

Improvement of Sexual Function in Men with Benign Prostatic Hyperplasia by Pharmacologic Therapy

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SUMMARY

Introduction Benign prostatic hyperplasia (BPH) causes disorders of voiding and sexual function. Pharmacologic therapy reduces symptoms of voiding thus impacting sexual function.

Objective To determine sex life status in men with BPH before and after pharmacologic treatment adapted to achieve satisfactory sexual function.

Methods We studied 117 sexually active BPH patients, not previously treated for BPH. After clinical examinations, symptoms of voiding, sexual and ejaculatory function were measured using standardized IPSS, IIEF and MSHQ-EjD questionnaires. After obtaining patients' personal opinion about the importance of their sex life, therapy was chosen and possible side effects explained. Three groups of 39 patients each were formed. The first group was treated with alpha-blocker, tamsulosin, the second with 5-alpha reductase inhibitor, finasteride, while the third group was administered a combination therapy. The complete examination procedure was repeated after 3 and 6 months of therapy.

Results The average age of patients was 61.34 ± 3.04 years. Eighty-seven percent reported that their sex life was important to a certain degree. Satisfaction with their sex life was reported by 47% of patients before treatment and by 67% of respondents 6 months after treatment. Questionnaire scores indicated general improvement of sexual function in all groups, which was statistically significant compared to baseline only in the group on tamsulosin alpha-blocker (2.95 ± 7.81 ; $p=0.028$). The overall satisfaction with sex life as a component of sexual function, improved significantly in the group on the combined therapy (0.78 ± 1.81 ; $p=0.012$).

Conclusion Before BPH treatment sexual function should be assessed and therapy customized to the patient's expectations. Side effects of drugs should be presented especially to patients who emphasize the importance of sex life. In the manifested stages of the disease overall satisfaction with sex life may be improved by combined therapy comprising 5-alpha reductase inhibitors and third generation alpha blockers. In earlier stages, BPH alpha blockers monotherapy may improve overall sexual function.

Keywords: prostate; sex life; tamsulosin; finasteride

INTRODUCTION

Benign prostatic hyperplasia (BPH) occurs in more than 50% of men over the age of 50. It leads to prostate enlargement and subvesical obstruction with the appearance of characteristic lower urinary tract symptoms (LUTS), frequently accompanied by sexual dysfunction (SD) [1]. All of these reduce the quality of patient's life [2, 3].

Longer life expectancy increases the number of people with a joint problem of LUTS and SD due to BPH [4]. Despite the decreased overall sexual functioning, the majority of elder men find their sex life an important aspect in their quality of life [5]. Due to the opinion that the symptoms of SD constitute natural consequences of aging process; most older men do not turn for help for their sexual problems and medical professionals do not particularly take into consideration these problems [6, 7].

Leading contemporary guidelines for the treatment of BPH patients do not give absolute indications for surgical treatment but recommend pharmacologic therapy with alpha-blockers (AB) and 5-alpha reductase inhibitors (5ARI), single or in combination. For the en-

larged prostate and mild symptoms with no clinical signs of obstruction the concept of Watchful Waiting (WW) is recommended [8, 9].

The application of AB is based on changing the tone of smooth muscular tissue of the bladder neck and myogenic component of BPH, which relax under their influence. In our practice, the most commonly used drug is tamsulosin, an AB of the third generation. It has a higher affinity for prostatic receptors than for the receptors of the smooth muscles of blood vessels. Its side effects include ejaculatory dysfunction (EjD), although it can improve the erectile function [10]. The application of 5ARI is based on inhibiting the enzyme by the same name and blocking the conversion of the inactive form of testosterone to its active counterpart which is responsible for the anatomic growth and hyperplasia of prostatic glandular components [11]. This group of drugs includes finasteride and dutasteride having similar clinical efficacy. Finasteride increases the risk of erectile dysfunction (ED), EjD and decreased sexual desire [12]. The combination of AB and 5ARI provides synergic action of both components, producing side effects which are a combination of side effects of the two types of drugs [13].

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Pharmacologic therapy can improve the urinary flow, relieve BPH symptoms, beneficially affect sexual function and thus improve the overall quality of life [14].

OBJECTIVE

The aim of this study was to determine the degree of SD and LUTS in BPH, and the possibility of improving sexual function through pharmacologic therapy of BPH by reducing the discomfort experienced on urination.

