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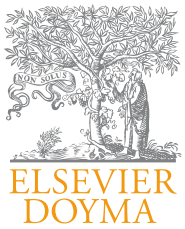

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ORIGINAL ARTICLE

# Assessment of reasons for overactive bladder treatment change

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**KEYWORDS**
Overactive bladder;
Pharmacological therapy;
Treatment compliance;
Patient satisfaction

## Abstract

*Objectives:* Although efficacious, some patients do not respond optimally to overactive bladder (OAB) treatment. The objective of this study was to identify the reasons why some patients do not respond and to look for reasons for changes in treatment and patient satisfaction with the new treatment.

*Materials and methods:* Epidemiological, cross-sectional, non-interventional study to determine the reasons for OAB treatment switching and satisfaction with such OAB treatment switch. OAB patients (OAB-V8≥8), 18 years or more, who had modified their treatment during the previous 3-4 months, were recruited. Demographic data, symptoms, previous, current and concomitant treatments, reasons for treatment switch, clinical global impression (CGI) on disease severity and symptom improvement, Morinsky Green questionnaire, satisfaction with treatment, treatment preference and treatment benefit scale (TBS) were compared.

*Results:* Out of 3,365 successive patients, 2,038 (61%) were eligible (61.1±11.2 years; 77% women). The physician decided to switch in 69% of the cases and 31% of patients asked for a change in treatment. Reasons for switching were lack of clinical benefit (60%), side effects (24%), patients' request (8%), non-compliance (6%) and other (2%). 52% of patients complied with new treatment. According to the CGI, 65.4% showed improvement with respect to their previous treatment. 60% were quite/very satisfied with current treatment, 91% preferred it to their previous treatment and 93% reported that their symptoms had improved.

*Conclusions:* The lack of clinical benefit is the main reason for changing OAB treatment. Most of the patients that switched prefer their new treatment.



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**PALABRAS CLAVE**
Vejiga hiperactiva;
Tratamiento farmacológico;
Cumplimiento de la medicación;
Satisfacción del paciente

## Evaluación de los motivos del cambio de tratamiento para la vejiga hiperactiva

### Resumen

*Objetivos:* Aunque el tratamiento de la vejiga hiperactiva (VH) es eficaz, muchos pacientes no responden, por lo que interesa estudiar los motivos de cambio de tratamiento y la satisfacción del paciente con el nuevo tratamiento.

*Material y métodos:* Estudio epidemiológico, transversal, no intervencionista para determinar los motivos del cambio de tratamiento en VH y la satisfacción con dicho cambio. Se reclutaron pacientes con VH (OAB-V8 ≥ 8), de ambos sexos, mayores de 18 años, que habían modificado su tratamiento en los 3-4 meses previos. Se recogieron datos demográficos, síntomas, tratamiento previo, actual y concomitante, motivo del cambio, impresión clínica global (ICG) de gravedad y de mejoría, cuestionario Morinsky Green, satisfacción con el tratamiento, preferencia de tratamiento y la escala del beneficio del tratamiento (TBS).

*Resultados:* De 3.365 pacientes reclutados, 2.038 (61%) fueron evaluables (61,1 ± 11,2 años; 77% mujeres). El médico solicitó el cambio de tratamiento en un 69% y el paciente en un 31%, por motivos de falta de beneficio clínico (60%), efectos secundarios (24%), petición del paciente (8%), incumplimiento terapéutico (6%) y otros (2%). El 52% de los pacientes cumplió con el nuevo tratamiento. Según ICG, 65,4% presentó mejoría respecto al tratamiento anterior. Un 60% de los pacientes se mostró bastante/muy satisfecho con el tratamiento actual, un 91% lo prefirió al previo y un 93% opinó que sus síntomas habían mejorado

*Conclusiones:* La falta de beneficio clínico es el principal motivo del cambio de tratamiento de la VH. La mayoría de los pacientes prefieren el nuevo tratamiento.



## Introduction

Overactive bladder (OAB) is a syndrome that is characterized by urgency, with or without urinary urgency and frequently accompanied by increased frequency during the day and nocturia,[1] which are all symptoms of filling of the lower urinary tract.

