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CROATIAN UROLOGISTS' CLINICAL PRACTICE AND COMPLIANCE WITH GUIDELINES IN THE MANAGEMENT OF NON-NEUROGENIC MALE LOWER URINARY TRACT SYMPTOMS

Igor Tomašković[1,4], Miroslav Tomić[1], Sven Nikles[1], Ivan Neretljak[2] and Valerija Miličić[3,4]

[1]Department of Urology, Sestre milosrdnice University Hospital Center; [2]Department of Urology, Merkur University Hospital, Zagreb; [3]Department of Clinical Cytology, Osijek University Hospital Center; [4]Faculty of Medicine, Josip Juraj Strssmayer University, Osijek, Croatia

SUMMARY – The aim of this study was to assess the Croatian urologists' management of non-neurogenic male lower urinary tract symptoms (LUTS) and their compliance with the European Association of Urology (EAU) guidelines. A cross-sectional survey included 51/179 Croatian urologists. We developed a questionnaire with questions addressing compliance with EAU guidelines. The rate of performing recommended evaluations on the initial assessment of patients with benign prostate hyperplasia (BPH)/LUTS varied from 8.0% (serum creatinine and voiding diary) to 100.0% (physical examination, prostate specific antigen and ultrasound). The international prostate symptom score was performed by 31%, analysis of urine sediment by 83%, urine culture by 53%, and serum creatinine by 8% of surveyed urologists. Only 8% of urologists regularly used bladder diary in patients with symptoms of nocturia. Our results indicated that 97% of urologists preferred alpha blockers as the first choice of treatment; 5-alpha reductase inhibitors (5ARI) were mostly prescribed (84%) in combination with an alpha-blocker, preferably as a continuous treatment, whilst 29% of urologists used to discontinue 5ARI after 1-2 years. Half of the Croatian urologists used antimuscarinics in the treatment of BPH/LUTS and recommended phytotherapeutic drugs in their practice. In conclusion, Croatian urologists do not completely comply with the guidelines available.

Key words: *Prostatic hyperplasia; Lower urinary tract symptoms; Guideline adherence*

Introduction

Lower urinary tract symptoms (LUTS) represent one of the most common clinical complaints in adult men and are commonly yet not exclusively related to benign prostate hyperplasia (BPH)[1]. Requirements for greater consistency and quality in patient care prompted the European Association of Urology (EAU) to create and update clinical practice guidelines for LUTS. Clinical practice guidelines aim to improve the quality of patient care by providing specific recommendations for daily practice[2]. The EAU guidelines state that as a routine part of the initial assessment of male LUTS, medical history must be taken, a validated symptom score questionnaire with quality of life (QoL) question(s) should be completed, physical examination including digital rectal examination (DRE) should be performed, urinalysis must be ordered, post-void residual urine (PVR) should be measured, and uroflowmetry may be performed. Micturition frequency-volume charts or bladder diaries should be used to assess male LUTS with a prominent storage component or nocturia. Prostate-specific

Correspondence to: *Valerija Miličić, MD*, Department of Clinical Cytology, Osijek University Hospital Center, J. Huttlera 4, HR-31000 Osijek, Croatia
E-mail: valerija.mj@gmail.com

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antigen (PSA) should be measured only if the diagnosis of prostate cancer will change the management, or if PSA can assist in decision-making in patients at risk of symptom progression and complications. Renal function must be assessed if renal impairment is suspected from the history and clinical examination, if the patient has hydronephrosis, or when considering surgical treatment for male LUTS. Uroflowmetry should be performed before any treatment. Imaging of the upper urinary tract in men with LUTS should be performed in patients with large PVR, hematuria, or a history of urolithiasis. Imaging of the prostate should be performed if it assists in choosing an appropriate drug and when considering surgical treatment. Urethrocystoscopy should only be performed in men with LUTS to exclude suspected bladder or urethral pathology and/or before minimally invasive/surgical therapies if the findings may change the treatment. Pressure-flow studies should be performed only in individual patients for specific indications before surgery or when evaluation of the pathophysiology underlying LUTS is warranted[2].

In the present study, we aimed to examine the Croatian urologists' clinical practice and their compliance with EAU guidelines on the management of BPH/LUTS. We hypothesized that urologists were not uniformly adherent to the guidelines in evaluating a new patient with BPH related LUTS. The results would enlighten further study of barriers to adherence.