METHODS

At the Department of Urology of the Niš Military Hospital, 117 patients were studied in the period between February 2011 and April 2012. Patients were aged 55-65 years, and were not previously treated for BPH. They were of comparable socio-economic background and educational level, without any significant comorbidities and were sexually active. All of them were clinically examined. They underwent laboratory tests including prostate specific antigen (PSA) and free prostate specific antigen (fPSA) markers, testosterone and testosterone hormones, urine culture testing, rectal examination, urinary tract ultrasonography and uroflowmetry. The basic criterion for including the patients in the study was the presence of moderate LUTS, with the prostate tissue weighing over 30 g, PSA < 4 ng/mL. Patients with BPH complications, potential malignancy, residual urine > 200 ml, infections, bladder calculus and obstructive changes in kidneys, were excluded.

The intensity of urination symptoms was measured using the International Prostate Symptom Score (IPSS-QoL, quality of life), the degree of SD was measured by the International Index of Erectile Function (IIEF), whereas EjD was determined using the Male Sexual Health Questionnaire-Ejaculatory Dysfunction (MSHQ-EjD). Prior to treatment, the patients were asked to complete a questionnaire with the assistance of medical professionals as necessary. The average value of the intensity of voiding symptoms did not vary significantly across the examined groups.

In deciding the therapy, special attention was paid to patients who emphasized the importance of sexual functioning. They were explained the possible side effects of therapy (Table 1). Based on the results of analysis, ques-

tionnaires, and interviews with patients concerning their desired sexual function, 3 groups were formed, each consisting of 39 patients. One group was administered AB (tamsulosin 0.4 mg/day), the second group received 5ARI (finasteride 5 mg/day), while the third group was given combination therapy (tamsulosin and finasteride). Three and six months after the administration of therapy follow-up examinations were conducted which were identical to those done before the beginning of the study in terms of form and content.

AB were administered to patients with a smaller prostate and moderate to severe urinary symptoms, mostly those emphasizing the importance of sex life. 5ARI were given to patients with a larger prostate (over 40 g), and moderate to mild urinary symptoms, mostly those who did not emphasize the importance of sex life. Combination therapy was given to patients with moderate to severe symptoms with a larger prostate (over 50 g and a higher PSA) and at the highest risk of disease progression, with different degrees of interest in sex life.

The IPSS questionnaire consists of 7 questions related to discomfort experienced during urination in the past month. Four questions are related to obstructive symptoms (emptying, intermittency, straining, weakness), and three to irritative symptoms (frequency, urgency, nocturia). Each answer brings a score from 0-5 points, the maximum sum being 35, with the results being interpreted as follows: (0-7) mild symptoms, (8-19) moderate symptoms, (20-35) severe symptoms. Additional question about the quality of life determines the level of a patient's subjective experience of symptoms with answers being graded from 0 (best) to 6 (worst) [15].

The IIEF questionnaire consists of 15 questions for assessing the sexual function in the past month (with grades ranging from 0-5, the maximum sum being 75). It includes five areas: 1. erectile function (6 questions, the maximum sum being 30, with ratings ranging from very difficult to normal erections); 2. orgasmic function (2 questions, with the maximum sum of 10, ratings range from very difficult to normal orgasm); 3. sexual desire (2 questions with the maximum sum of 10, ratings ranging from complete absence of sexual desire to the sexual desire which is present all the time); 4. intercourse satisfaction (3 questions with the maximum sum of 15, ratings ranging from never satisfied to complete satisfaction); 5. overall satisfaction with sex life (2 questions with the maximum sum of 10, ratings ranging from never satisfied to completely satisfied) [16].

As the IIEF does not provide enough data for EjD, a more adequate measure is the Male Sexual Health Questionnaire-Ejaculatory Dysfunction (MSHQ-EjD) Short Form containing four questions, and scores from 0-5. Three questions relate to the properties of ejaculation: frequency (from total absence to always present), strength of ejaculation (from total absence to normal strength) and the volume of ejaculation (from total absence to normal amount). The fourth question regards the patients' concern about their ejaculatory condition (ranging from the condition without any problems to deep concerns) [17].

