PCUMex Survey: controversies regarding lower urinary tract symptom/benign prostatic hyperplasia management

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Abstract
Background: The management of lower urinary tract infections and lower urinary tract symptoms/benign prostatic hyperplasia is common in urologic medical practice and differences in clinical practice and general recommendations have been observed.

Aims: To know and compare decision-making among Mexican urologists with respect to the standardized international recommendations.

Methods: A survey was sent electronically to 600 urologists belonging to the Mexican Society of Urology during the months of April and May 2013 in relation to the management of urinary tract infections and lower urinary tract symptoms/benign prostatic hyperplasia.

Results: A total of 102 urologists participated in the survey. The most widely used antibiotic for urinary tract infections was nitrofurantoin (31.6%). Alpha-blockers were the first-line treatment for lower urinary tract symptoms/benign prostatic hyperplasia management (74.2%). There was disagreement in regard to other treatment aspects.

Discussion: The clinical practice of urinary tract infections and lower urinary tract symptoms/benign prostatic hyperplasia management differs from the national or international recommendations.

Conclusions: There is an opportunity to improve decision-making in certain areas in regard to urinary tract infections and lower urinary tract symptoms/benign prostatic hyperplasia management on the part of Mexican urologists.

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Encuesta PCUMex: Controversias en el manejo de infecciones de vías urinarias y síntomas urinarios bajos/crecimiento prostático benigno

Resumen

Introducción: El manejo de infección de vías urinarias y de síntomas urinarios bajos/crecimiento prostático benigno es común dentro de la práctica médica urológica. La práctica usual difiere de las recomendaciones generales.

Objetivo: Conocer y comparar la toma decisiones de los urólogos en México con respecto a las recomendaciones estandarizadas internacionales.

Material y métodos: Se realizó una encuesta a 600 urólogos pertenecientes a la Sociedad Mexicana de Urología entre abril y mayo de 2013 acerca del manejo de infección de vías urinarias y de síntomas urinarios bajos/crecimiento prostático benigno en temas controvertidos.

Resultados: Participaron 102 urólogos. El antibiótico más utilizado para infecciones de vías urinarias fue la nitrofurantoína (31.6%). En el manejo de síntomas urinarios bajos/crecimiento prostático benigno el medicamento de primera línea fueron los alfabloqueadores (74.2%). Existe controversia en otras tomas de decisiones.

Discusión: La práctica en el manejo de infección de vías urinarias y de síntomas urinarios bajos/crecimiento prostático benigno es discordante con las recomendaciones nacionales o internacionales.

Conclusión: Existe un área de oportunidad para la mejoría en la toma de decisiones por los urólogos de México.

Introduction

Consultations for urinary tract infections (UTIs) and lower urinary tract symptoms/benign prostatic hyperplasia (LUTS/BPH) are commonplace in daily urologic practice. The aim of the present article was to know the frequency of decisions made in relation to controversial themes concerning UTI and LUTS/BPH management in the daily practice of Mexican urologists.

On the one hand, UTIs are a high-cost health problem given that they are the second most common cause of infection seen in medical practice.1 According to the 2011 National Ambulatory Medical Care Survey, urinary tract infections are the 12th most common cause of medical consultation in the emergency department, reaching 282,000 outpatient visits annually.2

On the other hand, lower urinary symptoms associated with tract outlet obstruction had a reported worldwide prevalence of up to 917 million persons in 2008,3 demonstrating the high prevalence and underlining the importance of evaluating the management of these symptoms in the Mexican population.

The justification of our study is based on the fact that there are no studies in Mexico evaluating the clinical practice of urologists. This has allowed us to contrast the medical decisions made in our country with the established international guidelines.

Methods

The methodology of our review consisted of the application of a survey called the “Clinical Practice of Mexican Urologists” (PCUMex, the Spanish abbreviation). This survey was placed online through Survey Monkey (www.surveymonkey.com). Urologists and urology residents affiliated with the Sociedad Mexicana de Urología were invited to participate in the survey, accessing it with guaranteed anonymity and confidentiality. The invitation was extended by email, with 4 subsequent reminders over a 6-week period during the months of April and May 2013. A total of 600 emails were sent to an equal number of addresses. The questionnaire consisted of 20 multiple choice questions. The answers were limited to a single session per address to avoid information duplication.