Its prevalence in adults varies from 12% to 17% and increases with age.[2-4] In Spain, the EPIC study carried out in specific population groups shows that the prevalence of OAB, previously estimated in adults ≥40 years in 21.5%,[5] was 5.9% for women between 25 and 64 years, 4.6% for men between 50 and 65 years and 38.5% for institutionalized persons over 65 years old.[6]

OAB negatively affects the quality of life of the patients,[7,8] both due to the bladder filling symptoms that characterize it and the strategies that the patients adopt to be able to live with them.[9] Antimuscarinics act on the muscarinic receptors of the bladder and are effective in the treatment of OAB.[10] In elderly men, OAB is frequently accompanied by benign prostate hyperplasia (BPH),[11] and the treatment used consists of alpha-adrenergic blockers and five-alpha-reductase inhibitors to treat the micturition symptoms arising from the obstruction.[12,13]

Not all the patients seek professional help for this problem and in Spain, only about 17% receive treatment.[5] Moreover, patients with OAB often do not respond adequately to pharmacological treatment, especially because they do not adhere it, but also due to lack of efficacy or tolerability.[14] In these cases, a change of drug[15-19] and behavioural therapy techniques can improve the symptoms that these patients have.

OAB is a prevalent disease with significant repercussion in the patient's quality of life. Only a small percentage of patients receives treatment and often the patients do not respond to it. With this small percentage of patients receiving treatment, the percentage of responders must increase. With this in mind, we have carried out a study on the reasons for the change in treatment of patients with OAB and the patient's satisfaction with the new treatment received.

## Material and method

We carried out an epidemiological, cross-sectional, observational, non-interventional study to determine the factors that produce the change of treatment in overactive bladder (OAB) and the degree of satisfaction achieved with such change. We included patients of both sexes aged over 18 years, diagnosed with overactive bladder syndrome (OAB score -V8≥8), who had changed their treatment in the 3 to 4 months prior to the day of the visit and who gave their informed consent in writing. During a single visit, the physician collected the patients' demographic data, the history of their OAB symptoms, their prior treatment for OAB and concomitant treatment in the last 3 months, the reason for the change of treatment and their current treatment. The physician completed the clinical global impression (CGI) scales on severity and the improvement

of the symptoms and the patients completed the Morinsky Green questionnaire and a questionnaire on their concern for the symptoms, bother due to the symptoms, impact of the disease on their daily activities, their degree of satisfaction with their current medication, preference for their current medication vs. their previous treatment and the treatment benefit scale (TBS).

### Clinical global impression (CGI)

1. Severe CGI: normal, not ill (score=1), at disease limit (2), slightly (3), moderately (4), notably (5), severely (6), extremely diseased (7). Responders are considered to have a score of ≤2 and non-responders to have a score of ≥3.
2. CGI of Improvement: very much (score=1), a good deal (2), somewhat (3) and a little better (4); very much (5), a good deal (6), somewhat (7) and a little worse (8). Responders are considered to be those patients with a score of ≤2 and non-responders to be those with a score of ≥3.

### Patient questionnaire

1. Degree of concern (not at all, a little, somewhat, a good deal, very much) regarding the increased frequency symptoms during the day, incontinence during sex, nocturia, frequent infections of the urinary tracts, urgency, bladder pain, urinary urgency, hesitation (difficulty to begin micturition, resulting in a delay in voiding once the person is ready to urinate), stress incontinence.
2. Degree of bother (not at all, a little, somewhat, a good deal, very much) due to the increased frequency symptoms during the day (the patient thinks that he/she urinates too much during the day), urgency (sudden and irresistible want to urinate that cannot be postponed), urinary urgency (involuntary leakage of urine accompanied or immediately preceded by urgency).
3. Degree of interference (not at all, somewhat, a good deal, very much) on daily activities (normal daily, leisure and work and domestic activities).
4. Degree of satisfaction (not at all, a little, somewhat, a good deal, very much) with current medication
5. Preference for current or previous medication (without doubt I prefer my current medication; some preference for my current medication, some preference for my previous medication, without doubt my previous medication)
6. Treatment benefit scale (TBS).[20] Single-item scale that requires the patients to compare the current condition of their illness (urinary problems) with the condition prior to beginning the study [it has improved tremendously (score=1); it has improved (2); no changes (3); it has worsened (4)].
7. Morinsky Green questionnaire.[21] It comprises four questions (Have you taken the medication as many times as your doctor prescribed? Have you ever forgotten to take your medication? If you felt better, did you at any time stop taking your medication) If you felt ill at any time when you had to take it, did you stop taking it?), to determine if a patient complies with his/her medication regimen. Patiently that answered the four questions correctly were classified as compliers, those that answered three correctly, as partial compliers, and those that answered ≤2 questions correctly were considered as non-compliers.