Table 1. Distribution of therapy according to the importance of sex life (number of patients)

Sex life	Groups of patients			
	AB	5ARI	CTh	Total
Very important	11 (28%)	3 (8%)	8 (20%)	22 (19%)
Important	19 (49%)	9 (23%)	17 (44%)	45 (38%)
Occasionally important	7 (18%)	19 (49%)	9 (23%)	35 (30%)
Not important	2 (5%)	8 (20%)	5 (13%)	15 (13%)
Total	39 (100%)	39 (100%)	39 (100%)	117 (100%)

AB – alpha-blocker; 5ARI – 5-alpha reductase inhibitors; CTh – combination therapy

Statistical analysis was performed using a 2.2.1 version of the R computer software (R Foundation for Statistical Computing, Vienna, Austria). The implied statistical significance was $p < 0.05$. The values of all scores are shown as a mean value \pm standard deviation. Two patients from the AB and the combination therapy group respectively failed to undergo check-up number 3 for objective reasons which were taken into account in the statistical analysis.

Testing the differences between the scores at the beginning of the research, and those obtained 3 and 6 months after the use of therapy was performed through the analysis of variance for repeated measuring (RM ANOVA). The comparison of changes occurring in score values obtained during the research of three therapy groups as well as the age of patients of all four groups was made using the one-way ANOVA variance analysis and the Tukey post-hoc test.

RESULTS

The average age of all respondents was 61.34 ± 3.04 . The average age by groups was as follows: the group on AB 60.69 ± 3.22 years, the group on 5ARI 61.56 ± 3.30 , and the group receiving combined therapy 61.76 ± 2.51 . There were no statistically significant age differences between compared groups.

Sex life was reported to be very important by 19% of patients; 38% found it important; it was rated as sometimes important by 30% and not important by 13%, who nevertheless engaged in sexual intercourse. All three groups experienced significant improvement in urinary symptoms (IPSS) and the quality of life (Tables 2 and 3).

According to the results of the questionnaire, the overall sexual function (IIEF) improved most in patients on combination therapy (3.24 ± 11.3), followed by the AB group (2.95 ± 7.81), while least improvement was experienced by patients receiving only 5ARI (0.64 ± 10.23). Statistically significant improvement of overall IIEF scores within groups compared to those at baseline occurred only in the group on AB ($p = 0.028$).

The results of the IIEF questionnaire regarding particular elements of sexual function were as follows:

Erectile function improved most in patients using only AB (2.46 ± 3.73 ; $p < 0.001$), followed by those on combination therapy (2.19 ± 5.14 ; $p = 0.014$), while least improvement was experienced by respondents using 5ARI (1.64 ± 4.96 ; $p = 0.046$).

The orgasmic function deteriorated in all groups. This deterioration was the worst in the group on AB (-1.03 ± 1.94 ; $p = 0.003$), followed by the group using combination therapy (-0.76 ± 2.07 ; $p = 0.033$), statistically significant for both groups, while the respondents receiving 5ARI experienced least deterioration.

During research, sexual desire improved in patients on AB (0.78 ± 1.00), while those receiving only 5ARI experienced deterioration (-0.54 ± 1.68). A statistically significant difference was confirmed between these changes ($p = 0.001$). In patients using the combination therapy there

was a slight improvement which was not significantly different from the changes developed in two other therapy groups. The only group experiencing a statically significant improvement compared to that at baseline was the group on AB ($p < 0.001$).

Intercourse satisfaction in patients on 5ARI declined (-0.13 ± 2.26), while those receiving AB experienced improvement of 0.81 ± 1.98 ; the improvement in patients on the combination therapy was 0.76 ± 2.50 . Again, the AB group was the only one experiencing a significant improvement compared to the condition at baseline ($p = 0.018$).

Overall satisfaction with sex life improved in all groups but significant improvement compared to that at baseline was only found in the group on the combination therapy ($p = 0.012$).

The results of MSHQ-EjD questionnaires are as follows:

Ejaculatory dysfunction deteriorated in all groups. In patients on AB (-4.38 ± 2.55) and those receiving the combination therapy (-3.89 ± 2.84), although there were no significant differences between these changes, they were statistically significantly higher ($p < 0.001$) than in respondents on 5ARI (-1.49 ± 2.52).

Bother score values increased most in the group on AB (1.86 ± 1.62). This change is significantly higher in comparison with the group using 5ARI (0.56 ± 1.43 ; $p = 0.001$), but not in comparison to the group on the combination therapy (1.41 ± 1.61). The increase of these score values was higher in respondents on the combination therapy than in those using 5ARI, but without any statistical significance.