A descriptive analysis of the questionnaire results was then carried out.

Results and Discussion

Of all the surveys sent out, 102 participants responded, 100 (98%) of which were men and 2 (2%) were women. Likewise, 100 (98%) participants worked in an urban environment and 2 (2%) in a rural environment. With respect to academic level, 14 (13.7%) were residents, 48 (47.1%) were specialists in urology, and 40 (39.2%) were sub-specialists in urology. The main type of primary practice was at the private level, with 88 (86.3%) participants, and 63 (61.8%) participants practiced at the public level. The principal methods among the participants for keeping up-to date academically were: national congresses for 95 (93.1%) physicians, national academic sessions for 90 (88.2%), national updating courses for 78 (76.5%), and international congresses for 70 (68.6%). The applied questionnaire referred to clinical practice in relation to UTIs and LUTS/BPH.
PCUMex Survey: controversies regarding lower urinary tract symptom/benign prostatic hyperplasia management

Question 1. Antibiotic use in uncomplicated urinary tract infections

With respect to the statistical analysis of UTI management, the participants were asked which antibiotic they used most in uncomplicated urinary tract infections. Thirty-one (30.4%) physicians answered nitrofurantoin, 21 (20.6%) quinolones, putting them in 2nd and 3rd place of frequency, and 20 (20.4%) showed a preference for ciprofloxacin and levofloxacin, respectively (table 1).

Question 1. Discussion

In their 1999 guidelines, the Infectious Disease Society of America (IDSA) recommended trimethoprim-sulfamethoxazole for 3 days as first choice treatment for uncomplicated cystitis; however, due to the growing rate of microbial resistance, the standards changed in 2010.4 In accordance with the IDSA, first-line treatment includes: nitrofurantoin, fosfomycin, and trimethoprim-sulfamethoxazole.5 Even though nitrofurantoin was the most prescribed medication in our population, more than 40% prescribed quinolones, which are not effective due to the fact that their action mechanism creates intrinsic resistance to them and their excessive use increases the number of multiresistant bacteria.6 According to the Centers for Disease Control and Prevention (CDC), 50% of the antibiotics prescribed are not necessary or the prescription is not optimal.6

Question 2. Resistance in urine cultures

Among outpatient consultations, the prevalence of multiresistant bacteria isolated in urine cultures was more than 20% in the clinical practice of 55 (56.12%) of the physicians surveyed (fig. 1).

Question 2. Discussion

This datum reported among our participants contrasts with studies reported in a review conducted in 2013 in the secondary and tertiary care hospitals in Mexico. It is important to point out that those studies were carried out in public hospitals, whereas our population was made up of physicians in both private and public practice. According to that study, the resistance rate for Escherichia coli was 79%, for ampicillin 50-60%, for trimethoprim-sulfamethoxazole, 24-50% for quinolones, and < 15% for nitrofurantoin.7 Following the IDSA recommendations, a medication should not be used if the resistance prevalence is greater than 20%, making nitrofurantoin and fosfomycin the valid therapeutic options for UTI treatment in our population.

Question 3. Antibiotic treatment in patients with indwelling catheter

As observed in table 2, 41 (40.2%) of the survey participants used suppressive-dose treatment in patients with indwelling catheter, making it the most common antibiotic treatment regimen.

Question 3. Discussion

There is much discussion as to which is the best therapeutic agent in patients with indwelling urinary catheter. According to the European Association of Urology (EAU), the length of time a patient has an indwelling catheter is the risk factor for developing catheter-associated infection.8 Even though there is no solid evidence on the management of patients with extended duration of indwelling catheters (longer than 30 days), the IDSA has made certain recommendations such as: avoid giving antimicrobial prophylaxis to patients with asymptomatic bacteriuria; only treat patients with catheter-related bacteriuria with symptoms such as fever;