### Statistical methodology

We prepared a descriptive statistic of all the variables, including central tendency and dispersion measurements for continuous variables, and absolute and relative frequencies for categorical variables, with 95% confidence intervals in both cases. We carried out a logistic regression analysis to see the factors that can influence satisfaction with treatment, considering satisfaction with the treatment as a dependent variable and as independent variables: age, sex, concomitant diseases, concomitant treatments, prior OAB treatment, reason for the change of treatment, therapeutic compliance and clinical improvement of the disease (responder according to CGI scale of severity and of improvement). We used those variables whose p-value associated with the coefficient in regression was <0.20 as potential variables to be included in the global model. The variables used in the final model were: sex, paralysis/ictus, depression, concomitant medication, bladder retraining, reason for the change of treatment, therapeutic and responder compliance in accordance with the CGI of severity and of improvement. We used the SAS® version 8.2 statistical software to carry out all the analyses.

## Results

We recruited 3,365 patients, of whom 452 did not have an OAB-V8 score ≥8; 990 had not changed their treatment in the period established in the inclusion criteria and 12 patients erroneously had an OAB diagnosis date subsequent to their inclusion in the study. Thus, only 2,038 (61%) could be studied.

The characteristics of the evaluable population are shown in table 1. The mean age was 61 years and 77% were women. 65% were overweight or obese. The mean score of the OAB-V8 test was 17 (range: 8-42) and the principal concomitant diseases, in addition to obesity, were arterial hypertension, frequent urinary infections and diabetes mellitus. They had changed their treatment 2.1 months previously and 66% were receiving concomitant medication.

Of the total requests to change treatment, in 69.1% cases, the physician had made the request (a specialist in 1,342 cases and a general practitioner in 61 cases) and in 30% of the cases, the patient. The most frequent reason for the request was the lack of clinical benefit (60%) followed by side effect (24%) (fig. 1).

76.8% of the patients had received prior treatment with medication (96.2% of whom were receiving an antimuscarinic alone or in combination with other drugs), 4.6% were simply bladder retraining and 18.5% received no treatment. With the change of treatment, 99% were receiving antimuscarinics and only 1% was not receiving

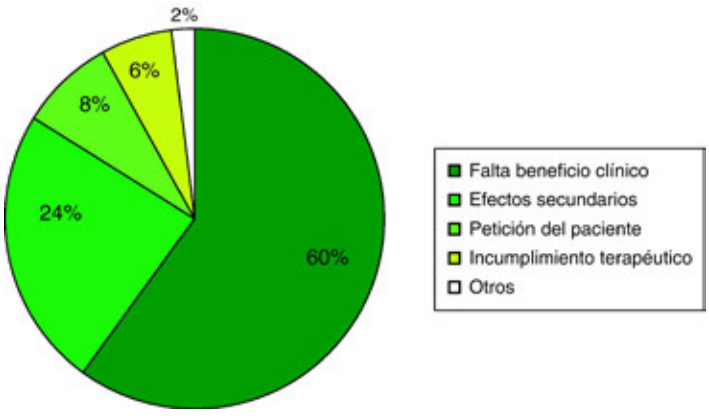


**Figure 1** Reasons for the change of treatment.

treatment (table 2). 51.8% of the patients partially complied with their current treatment (they correctly responded to 3 or the 4 questions of the Morinsky Green questionnaire).