On the other hand, by giving their unique personal opinion before therapy when asked whether or not they were satisfied with their sexual functioning, patients replied as follows: satisfied 47% (55 respondents); indifferent 22% (26); dissatisfied 26% (31).

After 6 months of therapy, 67% (78 patients) were satisfied. Twenty-one percent (25) found their condition unchanged without any complaints, generally those who rated their sex life as unimportant or occasionally important. Twelve percent (14) were concerned, mainly due to decreased sexual desire or EjD.

DISCUSSION

The application of pharmacologic therapy led to a statistically significant improvement in symptoms of overall sexual function (IIEF) only in the AB group compared with the condition at baseline. This can be accounted for with the quickest response to therapy, as the improvement of symptoms occurs only days after drug administration. Relaxation of smooth muscles of the bladder and prostate tissue result in a better penile blood supply which in turn improves erectile function [18]. Despite the decline of the orgasmic function and the decrease or absence of ejaculation, patients experienced a significant improvement in the intercourse satisfaction and sexual desire. Decreased ejaculation is not perceived so negatively as erectile dysfunction (ED) which all results in the improvement of the quality of life.

Table 2. Score values during examination

Group and score		Testing (mean±SD)			Comparison between testings (p)		
		Baseline	After 3 months	After 6 months	I vs. II	II vs. III	I vs. III
Alpha blocker	IPSS score-total (max 35)	13.64±3.35	9.21±2.66	7.51±2.66	<0.001*	0.001*	<0.001*
	QoL (0-6)	3.74±.75	1.79±0.89	1.32±0.85	<0.001*	0.006*	<0.001*
	IIEF score-total (max 75)	51.46±11.25	53.77±10.43	54.73±11.14	0.025*	0.667	0.028*
	Erectile function (max 30)	20.82±5.38	22.64±5.14	23.41±5.41	0.001*	0.294	<0.001*
	Orgasmic function (max 10)	8.36±1.88	7.67±1.84	7.35±1.72	0.043*	0.066	0.003*
	Sexual desire (max 10)	6.69±1.49	7.31±1.47	7.46±1.41	0.005*	0.554	<0.001*
	Intercourse satisfaction (max 15)	9.00±2.53	9.62±2.52	9.86±2.31	0.042*	0.581	0.018*
	Overall satisfaction with sex life (max 10)	6.36±1.81	6.54±1.47	6.70±1.71	0.747	0.603	0.436
	EjD-total (max 15)	10.49±2.43	7.46±2.67	6.22±2.31	<0.001*	0.001*	<0.001*
Bother (0-5)	1.51±1.14	2.74±1.09	3.30±0.97	<0.001*	0.013*	<0.001*	
5ARI	IPSS score (max 35)	16.69±2.91	10.97±2.45	7.69±2.62	<0.001*	<0.001*	<0.001*
	QoL (0-6)	4.10±0.64	1.97±0.84	1.26±0.79	<0.001*	<0.001*	<0.001*
	IIEF score-total (max 75)	47.85±11.95	49.49±10.04	48.49±10.68	0.217	0.443	0.698
	Erectile function (max 30)	18.82±5.87	20.08±5.21	20.46±5.24	0.051	0.528	0.046*
	Orgasmic function (max 10)	7.92±2.02	8.00±1.45	7.38±2.07	0.760	0.010	0.053
	Sexual desire (max 10)	6.56±1.52	6.41±1.50	6.03±1.46	0.504	0.141	0.053
	Intercourse satisfaction (max 15)	8.64±2.36	8.74±1.97	8.51±2.00	0.775	0.373	0.725
	Overall satisfaction with sex life (max 10)	5.90±1.89	6.23±1.66	6.10±1.31	0.217	0.585	0.440
	EjD-total (max 15)	9.26±2.68	8.49±2.13	7.77±2.50	0.004*	0.035*	0.001*
Bother (0-5)	1.97±1.25	2.26±1.02	2.54±0.97	0.070	0.155	0.018*	
Combination therapy	IPSS score (max 35)	19.82±3.09	12.05±2.65	8.89±2.60	<0.001*	<0.001*	<0.001*
	QoL (0-6)	4.33±0.70	2.10±1.02	1.41±0.86	<0.001*	<0.001*	<0.001*
	IIEF score-total (max 75)	41.46±12.90	42.41±11.94	44.35±12.76	0.347	0.192	0.089
	Erectile function (max 30)	16.74±6.30	17.51±5.64	18.70±5.99	0.167	0.063	0.014*
	Orgasmic function (max 10)	6.79±2.25	6.10±2.09	5.97±2.32	0.048*	0.650	0.033*
	Sexual desire (max 10)	5.92±1.68	6.10±1.55	6.19±1.60	0.382	0.918	0.368
	Intercourse satisfaction (max 15)	7.10±2.36	7.38±2.36	7.81±2.40	0.268	0.306	0.074
	Overall satisfaction with sex life (max 10)	4.87±1.72	5.21±1.79	5.65±1.80	0.218	0.016*	0.012*
	EjD-total (max 15)	8.56±3.08	5.77±2.75	4.59±2.50	<0.001*	<0.001*	<0.001*
Bother (0-5)	1.85±1.25	2.92±0.93	3.32±1.08	<0.001*	0.023*	<0.001*	