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Antibiotics used in uncomplicated UTI</th>
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<tr>
<td></td>
<td>No.</td>
</tr>
<tr>
<td>Nitrofurantoin</td>
<td>31</td>
</tr>
<tr>
<td>Ciprofloxacin</td>
<td>21</td>
</tr>
<tr>
<td>Levofloxacin</td>
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<td>Cotrimoxazole</td>
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<tr>
<td>Fosfomycin</td>
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<tr>
<td>Moxifloxacin</td>
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<td>Ofloxacin</td>
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<td>Cephalexin</td>
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<tr>
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<tr>
<td>Amoxicillin/Clavulanic acid</td>
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<table>
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<th>Table 2</th>
<th>Treatment in patients with in-dwelling catheter</th>
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</thead>
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<td>No.</td>
</tr>
<tr>
<td>Dose-suppressive antibiotic treatment while the catheter is in place</td>
<td>41</td>
</tr>
<tr>
<td>Therapeutic dose antibiotic treatment when symptomatic UTI is diagnosed</td>
<td>31</td>
</tr>
<tr>
<td>Therapeutic-dose antibiotic treatment while the catheter is in place</td>
<td>14</td>
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<tr>
<td>Therapeutic-dose antibiotic treatment when there has been bacterial isolation in urine culture in the asymptomatic patient</td>
<td>5</td>
</tr>
<tr>
<td>None</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>97</td>
</tr>
</tbody>
</table>
hematuria, pain at the costovertebral junction, among others; and antibiotic treatments between 3-14 days in patients with symptomatology. Comparing these guidelines with the responses of our study population, we can confirm that management by 61.2% of those surveyed differs from the recommendations stipulated by the European guidelines. In fact, a large percentage of the urologists surveyed not only would treat patients with indwelling catheter, but also would administer suppressive doses. In a 1995 study by Rutschmann and Zwahlen, they compared the use of norfloxacin and placebo in asymptomatic patients with indwelling catheter. Those study results showed that in the group receiving the antibiotic, despite having a lower growth rate in cultures, resistance to quinolones was 95% vs. 51% upon treatment completion. We can conclude that the best approach is to not treat patients with indwelling catheter empirically, except in those cases in which there is a clinical diagnosis. It is interesting that to prevent catheter-associated urinary tract infection, 17 patients need to be treated.

Question 4. Lower urinary tract symptoms/benign prostatic hyperplasia diagnosis
In regard to LUTS/BPH diagnosis and management, the participants were asked about the best manner to diagnose prostatic growth-associated LUTS, according to their clinical criteria. The most utilized methods were: medical history of the patient, the International Prostate Specific Score (IPSS), and dynamic bladder ultrasound, with 93 (92.8%), 75 (77.3%), and 71 (73.2%) responses, respectively (table 3).

Question 4. Discussion
Initial management was previously recommended to be carried out with: adequate medical history of the patient, IPSS, and physical examination, together with complementary laboratory tests (serum creatinine, prostate-specific antigen, urinalysis), uroflowmetry, and dynamic bladder ultrasound. The 2015 European Association Guidelines stipulate that the initial approach should be carried out with patient medical history, IPSS, physical examination and urinalysis, stratifying the patients with mild, moderate, and severe symptomatology. The patients with mild symptomatology do not need further diagnostic studies, whereas those whose quality of life deterioration and/or symptomatology is moderate-to-severe should undergo bladder ultrasound and uroflowmetry or urodynamics.

Not everyone in our population carried out a diagnostic approach with the sufficient tools: 7.2% did not collect patient medical history or physical examination or IPSS (22.7%). Furthermore, current guidelines do not justify the use of dynamic bladder ultrasound, but its great prevalence is most likely a consequence of its being accepted in the 2004 guidelines. And even though cystoscopy is not indicated in the approach or treatment evaluation, 10% of our study population has utilized it to diagnose LUTS/BPH, showing a less than rigorous adherence to the guidelines. On the other hand, micturition diary is considered an adequate recommendation in the approach due to the ease of carrying it out and its low cost.

Question 5. First-line medical management in lower urinary tract symptoms/benign prostatic hyperplasia
With respect to first-line management in this group of patients, there was a preference for initiating treatment with an alpha-blocker, with 72 (74.23%) responses and the second treatment choice was an alpha-blocker combined with a 5 α-reductase inhibitor, with 21 (21.65%) responses (fig. 2).