In general, the symptoms that most frequently concerned the patients were increased frequency during the day, urgency, nocturia and urinary urgency, which were also those that caused the greatest (a good deal and very much) concern (fig. 2). In 92.5% and 93.4% of the patients, OAB interfered respectively with their normal daily activities (NDA) and leisure activities (LA), with greater intensity on the latter. Upon analysing the patients by age group and by concern for the symptoms, we observed significant differences in the concern for incontinence during sex ($p<0.001$) and frequent infections of the urinary tracts ($p=0.021$), where we noted a greater percentage of patients that were "quite or very concerned" among those aged less than 45 years, for nocturia ($p<0.001$) and hesitation ($p<0.001$), where the >65 years group presented a greater percentage of patients that were "quite and very concerned"; and for the increased frequency during the day ($p=0.046$), where the group of 45-54 years presented a higher percentage of "quite and very concerned" patients. As regards discomfort, we observed significant differences in discomfort caused by urgency ($p=0,045$), where the 45-54 years group presented a higher percentage of patients with "a good deal or significant discomfort" due to this symptom. In relation to the impact of OAB on daily life activities, we also noted significant differences by age group as regards the impact on work ($p<0.001$), where the <45 years group presented a higher percentage that felt "considerable or significant impact".

In accordance with the physician's clinical global impression (CGI) after the change of treatment, 25% of the patients were not ill and only at the disease limit and 65% presented improvement with respect to their previous treatment. 60% of the patients were quite or very satisfied with their current treatment; 91% preferred it to their previous treatment (fig. 3), and 93% were of the opinion that their urinary symptoms had improved during their

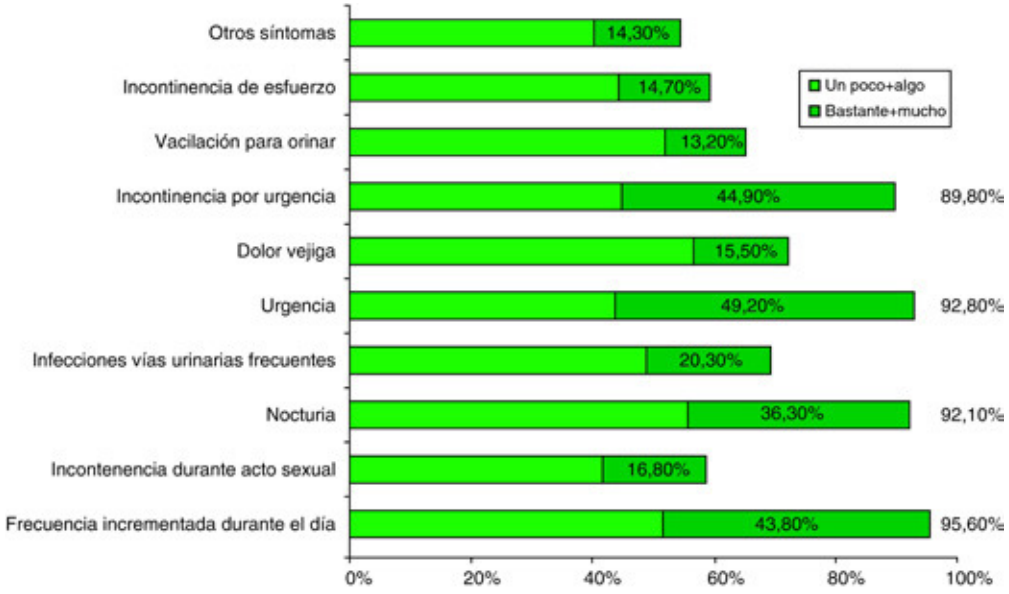


**Figure 2** Symptoms that cause concern in patients.

**Table 1** Demographic and clinical characteristics of evaluable patients

| | |
|---|---|
| *Women* | 1,569 (77%) |
| *Age (years)* | 61.1 ±11.2 |
| <45 | 162 (7.9%) |
| 45-54 | 335 (16.4%) |
| 55-64 | 665 (32.6%) |
| >65 | 876 (43%) |
| *Weight (Kg)* | 71.4 ±10.3 |
| *Size (cm)* | 164.4 ±7.2 |
| *BMI* | 26.4 ±3.6 |
| Slimness (<18.5) | 10 (0.5%) |
| Normalcy (18.5-24.9) | 694 (34.1%) |
| Overweight (25-29.9) | 1061 (52.1%) |
| Grade 1 obesity (30-34.9) | 228 (11.2%) |
| Grade 2 obesity (35-39.9) | 36 (1.8%) |
| Morbid obesity (>40) | 6 (0.3%) |
| *Time since diagnosis (months)* | 11.7 ±18.4 |
| *Time since treatment change (months)* | 2.1 ±1.2 |
| *OAB-V8 score* | 17 (8-42) |
| *Concomitant diseases* | |
| Obesity | 1,331 (65.3%) |
| HTA | 884 (43.4%) |
| Frequent urinary infections | 443 (21.7%) |
| DM | 420 (20.6%) |
| Depression | 265 (13%) |
| Paralysis/ Ictus | 26 (1.3%) |
| Parkinson's disease | 24 (1.2%) |
| Other | 312 (15.3%) |
| Concomitant medication | 1.344 (66%) |