* p<0.05

SD – standard deviation; IPSS – International Prostate Symptom Score; IIEF – International Index of Erectile Function; QoL – Quality of Life; EjD – ejaculatory dysfunction; 5ARI – 5-alpha reductase inhibitors

Table 3. Comparison of score changes in the period between the first and third testing

Score	Groups (Mean±SD)			Comparison between groups (p)		
	AB	5ARI	CTh	I vs. II	I vs. III	II vs. III
IPSS score-total (max 35)	-5.84±3.08	-9.00±2.84	-10.95±3.19	<0.001*	<0.001*	0.017*
QoL (0-6)	-2.32±1.00	-2.85±1.01	-2.95±0.97	0.062	0.023*	0.900
IIEF score-total (max 75)	2.95±7.81	0.64±10.23	3.24±11.30	0.569	0.997	0.488
Erectile function (max 30)	2.46±3.73	1.64±4.96	2.19±5.14	0.725	0.966	0.865
Orgasmic function (max 10)	-1.03±1.94	-0.54±1.68	-0.76±2.07	0.504	0.814	0.871
Sexual desire (max 10)	0.78±1.00	-0.54±1.68	0.27±1.81	0.001*	0.328	0.062
Intercourse satisfaction (max 15)	0.81±1.98	-0.13±2.26	0.76±2.50	0.170	0.994	0.207
Overall satisfaction with sex life (max 10)	0.22±1.67	0.21±1.64	0.78±1.81	0.999	0.329	0.306
EjD-total (max 15)	-4.38±2.55	-1.49±2.52	-3.89±2.84	<0.001*	0.708	<0.001*
Bother (0-5)	1.86±1.62	0.56±1.43	1.41±1.61	0.001*	0.430	0.052

* p<0.05

The latest study by Orabi et al. [19] points out that there are different opinions on the ability of AB therapy on the result in the improvement of sexual function as it is difficult to determine whether this kind of treatment improves LUTS and consequently ED, or whether the treatment effects each process independently. Kumar et al. [20] confirm the improvement in sexual function as a result of AB use. Kobayashi et al. [21] point out that the concerns

over side effects of AB therapy are little as the orgasm is preserved despite decreased ejaculation.

The effects of 5ARI, despite causing significant improvement of urinary symptoms which led to a better quality of life, did not cause any significant changes in overall sexual function (IIEF). According to our findings, unlike the findings of some other studies, erectile function was the only one to improve. Still, due to the declined

sexual desire, and consequentially a decreased frequency of sexual intercourse and orgasmic function, no changes occurred either in the intercourse satisfaction or in the overall satisfaction with sex life.

Hellstrom et al. [22] emphasize that the exact mechanism of 5ARI action leading to sexual dysfunction with the frequency of sexual side-effects declining with the prolonged use of therapy is not known. The PLESS study also shows that men treated with finasteride experienced sexual side effects more frequently during the first year of therapy [23]. Despite potential undesirable effects on sexual function, the latest study by Parsons et al. [24] recommends the use of finasteride in the prevention of clinical BPH and prostate cancer in older men.

Combination therapy groups compared to monotherapy groups showed a significant improvement of overall sex life (IIEF) and significant improvement of urinary symptoms. It provides the synergic effect of both components with the side effects being the combination of side effects of each type of drug. Compared to the condition at baseline, erectile function and overall satisfaction with sex life significantly improved. Despite the significantly lower orgasmic function, the dominantly positive effect of other elements of sexual function resulted in the significant improvement in the quality of life.