Subjects and Methods

This cross-sectional study was designed as an electronic tele voting survey including 51 Croatian urologists. We constructed a questionnaire to explore the clinical practice and compliance with guidelines. As the questionnaire contained relatively simple questions, it was pilot-tested for understanding. The pilot testers easily understood the questions, so no changes were made, and these data were not included in the analysis. The survey contained 2 sections. Section I assessed preferences in the recommended diagnostic tests. The survey included ten questions regarding the use of specific diagnostic tools in the assessment of LUTS patients according to EAU guidelines. The respondents answered whether or not they used history, DRE, International Prostate Symptom Score (IPSS), urine analysis, urine culture, PSA, uroflowmetry, voiding diary and ultrasound on the initial assessment of LUTS. Further, they answered if they ever ordered urodynamics in these settings. Section II questions referred to initial therapy, treatment practice and their compliance with EAU recommendations. Questions referred to first option treatment, combination treatment with 5-alpha reductase inhibitors (5ARI) and its duration, combination with 5 phosphodiesterase inhibitors when erectile dysfunction occurs, use of antimuscarinics and phytotherapy. In addition, urologists were asked to rate their perceived adherence (yes or no) with diagnostic and treatment recommendations in LUTS patients. Cohort characteristics are depicted in Table 1.

Table 1. Cohort characteristics

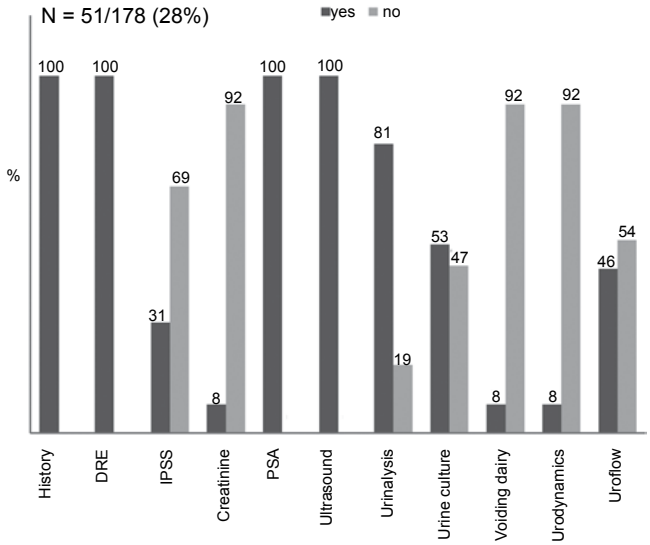
		n	%
Age	<40 years	25	49.1
	>40 years	26	50.9
Sex	Male	48	94.1
	Female	3	5.9
Workplace	University hospital	28	54.9
	County hospital	20	39.2
	Private practice	3	5.9

Statistical analysis

Descriptive statistics was used to describe demographic and professional characteristics of the cohort (mean, standard deviation, percentage). Results were expressed as percent agreement with the questions/statements in the questionnaire.

Results

The study included 51/179 (28%) urologists in Croatia, 48/51 male and three female, mean age 45±6.3 (range, 30-65) years. Forty-eight urologists work in hospital settings and three in private practice. Twenty-eight urologists work in university hospitals and the rest in county or general hospitals. The rate of performance of recommended evaluations varied from 8.0% (serum creatinine and voiding diary) to 100.0% (physical examination, PSA and ultrasound). Com-



DRE = digital rectal examination; IPSS = international symptom score; PSA = prostate specific antigen

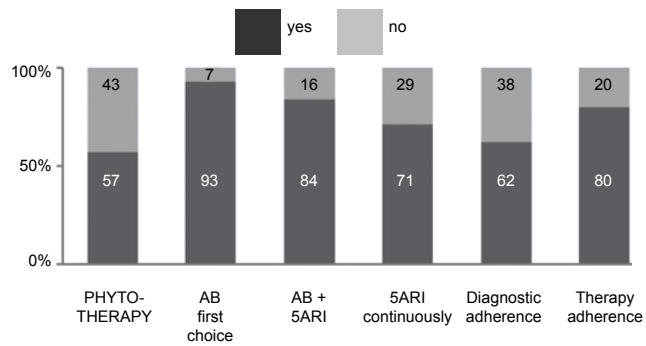
Fig. 1. Percentage of Croatian urologists using routinely/ not routinely the measures recommended by the European guidelines on initial patient evaluation for benign prostate hyperplasia/lower urinary tract symptoms.