Values expressed as mean ± DT, n (%) or median (minimum value-maximum value).

**Table 2** Previous and current overactive bladder treatment

| | N | % |
|---|---|---|
| **Previous OAB treatment (prior to the change)** | | |
| *Antimuscarinic (1 or 2) ± Alpha-adrenoceptor antagonists ± Antidepressants ± Other* | 1,505 | (73.8) |
| *Antidepressants ± Alpha-adrenoceptor antagonists ± Other* | 37 | (1.8) |
| *Bladder retraining* | 95 | (4.7) |
| *Other* | 23 | (1.1) |
| *None* | 378 | (18.5) |
| **Current OAB treatment (after the change)** | | |
| *Antimuscarinic* | 2,010 | (98.6) |
| Fesoterodine | 1,551 | (76.1) |
| Tolterodine | 254 | (12.5) |
| Solifenacin | 187 | (9.2) |
| Tropsium chloride | 5 | (0.2) |
| Oxybutinine | 9 | (0.4) |
| Antimuscarinic (se) | 4 | (0.2) |
| *Tamsulosin* | 1 | (0.05) |
| *Otilonium bromide* | 1 | (0.05) |
| *Tebetane* | 2 | (0.1) |
| *Alprazolam* | 1 | (0.05) |
| *None* | 23 | (1.1) |

Values expressed as n (%) of patients.

current treatment (fig. 4). Regardless of their previous pharmacological treatment, the majority of the patients preferred their current treatment, and a total of 91% of them preferred their current treatment.

We performed a logistic regression analysis to see the factors that could affect satisfaction with the treatment. In accordance with the CGI of improvement scale, responder patients had a higher probability of up to ten times more, and responders in accordance with the CGI of severity scale, had a 1.6 times higher probability of showing satisfaction with their current treatment than non-responders. Those that complied with the treatment were 1.7 times more likely to be satisfied with the treatment than those that did not comply with it and, patients with bladder training were 1.4 times more likely to show satisfaction with the treatment than those who did not receive it.

## Discussion

OAB is a disease that increases with age; the mean age of our patients was 61 years. An epidemiological study carried out in Spain,[5] showed a greater prevalence for women than for men (25.6%vs. 17.4%). Another subsequent epidemiological study, EPIC, also showed a higher prevalence in women, despite including younger patients than in the case of men (5.9%in women from 25 to 64 years and 4.5%in men from 50 to 64 years). For this reason, it is not surprising than there was a majority (77%) of women among our patients. In another recent study carried out to assess comorbidity in patients with OAB at urology and gynaecology clinics, the mean age of 1,675 patients was 59 years and 74% were women;[22] this data is very similar to ours. More than 65% of our patients presented overweight or obesity and the majority were women. This is consistent with obesity being a risk factor for OAB in women.[23] Diabetes and lower tract urinary infections (the latter especially in women), are also associated with OAB,[22,24] and in accordance with this association, they appeared in our population in a high percentage, like hypertension, which is usually frequent in patients with OAB because the prevalence of both processes increases with age.[25]

Increased frequency during the day, urgency and urinary urgency are symptoms that concern patients with more frequency and intensity. In previous studies, it was noted that it is these symptoms of bladder filling that are most bothersome and interfere with the quality of life,[26,27] that is affected in our study in around 90% of the patients, in accordance with the impact that our patients suffer in their daily activities. It seems logical that the concern for incontinence during sex ($p<0.001$) was more frequent among the younger patients (fig. 2), in the same manner as there was a higher percentage of patients in this age group in which OAB has a greater impact on work, as they are the most active patients both sexually and occupationally.