The latest Combat study on therapy with tamsulosin and dutasteride shows that the overall side effects occur significantly more frequently during combination therapy than monotherapy. No significant difference in the frequency of sexual side effects occurrence between the two available 5ARI (finasteride and dutasteride) were found. Comparing the effects of monotherapy with AB and 5ARI, the combination therapy leads to a greater improvement in LUTS and a better prevention of disease progression [25].

Most of LUTS in BPH is subjective, whereby the degree of the severity of symptoms is significant in choosing the method of treatment [26]. A certain number of patients are well-adapted to a greater discomfort, while others with minimal symptoms are highly upset and actively seek treatment. During examination, it is important to get information not only about the symptoms of voiding but also about sexual symptoms [27]. When deciding on the treatment, providing a careful explanation of possible side effects of drugs on sexual function, with a moderate positive suggestion, helps patients accept these side effects more readily and do not perceive them as necessarily negative. By stressing the expected beneficial outcomes of therapy, the placebo effect is somewhat emphasized, and indicates the significance which the power of autosuggestion has on patients' expectations in believing that their condition will improve. Patients should be included in making a de-

cision about the treatment process, keeping in mind that the risk is more significant if a younger man is concerned [28]. A placebo effect, which aggravates results, should be prevented in patients who fail to obtain enough information themselves. Sometimes a significant improvement in voiding is identified with a better sex life, while the results of questionnaires show no change or even deterioration.

A general assessment on whether or not a person is satisfied with their sex life after treatment, can be significantly more favorable than the results of the questionnaire, i.e. it does not reflect the real condition. The questionnaires with specific questions provide detailed analysis of all aspects of sexual life and give a more accurate result of current condition. At the same time a personal opinion on what makes one person happy but not the other one should be taken into account. Even those to whom their sex life was sometimes important or not that important, were satisfied with the administered therapy. So long as they function well an occasional sexual intercourse makes them very happy. Through the selection of patients based on the criteria of the importance of their sex life and the acknowledgement of clinical findings and side effects we achieved an overall improvement in sex life for most patients, with the improvement of voiding symptoms and increase of the quality of life. Standardized questionnaires on sexual function can be used to measure the intensity of symptoms, select patients for appropriate pharmacologic treatment and subsequently assess the results of treatment [29].

Sex life can also significantly be improved by using drugs from the phosphodiesterase-5 (PDE5) inhibitors group, which were not used in this study, as these drugs are currently less financially affordable for most patients in our country.

CONCLUSION

Each examination concerning BPH should determine the level of the patient's urinary symptoms and sexual function status using standardized questionnaires. Depending on the test results and interest in sexual function, therapy should be chosen and possible side effects explained. Overall satisfaction with sex life can be achieved in manifested stage of illness with combined therapy comprising of 5-alpha reductase inhibitors and a third generation alpha blocker. In earlier stages, alpha blockers monotherapy may improve overall sexual function. By improving voiding symptoms, preventing disease progression, and improving sexual function, the effects of pharmacologic treatment of BPH are more complete.

