100.00%	4.53%
Urination more than 8 times a day	25.00%	51.81%	49.00%	6.97%
Wakes up at night more than once to urinate	20.16%	40.96%	44.00%	6.40%
Urinates more than twice at night	7.26%	14.46%	27.00%	1.83%
Urine leakage on more than one occasion in the last year	100.00%	13.25%	100.00%	1.94%
Health condition				
Very good / good	72.58%	69.88%	57.00%	85.12%
Regular	21.77%	26.51%	35.00%	12.72%
Poor / very poor	5.65%	2.41%	6.00%	1.15%
Health problems	46.77%	55.42%	61.00%	29.36%
Disorder				
Frequent urinary infections	13.71%	13.25%	22.00%	4.38%
Hypertension	19.35%	19.28%	25.00%	11.14%
Diabetes	5.65%	2.41%	8.00%	3.16%
Other diseases	28.23%	37.35%	36.00%	16.42%

Table 4 – Health problems in patients with incontinence and/or overactive bladder, and in patients without these urinary symptoms (N=3090)

	With urinary symptoms*	Without urinary symptoms	X2	p
Health problems	53.75%	29.36%	75.86	<0.001
Disorder				
Frequent urinary infections	16.29%	4.38%	75.76	<0.001
Hypertension	21.17%	11.14%	27.20	<0.001
Diabetes	5.54%	3.16%	5.00	0.025
Other diseases	33.22%	16.42%	56.11	<0.001

*Incontinence and/or overactive bladder

Table 5 – Description of parameters related to urinary symptoms according to age in women with incontinence and/or overactive bladder (N=307)

	24-34 (N=50)	35-44 (N=62)	45-54 (N=98)	55-64 (N=97)
Nocturnal leakage	8.00%	1.61%	4.08%	10.31%
Urine retention problems	26.00%	22.58%	24.49%	36.06%
Retains urine less than two hours	18.00%	16.13%	14.29%	20.62%
Notices urine leakage	64.00%	83.87%	82.65%	79.38%
Daily leakage	4.00%	3.23%	23.47%	25.77%
Desire to urinate before leakage occurs	40.00%	46.77%	42.86%	55.67%
Daily uncontrollable desire to urinate	32.00%	4.84%	29.59%	37.11%
Has not consulted a physician	76.00%	70.97%	52.04%	45.36%
Has received treatment	18.00%	25.81%	33.67%	28.87%
Resource utilization				
Panty shield	40.00%	54.84%	52.04%	37.11%
Padding	2.00%	3.22%	10.20%	20.61%
Diaper	0.00%	1.61%	1.02%	2.06%
Wishes to receive care from specialist in incontinence	22.00%	17.74%	26.53%	23.71%

desire to urinate before leakage, 74.92% suffered leakage on coughing or sneezing, 45.28% on laughing, and 7.17% during sexual intercourse. As regards the detection and treatment of these pathologies, 57.65% of the women with UI and/or OAB had not consulted a physician, 17.26% had visited a gynecologist, 10.42% consulted a general practitioner, and 8.14% a urologist. In turn, 4.25% visited the specialist on more than one occasion, 9.77% had undergone radiological or ultrasound evaluation, and 4.56% had been subjected to urodynamic testing. Treatment was received by 28.01% of the subjects: of these, 55,81%% underwent physiotherapy, 54,65% received hygiene-dietary recommendations, 25,58% drug treatment (tolterodine in 45,45% and oxybutinin in 4,55%), and 16.28% underwent surgery. Lastly, 1.31% had been hospitalized because of their incontinence problems, and 23.13% expressed a desire to receive adequate management by a specialist in incontinence.

Discussion

The present work offers a detailed analysis of the results obtained by the cooperative EPICC study of the Spanish Association of Urology, in reference to the parameters directly and indirectly related to urinary symptoms for the population group represented by working women between 25-64 years of age.

The global prevalence of UI and OAB was 7.25% and 5.93%, respectively. As has been commented before,[2] these prevalences are lower than those reported by other studies both in Spain[13,19,20] and elsewhere.[21-23] In order to explain these differences, and apart from the differences inherent to the study populations involved, where a determinant factor is the age of the sample, we must take into account the restrictions of the definitions used in our study - UI being assumed only in the presence of at least three urine leakage episodes a year, and OAB only when the sudden and irresistible urge to urinate occurred at least three times a year. Probably for this reason in our study we also recorded a larger percentage of cases of daily leakage among the women with UI (23.21%) than in another similar survey (13.71%).[22]

The present study recorded a larger percentage of women with a body mass index of over 30 kg/m^2 in the groups with urinary symptoms – thus pointing to an association between urinary symptoms and obesity, as evidenced in other studies.[17,18]

As expected, the data relating to parity, number of offspring and number of vaginal deliveries were greater on average among the women with urinary symptoms. The use of forceps during delivery and the performance of an episiotomy have been identified as risk factors for UI.[24,25] In our study, the mean number of episiotomies and use of forceps in women with OAB was similar to the situation found in the women without urinary pathology, but was higher in the groups of women with UI and both disorders combined.

As regards the health condition of the studied women, the groups with urinary disorders had significantly more health problems than the controls – with an increased prevalence of frequent urinary infections, hypertension and diabetes. Diabetes mellitus has been identified as the most important independent predictive factor of UI in women.[18] On the other hand, in accordance with the observations of a specific study of health-related quality of life in patients with urinary symptoms,[5] patient perceived health was poorer in the groups with UI, OAB, or both pathologies.

The percentage of women with urinary symptoms in the present study who sought medical help (42.35%) was similar to that reported in a study of women between 18-65 years of age with UI in Spain.[19] Both this percentage and the proportion of women with urinary symptoms who received drug treatment (25.58%) were in line with the observations of other studies carried out in the United States (40-45% and 22.5%, respectively).[26-28]. The consultation rate was much lower than that recorded for the subgroup of males in the EPICC study.[29] This difference is possibly due to the previously reported observation[27] that consultation is correlated to sex, though the fact that the sample of women in our study covers a broader age spectrum, and that consultation appears to increase with age, may also have exerted an influence (table 5). In the same way as in the subgroup of males,[29] most patients seeking medical help visited a specialist (gynecologist or urologist, in this case). The percentage of subjects in the subgroup of women with urinary symptoms who expressed a desire to receive help from a specialist in incontinence was also greater than in the subgroup of males (23.13% versus 14.55%), and closer to the data reported in the literature[30] - this being consistent with the fact that fewer women have had access to some type of consultation for their problems.

As has been mentioned previously, urinary symptoms are particularly prevalent in the female population in our country, and represent an important personal, healthcare and economical burden, with a negative impact upon the work performance of the affected individuals. The present work has carried out a detailed analysis of the prevalence of symptoms associated to UI and OAB in working women between 25-64 years of age, and examines the tendencies in relation to their diagnosis and the use of healthcare resources, with a view to contributing to improved management of patients with urinary symptoms from the clinical and economic perspectives.

Conflicts of interest

The authors declare no conflicts of interest.

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