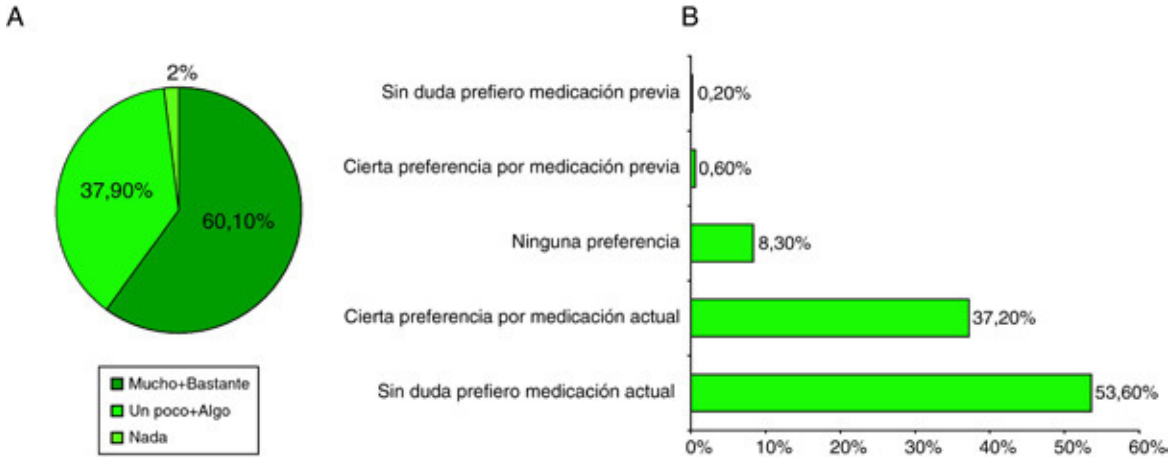


**Figure 3** Satisfaction with current treatment (A), treatment preferences (B).

Likewise, it is logical that concern for nocturia and hesitation to urinate was more frequent among the older group, as BPH occurs more in this group of patients and also has these symptoms.[11]

The majority of the requests for a change of treatment were made by the physician, and the most frequent reason was the lack of clinical benefit (60%). In several previous studies, OAB treatment was changed due to a lack of subjective efficacy by the patients in the improvement of his/her symptoms.[15-18] In the Benner et al study.[28] carried out in an ample series of patients being treated with antimuscarinics, 24.5% had discontinued their treatment in the 12 previous months. The main reason was that the medication was not responding to their treatment expectations (46.2%). Other reasons indicated were the change to a new drug (2.1%), having learned to live with the disease without the need for medication (233%) and adverse effects (21.1%).

In general, we have observed that there is a low percentage of adherence to OAB medication. A study that compared adherence between six groups of maintenance medications, OAB medications, along with prostaglandin analogues for glaucoma, were those that presented an earlier and more rapid decrease in the rate of persistence, which was 28% at six months and 18% at one year, and a lower adherence rate (35%).[29] In the D´Souza et al. study,[14] of 1,117 patients, almost half of them did not continue with their medication, as they did not show up the second time to fetch the drug, with a mean of 31 days until non-compliance. However, in this study, in an average of two months (60 days) from the initiation of the current treatment, 52%complied with it.