REFERENCES

1. Roehrborn CG. Benign Prostate Hyperplasia. In: Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA, editors. *Campbell-Walsh Urology*. 10th ed. Philadelphia: WB Saunders; 2012. p.2570-2610.
2. Robertson C, Link CL, Onel E, Mazzetta C, Keech M, Hobbs R, et al. The impact of lower urinary tract symptoms and comorbidities on quality of life: the BACH and UREPIK studies. *BJU Int*. 2007; 99:347-54.
3. Bašić D. Uticaj poremećaja muške seksualne funkcije na kvalitet života. In: Bašić D, Hadži-Djokić J, Austoni E, editors. *Muška seksualna funkcija i poremećaji*. Niš: Medicinski fakultet Univerziteta u Nišu; 2012. p.323-26.
4. Mullins C, Kaplan S. A new vision for the study of benign prostate disease: the NIDDK prostate research strategic plan. *J Urol*. 2009; 181:963-71.
5. Cornu JN, Cussenot O, Haab F, Lukacs B. A widespread population study of actual medical management of lower urinary tract symptoms related to benign prostatic hyperplasia across Europe and beyond official clinical guidelines. *Eur Urol*. 2010; 58:450-6.
6. Seftel S, Rosen R, Kuritzky L. Physician perceptions of sexual dysfunction related to benign prostatic hyperplasia (BPH) symptoms and sexual side effects related to BPH medications. *Int J Impot Res*. 2007; 19:386-92.
7. Antić S, Djindjić B. Uticaj starenja i sistemskih bolesti na seksualnu funkciju muškarca. In: Bašić D, Hadži-Djokić J, Austoni E, editors. *Muška seksualna funkcija i poremećaji*. Niš: Medicinski fakultet Univerziteta u Nišu; 2012. p.137-45.
8. Oelke M, Bachmann A, Descoteaux A, Emberton M, Gravas S, Michel MC, et al; European Association of Urology. EAU guidelines on the treatment and follow-up of non-neurogenic male lower urinary tract symptoms including benign prostatic obstruction. *Eur Urol*. 2013; 64(1):118-40.
9. McVary KT, Roehrborn CG, Avins AL, Barry MJ, Bruskewitz RC, Donnell RF, et al. Update on AUA guideline on the management of benign prostatic hyperplasia. *J Urol*. 2011; 185(5):1793-803.
10. Nickel JC, Sander S, Moon TD. A meta-analysis of the vascular-related safety profile and efficacy of α -adrenergic blockers for symptoms related to benign prostatic hyperplasia. *Int J Clin Pract*. 2008; 62(10):1547-59.
11. Hamilton RJ, Andriole GL, Freedland SJ. 5 α -reductase inhibitors: preventing the treatable. *Eur Urol*. 2012; 62:242-5.
12. Tacklind J, Fink HA, MacDonald R, Rutks I, Wilt TJ. Finasteride for benign prostatic hyperplasia. *Cochrane Database Syst Rev*. 2010; (10):CD006015.
13. Abrams P, Chapple C, Khoury S, Roehrborn C, de la Rosette J; International Scientific Committee. Evaluation and treatment of lower urinary tract symptoms in older men. *J Urol*. 2009; 181(4):1779-87.
14. Gacci M, Eardley I, Giuliano F, Hatzichristou D, Kaplan SA, Maggi M, et al. Critical analysis of the relationship between sexual dysfunctions and lower urinary tract symptoms due to benign prostatic hyperplasia. *Eur Urol*. 2011; 60:809-25.
15. Barry MJ, Fowler FJ Jr, O'Leary MP, Bruskewitz RC, Holtgrewe HL, Mebust WK, et al. The American Urological Association symptom index for benign prostatic hyperplasia. The Measurement Committee of the American Urological Association. *J Urol*. 1992; 148(5):1549-57.
16. Rosen RC, Riley A, Wagner G, Osterloh IH, Kirkpatrick J, Mishra A. The international index of erectile function (IIEF): a multidimensional scale for assessment of erectile dysfunction. *Urology*. 1997; 49:822-30.
17. Rosen RC, Catania JA, Althof SE, Pollack LM, O'Leary M, Seftel AD, et al. Development and validation of four-item version of the Male Sexual Health Questionnaire to assess ejaculatory dysfunction. *Urology*. 2007; 69:805-9.
18. Barendrecht MM, Abrams P, Schumacher H, de la Rosette JJ, Michel MC. Do α 1-adrenoceptor antagonists improve lower urinary tract symptoms by reducing bladder outlet resistance? *Neurourol Urodyn*. 2008; 27(3):226-30.
19. Orabi H, Albersen M, Lue TF. Association of lower urinary tract symptoms and erectile dysfunction. *Int J Impot Res*. 2011; 23(3):99-108.
20. Kumar R, Nehra A, Jacobson DJ, McGree ME, Gades NM, Lieber MM, et al. Alpha-blocker use is associated with decreased risk of sexual dysfunction. *Urology*. 2009; 74:82-8.
21. Kobayashi K, Masumori N, Kato R, Hisasue S, Furuya R, Tsukamoto T. Orgasm is preserved regardless of ejaculatory dysfunction with selective α 1A-blocker administration. *Int J Imp Res*. 2009; 21:306-10.
22. Hellstrom WJG, Giuliano F, Rosen RC. Ejaculatory dysfunction and its association with lower urinary tract symptoms of benign prostatic hyperplasia and BPH treatment. *Urology*. 2009; 74:15-21.
23. Paick SH, Meehan A, Lee M, Penson DF, Wessells H. The relationship among lower urinary tract symptoms, prostate specific antigen and erectile dysfunction in men with benign prostatic hyperplasia: results from the PROSCAR long-term efficacy and safety study. *J Urol*. 2005; 173:903-7.
24. Parsons JK, Schenk JM, Arnold KB, Messer K, Till C, Thompson IM, et al. Finasteride reduces the risk of incident clinical benign prostatic hyperplasia. *Eur Urol*. 2012; 62:234-41.
25. Roehrborn CG, Siami P, Barkin J, Damião R, Major-Walker K, Nandy I, et al; CombAT Study Group. The effects of combination therapy with dutasteride and tamsulosin on clinical outcomes in men with symptomatic benign prostatic hyperplasia: 4-year results from the CombAT study. *Eur Urol*. 2010; 57(1):123-31.
26. Maruschke M, Protzel C, Hakenberg OW. How to make the diagnosis of benign prostatic disease. *Eur Urol*. 2009; Suppl 8:490-5.
27. Fourcade RO, Thérêt N, Taïeb C. Profile and management of patients treated for the first time for lower urinary tract symptoms/benign prostatic hyperplasia in four European Countries. *BJU Int*. 2008; 101:1111-8.
28. Mirone V, Sessa A, Giuliano F, Berges R, Kirby M, Moncada I. Current benign prostatic hyperplasia treatment Impact on sexual function and management of related sexual adverse events. *Int J Clin Pract*. 2011; 65(9):1005-13.
29. Dons RF, Wians FH. Appendices. In: *Endocrine and Metabolic Disorders Clinical Lab Testing Manual*. 4th ed. Boca Raton: CRC Press; 2009. p.553-73.