Question 5. Discussion
The frequency of medical surveillance as first-line treatment was quite low among our surveyed participants, but it is preferred for patients with mild symptoms with a low risk for urinary tract obstruction.
In relation to medical management, results are very diverse, but treatment with alpha-blockers appears to be the first-line therapy because it is well tolerated, less expensive, and has been effective in patients with moderate-to-severe symptoms. On the other hand, the 5-α-reductase inhibitors are effective for reducing prostate volume up to 20% and therefore should be used once prostatic growth is demonstrated (> 30 ml or PSA > 1.5 ng/ml), otherwise the effect will be minimum. The combination therapy was the second most widely used modality among the urologists surveyed; even though it has been superior to both the 5-α-reductase inhibitors and the alpha-blockers, in relation to progression and symptom improvement, it is important that it be used before confirmed prostatic growth. As the results demonstrated, 5-fosfodiesterase inhibitors are not used in our population, despite their recommendation in the 2015 European guidelines.

**Question 6. Surgical indication for lower urinary tract symptoms/benign prostatic hyperplasia**

For the cases in which benign prostatic growth would be surgically managed through endoscopy, the 3 most common indications were: medical treatment-refractory disease, 64 (65.9%) responses; an acute urinary retention event, 10 (10.3%), and recurrent urinary tract infections (7.3%) (table 4).

**Question 6. Discussion**

Comparing the survey responses with the 2015 European Guideline recommendations, there are numerous indications: medical treatment-refractory disease, alterations associated with urinary tract obstruction, such as acute urine retention, renal insufficiency, gross hematuria, or recurrent infections. It is also indicated in another category, when the patient initially wishes to have surgical treatment due to symptom severity. As can be seen, there is no single indication for surgical treatment, but rather it should be evaluated depending on the context of the patient.

**Question 7. Endoscopic technique in lower urinary tract symptoms/benign prostatic hyperplasia**

Among the selected cases for surgical management, the most widely used techniques were: monopolar transurethral resection of the prostate (TURP) used by 61 (59.8%) particip-
pants, bipolar TURP by 28 (28.7%), and laser prostatic fulguration by 3 (3%) (table 5).

**Question 7. Discussion**
Today, in accordance with the guidelines of the European Association of Urology and the American Urological Association, TURP is the endoscopic criterion standard for the resection of prostates of 30-80 g in size. Monopolar TURP is the more widely used of the 2 techniques, but bipolar TURP has shown less bleeding, lower transfusion frequency, shorter catheterization duration, and shorter hospital stay, as well as an insignificant incidence of post-TURP syndrome. Given the latter, we believe that the bipolar technique will be used more frequently in Mexico in the future and that it will become the criterion standard over the monopolar technique.

**Question 8. Selection criteria for open prostatectomy**
For the majority of participants, the selection criterion for open surgery was a prostate size equal to or greater than 75 g determined through ultrasound by 60 (61.8%) participants, and determined through digital rectal examination by 18 (18.5%) (fig. 3).

**Question 8. Discussion**
According to the National Institute of Health and Clinical Excellence (NICE) guidelines, open prostatectomy should be considered when the estimated prostate volume is greater than 80 g. A total of 80.5% of the participants (78 participants) used the selection criterion for open surgery of a prostate volume size greater than 75 g. However, 18 urologists calculated prostate size through digital rectal examination, which was shown to be useful in discerning prostates above or below 50 g in size. Therefore we can say that only 60 of the 102 participants adequately followed the guidelines for reliably corroborating prostate size.

**Conclusions**
Antimicrobial resistance has largely been the result of the excessive use of antibiotics under unwarranted circumstances and therefore when and when not to use them should be carefully evaluated.

Our study demonstrated that the recommendations of the International Clinical Practice Guidelines are not completely adhered to in the Mexican urologic practice, opening a great window of opportunity for improvement in this respect.

**Ethical responsibilities**
**Protection of persons and animals.** The authors declare that no experiments were performed on humans or animals for this study.

**Data confidentiality.** The authors declare that no patient data appear in this article.

**Right to privacy and informed consent.** The authors declare that no patient data appear in this article.

**Financial disclosure**
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**Conflict of interest**
The authors declare that there is no conflict of interest.

**References**