plete results are shown in Figure 1. The rate of performance of not routinely recommended measures such as urodynamics was 8%. Questions regarding obligatory and optional tools in the assessment of LUTS patients according to EAU guidelines and respective answers are shown in Table 1. Initial assessment of LUTS/BPO (benign prostatic obstruction) comprised clinical interview and DRE, as well as PSA and ultrasound performed by all urologists (100%), IPSS by 31%, urine sediment/dipstick test by 83%, urine culture by 53%, serum creatinine by 8%, uroflowmetry by 53%, and in case of nocturia, voiding diary by 2% of urologists.

Considering drug treatment options, the preferred therapy was treatment with alpha blockers. Study results indicated that 97% of the urologists preferred them as first choice treatment, while 22% considered tamsulosin to reduce the risk of retention and need of surgical treatment at long term. Two-thirds of the urologists would combine phosphodiesterase type 5 (PDE5) inhibitors (5PDEI) medication with alpha blockers regardless of selectivity. When prescribing 5ARI, most of the urologists (84%) prescribed them in combination with an alpha-blocker, preferably as a continuous treatment, whilst 29% used to discontinue 5ARI after 1-2 years. Half of the Croatian urologists used antimuscarinics in the treatment of BPH/LUTS and 57% recommended phytotherapeutic drugs in their practice. The perceived level of compliance with EAU guidelines and summary of therapeutic approach are illustrated in Figure 2.

Discussion

The purpose of this study was to assess clinical practice and compliance with EAU guidelines among specialists in urology in Croatia by focusing on the key recommendations from the guidelines. Our investigation included one of the most comprehensive analyses of urologists' adherence to EAU guidelines on the management of BPH/LUTS in one country, and to our knowledge, is the first published analysis of the rate of performing the recommended measures in Croatia. Interestingly, Croatian urologists observe guidelines when it comes to history and physical examination, but obligatory tests such as validated symptom score questionnaire or urinalysis are not uniformly performed. Half of them would order urine culture on the initial assessment but do not think that it should be routinely performed. On the contrary, tests such as PSA, which should be performed only if the findings change the practice, are uniformly performed by all urologists. Furthermore, some tests indicated in specific circumstances such as voiding



AB = alpha blockers; 5ARI = 5 alpha reductase inhibitors; the last columns represent perceived adherence to the European Association of Urology guidelines by urologists themselves

Fig. 2. Croatian urologists' therapeutic approach to benign prostate hyperplasia/lower urinary tract symptoms.

diary in nocturia are rarely performed. Optional test uroflowmetry is initially ordered by half of the urologists. Renal function is initially rarely assessed. When it comes to therapy, alpha blockers are the first choice treatment for most of the urologists, which is consistent with practice in most countries, but surprisingly 22% of the urologists wrongly believe that they can reduce the risk of urinary retention or need of surgery. Strikingly, half of the Croatian urologists prescribe phytotherapy, although there is no specific recommendation in the guideline panel regarding this therapy[2]. The aim of the guidelines is to provide a guide and an authoritative reference on the most appropriate clinical pathway currently available. However, publication of guidelines does not necessarily influence clinical practice. Passive dissemination is generally ineffective in changing physicians' behavior[3]. Despite considerable efforts in developing and implementing evidence-based guidelines, only modest impact on clinical practice has been observed[4-7]. Some data suggest that only about half of the patients (55%) received recommended care as described in the guidelines[8]. Despite great efforts to promote and support guideline use, adherence is often suboptimal. There might be various reasons for disregarding the guidelines. In a recent study on imaging in prostate cancer, Simonato *et al.* concluded that urologists probably knew that such guidelines existed, but in everyday practice they were not consulted, probably due to limited time and pressure of work, so that guidelines do not enter common clinical practice[9]. There are only few articles in the literature on the utility of BPH/LUTS guidelines in everyday clinical practice. Auffenberg *et al.* investigated the rate of physician adherence to the American Urologic Association guidelines on the management of BPH/LUTS[10]. They systematically evaluated a total of 3494 new BPH encounters between 2008 and 2012 using electronic medical record based data in a large university urology practice. The rate of performance of recommended evaluations varied from 53.0% (documentation of IPSS) to 92.8% (performance of physical examination). The rate of performing not routinely recommended measures varied from 1.9% (urinary cytology) to 10.2% (serum creatinine measurement).