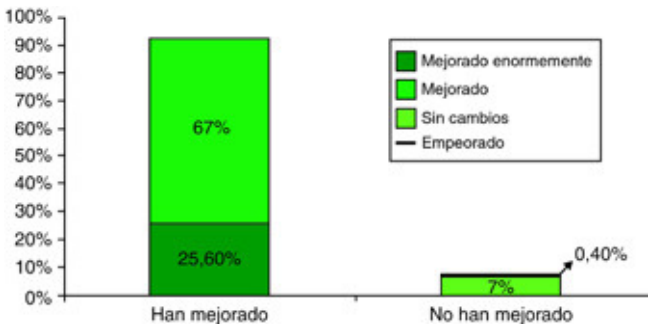


**Figure 4** Treatment benefit scale (TBS) Evolution f urinary symptoms in relation to previous condition.

With the previous treatment, among patients with pharmacological treatment (~77%), 96.2% used antimuscarinics (with or without alpha-adrenergic blockers and/or antidepressants) and 2.4% used antidepressants and/or alpha-adrenergic blockers. Moreover, with the previous treatment, 18%of the patients did not receive any treatment and almost 5%of the patients only used bladder retraining. On the other hand, with the current medication, 98.6% of the patients were receiving antimuscarinics and the 23% that did not receive pharmacological treatment decreased to only 1% In these conditions, 60% of the patients declared to be quite or very satisfied with their current treatment and 91% preferred it to their previous treatment. In the patients studied, the change of treatment improved the symptoms of 65% of the patients according to the physician's CGI and up to 93% according to the patients themselves, as occurred in the treatment change studies previously mentioned.[15-18] In one of these studies[30] carried out on 516 patients with OAB who were unsatisfied with the treatment with tolterodine, when this treatment was changed to fesoterodine, at 12 weeks a significant improvement in symptoms was noted (mean number of micturitions, number of incontinence episodes associated with urgency, urgency and nocturia and the sum of increased frequency episodes during the day and urgency) and in the symptom bother and quality of life scales associated with health of the overactive bladder questionnaire, OAB-q, with 83%of the patients perceiving an improvement in their bladder condition and 80% declaring their satisfaction with the new treatment.

This observational, non-interventional study has collected data on the reasons for the change of treatment in an ample series of patients with overactive bladder syndrome, in the majority of the cases due to a lack of efficacy. To a certain extent, the change was able to rectify the high percentage of lack of clinical benefit, as 65%of the patients improved in accordance with the CGI of improvement and 60%

claimed to be satisfied with the new treatment. Patients preferred the new treatment with respect to their previous treatment in 91%of the cases.