Побољшање сексуалне функције мушкараца са бенигном хиперплазијом простате медикаментном терапијом

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КРАТАК САДРЖАЈ

Увод Бенигна хиперплазија простате (БХП) проузрокује поремећаје и мокрења и сексуалне функције. Медикаментна терапија смањује тегобе при мокрењу, при чему утиче на сексуалну функцију.

Циљ рада Циљ истраживања је био да се утврди стање сексуалног живота мушкараца са БХП пре и после коришћења медикаментне терапије, прилагођене постизању задовољавајуће сексуалне функције.

Методе рада Испитано је 117 сексуално активних мушкараца са БХП који раније нису лечени због БХП. Након клиничког испитивања, симптоми мокрења, сексуалне и ејакулационе функције мерени су попуњавањем стандардизованих упитника *IPSS*, *IIEF* и *MSHQ-EjD*. Уз личну оцену болесника о важности свог сексуалног живота, терапија је одређивана уз објашњење могућих споредних ефеката. Образоване су три групе са по 39 испитаника. Једна група је у терапији примењивала алфа-блокатор тамсулозин, друга група инхибитор 5-алфа редуктазе финастерид, а трећа група болесника комбиновану терапију. Комплетан поступак испитивања понављан је након три месеца и шест месеци лечења.

Резултати Просечна старост испитаника била је 61,34±3,04

године. О томе да им је сексуални живот у неком степену важан изјаснило се 87% испитаника. Својом сексуалном функцијом пре терапије било је задовољно 47% испитаника, а након шест месеци 67%. Према резултатима упитника, сексуална функција у целини је побољшана у свим групама, али статистички значајно у односу на почетак лечења у групи болесника који су примали алфа-блокатор тамсулозин (2,95±7,81; $p=0,028$). Укупно задовољство сексуалним животом значајно је побољшано у групи болесника који су примали комбиновану терапију (0,78±1,81; $p=0,012$).

Закључак Пре почетка лечења БХП требало би оценити сексуалну функцију сваког болесника. Терапију би требало прилагодити очекивањима болесника, а важно је и предочити им споредне ефекте лекова, поготову онима који наглашавају важност сексуалног живота. Код израженог стадијума болести укупно задовољство сексуалним животом се може побољшати комбинованом терапијом инхибитором 5-алфа редуктазе и алфа-блокатором треће генерације. Код блажег стадијума БХП монотерапија алфа-блокаторима може побољшати укупну сексуалну функцију.

Кључне речи: простата; сексуални живот; тамсулозин; финастерид