Strope *et al.* studied a cohort representing 5% of Medicare BPH/LUTS patients[11]. They found nearly 15-fold variation in the urologist's average *per* patient expenditures ($35 to $527 *per* month; median $92). Practice styles were associated with physician ($p<0.01$ all examined variables) and patient ($p<0.01$ for comorbidity, race and socioeconomic status) factors. They concluded that practice styles for BPH evaluations varied substantially according to geography, practice setting and experience, and accounted for large differences in the use of optional and not routinely recommended tests[11]. Wei *et al.* examined the evaluation and management of LUTS/BPH by physician specialty (urologist *vs.* primary care physician). They found significant differences in practice patterns between primary care physicians and urologists in the evaluation and management of LUTS/BPH[12].

Our study was limited by the inherent bias introduced by the cross sectional design. Its strength though was the fact that data were collected directly from urologists and not from medical records or insurance providers. Guidelines are at present only partially observed by Croatian urologists. The causes should be further investigated, but literature findings identify the possible ones, i.e. impossibility of implementing the recommended measures, the scope of work and working conditions, inadequate dissemination of information, as well as differences in routine practices, beliefs, costs, availability, or other[13].

Conclusion

This study provided the first analysis of Croatian urologist compliance with EAU guidelines on the management of BPH/LUTS that is based entirely on data collected directly from the practicing urologists in Croatia. Our study describes the management pattern of male LUTS suggestive of BPH and shows that the pattern does not completely comply with available guidelines and the implementation of EAU clinical guidelines in Croatia is not uniform. This should encourage more efforts to improve the awareness of the guidelines. Increased emphasis on guidelines in residency training might decrease these variations. Greater standardization could enhance patient care and reduce health care costs. Future research is necessary to determine the causes that modify adherence rates and subsequently determine whether increased adherence improves patient outcomes.

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Sažetak

KLINIČKA PRAKSA HRVATSKIH UROLOGA I USKLAĐENOST SA SMJERNICAMA U LIJEČENJU SIMPTOMA DONJEG MOKRAĆNOG TRAKTA U MUŠKARACA

I. Tomašković, M. Tomić, S. Nikles, I. Neretljak i *V. Miličić*

Cilj ovoga istraživanja bio je uvrditi kliničku praksu hrvatskih urologa u pristupu bolesnicima sa simptomima donjeg mokraćnog trakta (LUTS) i njihovo pridržavanje Smjernica Europskoga urološkog društva (EAU). Provedeno je presječno istraživanje među 51/179 (28%) hrvatskih urologa. Izradili smo upitnik koji sadrži pitanja glede poštivanja smjernica EAU. Primjena preporučenih pretraga u početnoj procjeni bolesnika s benignom hiperplazijom prostate (BPH)/LUTS varirala je od 8,0% (kreatinin i dnevnik mokrenja) do 100,0% (fizikalni pregled, antigen specifičan za prostatu (PSA) i ultrazvuk). U početnoj procjeni bolesnika s BPH/LUTS uz anamnezu i digitorektalni pregled hrvatski urolozi primjenjuju još PSA i ultrazvuk (100%). Međunarodni zbroj prostatičnih simptoma (IPSS) primjenjuje 31%, analizu sedimenta mokraće 83%, kulturu mokraće 53%, a serumski kreatinin 8% ispitanih urologa. Samo 8% urologa redovito koristi dnevnik mokrenja kod bolesnika sa simptomima nokturije. Rezultati su pokazali kako 62% hrvatskih urologa smatra da provodi dijagnostičku obradu koja je u skladu sa smjernicama EAU. U terapijskom pogledu rezultati pokazuju da 97% urologa smatra alfa blokatore lijekom prvog izbora. Inhibitori 5-alfa reduktaze (5ARI) uglavnom (84%) su propisani u kombinaciji s alfa-blokatorima, ponajprije kao kontinuirano liječenje, dok 29% prekida 5ARI nakon 1-2 godine. Polovica hrvatskih urologa rabi antimuskarinike u liječenju BPH/LUTS i preporučuje fitoterapiju u svojoj praksi. Praksa hrvatskih urologa nije u potpunosti usklađena sa smjernicama.

Ključne riječi: *Prostata, hiperplazija; Donji urinarni trakt, simptomi; Smjernice, pridržavanje*