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## References

1. Martínez Agullo E. Terminología de la función del tracto urinario inferior. Actas Urol Esp. 2005;29:5-7.
2. Milsom I, Abrams P, Cardozzo L, Roberts RG, Thuroff J, Wein AJ. How widespread are the symptoms of an overactive bladder and how are they managed? A population-based prevalence study. BJU Int. 2001;87:760-6.
3. Stewart WF, Van Rooyen JB, Cundiff GW, Abrams J, Herzog AR, Corey R, et al. Prevalence and burden of overactive bladder in the United States. World J Urol. 2003;20:327-36.
4. Irwin DE, Milson I, Hunskaar S, Reilly K, Kopp Z, Herschorn S, et al. Population-based survey of urinary incontinence, overactive bladder, and other lower urinary tract symptoms in five countries: results of the EPIC study. Eur Urol. 2006;50:1306-14.
5. Castro D, Espuña M, Prieto M, Badia X. Prevalence of overactive bladder in Spain: a population-based study. Arch Esp Urol. 2005;58:131-8.
6. Martínez Agullo E, Ruiz Cerda JL, Gómez Pérez L, Ramírez Backhaus M, Delgado Oliva F, Rebollo P, et al. Prevalencia de incontinencia urinaria y vejiga hiperactiva en la población española: Resultados del estudio EPICC. Actas Urol Esp. 2009;33:159-66.
7. Liberman JN, Hunt TL, Stewart WF, Wein A, Zhou Z, Herzog AR, et al. Health-related quality of life among adults with symptoms of overactive bladder: results from a U.S. community-based survey. Urology. 2001;57:1044-50.
8. Espuña Pons M, Puig Clota M. Síntomas del tracto urinario inferior en la mujer y afectación de la calidad de vida. Resultados de la aplicacion del King's Health Questionnaire. Actas Urol Esp. 2006;30:684-91.
9. Abrams P, Kelleher CJ, Kerr LA, Rogers RG. Overactive bladder significantly affects quality of life. Am J Manag Care. 2000; 6(11 Suppl):S580-90.
10. Andersson KE, Wein AJ. Pharmacology of the lower urinary tract: basis for current and future treatments of urinary incontinence. Pharmacol Rev. 2004;56:581-631.
11. Arlandis Guzmán S, García Matres MJ, González Segura D, Rebollo P. Prevalencia de sintomas del tracto urinario inferior en pacientes con sindrome de vejiga hiperactiva. Manejo del paciente en la practica clinica habitual. Actas Urol Esp. 2009;33:902-8.
12. Morant SV, Reilly K, Bloomfield GA, Chapple C. Diagnosis and treatment of lower urinary tract symptoms suggestive of overactive bladder and bladder outlet obstruction among men in general practice in the UK. Int J Clin Pract. 2008;62:688-94.
13. Ruiz Cerda JL. El uso de antimuscarinicos en pacientes varones con síntomas del tracto urinario inferior por hiperplasia benigna de prostata y síntomas de vejiga hiperactiva. Actas Urol Esp. 2006;30:849-55.
14. D'Souza AO, Smith MJ, Miller LA, Doyle J, Ariely R. Persistence, adherence, and switch rates among extended-release and immediate-release overactive bladder medications in a regional managed care plan. J Manag Care Pharm. 2008;14:291-301.
15. Swift SE, Siami P, Forero-Schwanhaeuser S. Diary and patientreported outcomes in patients with severe overactive bladder switching from tolterodine extended release 4mg/day to solifenacin treatment: An open-label, flexible-dosing, multicentre study. Clin Drug Investig. 2009;29:305-16.
16. Zinner N, Kobashi KC, Ebinger U, Viegas A, Egermark M, Quebe-Fehling E, et al. Darifenacin treatment for overactive bladder in patients who expressed dissatisfaction with prior extended-release antimuscarinic therapy. Int J Clin Pract. 2008;62:1664-74.
17. Chancellor MB, Zinner N, Whitmore K, Kobashi K, Snyder JA, Siami P, et al. Efficacy of solifenacin in patients previously treated with tolterodine extended release 4 mg: results of a 12-week, multicenter, open-label, flexible-dose study. Clin Ther. 2008;30:1766-81.
18. Wong C, Duggan P. Solifenacin for overactive bladder in women unsuccessfully treated with immediate release oxybutynin: a pilot study. J Obstet Gynaecol. 2009;29:31-4.
19. O'Brien BJ, Goeree R, Bernard L, Rosner A, Williamson T. Cost-Effectiveness of tolterodine for patients with urge incontinence who discontinue initial therapy with oxybutynin: a Canadian perspective. Clin Ther. 2001;23:2038-49.
20. Colman S, Chapple C, Nitti V, Haag-Molkenteller C, Hastedt C, Massow U. Validation of treatment benefit scale for assessing subjective outcomes in treatment of overactive bladder. Urology. 2008;72:803-7.
21. Morisky DE, Green LW, Levine DM. Concurrent and predictive validity of a self-reported measure of medication adherence. Med Care. 1986;24:67-74.
22. Castro Diaz D, Rebollo P, Gonzalez-Segura Alsina D. Comorbidity Associated To Overactive Bladder Syndrome. Arch Esp Urol. 2009;62:639-45.
23. Cheung WW, Khan NH, Choi KK, Bluth MH, Vincent MT. Prevalence, evaluation and management of overactive bladder in primary care. BMC Fam Pract. 2009;10:8.
24. McGrother CW, Donaldson MM, Hayward T, Matthews R, Dallosso HM, Hyde C. Urinary storage symptoms and comorbidities: a prospective population cohort study in middle-aged and older women. Age Ageing. 2006;35:16-24.
25. Ekundayo OJ. The association between overactive bladder and diuretic use in the elderly. Curr Urol Rep. 2009;10:434-40.
26. Djavan B. Lower urinary tract symptoms/benign prostatic hyperplasia: fast control of the patient's quality of life. Urology. 2003;62(3 Suppl 1):6-14.
27. Peters TJ, Donovan JL, Kay HE, Abrams P, de la Rosette JJ, Porru D, et al. The International Continence Society ''Benign Prostatic Hyperplasia'' Study: the botherosomeness of urinary symptoms. J Urol. 1997;157:885-9.
28. Benner JS, Nichol MB, Rovner ES, Jumadilova Z, Alvir J, Hussein M, et al. Patient-reported reasons for discontinuing overactive bladder medication. BJU Int. 2009.
29. Yeaw J, Benner JS, Walt JG, Sian S, Smith DB. Comparing adherence and persistence across 6 chronic medication classes. J Manag Care Pharm. 2009;15:728-40.
30. Wyndaele JJ, Goldfischer ER, Morrow JD, Gong J, Tseng LJ, Guan Z, et al. Effects of flexible-dose fesoterodine on overactive bladder symptoms and treatment satisfaction: an open-label study. Int J Clin Pract. 2009;63:560-7.