

UDC: 616.65-006.03-089.168-085:615.33
[https://doi.org/10.32345/USMYJ.3\(141\).2023.36-43](https://doi.org/10.32345/USMYJ.3(141).2023.36-43)

Received: April 03, 2022
Accepted: June 25, 2023

Comparative evaluation of the results of antibiotic prophylaxis of early postoperative complications of transurethral resection of the prostate in patients with benign prostatic hyperplasia

Vlasyk Marharyta¹, Nikitin Oleg¹, Nasheda Serhiy², Samchuk Pavlo¹

¹Urology department, Bogomolets National Medical University, Kyiv, Ukraine

²Department of Surgery, International European University, Kyiv, Ukraine

Address for correspondence:

Vlasyk Marharyta

E-mail: ritavlaasyk@gmail.com

Abstract: *in Ukraine in 2021, the incidence of benign prostatic hyperplasia (BPH) was 321.6 per 100,000 population. Almost 17,000 operations on prostate gland have been performed, a significant proportion of which are transurethral resection (TURP). It has been proven that the most frequent early complications after surgical interventions on the prostate gland are the development of an acute inflammatory process in the genitourinary organs, bleeding from the area of there removed hyperplastic tissue of the prostate gland. Inflammatory diseases of the urogenital tract in men are characterized by a variety of etiological agents, the presence of mixed infections, and the growing importance of pathogens of sexually transmitted diseases. To improve the results of TURP in patients with BPH complicated by acute urinary retention by optimizing antibacterial prophylaxis of postoperative complications in the early postoperative period. The study is based on the results of the analysis of surgical treatment of 179 patients with BPH complicated by acute urinary retention who underwent TURP. The age of the patients varied from 51 to 84 years, the average age was 64.9±5.1 years. Patients were divided into two groups: Group I – 85 operated patients who were prescribed ceftriaxone (1.0 parenterally once a day) in the early postoperative period; Group II – 94 patients, in the early postoperative period got levofloxacin (500 mg IV for 3-5 days with subsequent transition to oral administration, once a day). The analysis of the obtained data established that in the early postoperative period 43 (24.1%) patients had complications. The most frequent complication was long-term macrohematuria, which was observed in 23 (12.9%) patients. Exacerbation of chronic pyelonephritis occurred in 13 (7.3%) operated patients, acute urethritis developed in 7 (3.9%) patients, acute orchiepididymitis was observed in 9 (5.0%) patients. The over all frequency of complications in patients with BPH who received levofloxacin in the early postoperative period was statistically significantly lower than in patients who were prescribed ceftriaxone. In particular, the use of levofloxacin in patients of the II group, with the aim of antibiotic prophylaxis of postoperative complications after TURP, made it possible to reduce the frequency of the latter by 60% (1.6 times), in relation to the patients of the I group. The use of levofloxacin for the prevention of early postoperative complications after TURP in patients with BPH complicated by acute urinary retention improves the results of surgical treatment by reducing the frequency of complications in the postoperative period by 60%.*

Keywords: [antibiotic prophylaxis](#), [benign prostatic hyperplasia](#), [postoperative complications](#), [prostate](#), [transurethral resection of prostate](#).

Introduction

In recent decades, in connection with the rapid development of the latest technologies, there has been an active introduction of new and improvement of already existing methods of diagnosis and treatment in modern medicine and in urology in particular. As a result, there is a demographic trend of population growth at the expense of people of older age groups, the rate of which significantly exceeds the growth of the population as a whole. This fact leads to an increase in the medical and social importance of a number of common diseases.

Benign prostatic hyperplasia (BPH) is one of the most common diseases in elderly men. At the age of over 40, BPH is found in 30–40% of men, and its prevalence increases to 70–80% in people over 80 years of age. However, BPH is a purely histological definition and should be distinguished from benign prostatic hyperplasia, which describes an enlarged prostate, and lower urinary tract symptoms (LUTS), which usually lead to medical attention. To date, they are best quantified using validated questionnaires such as the International Prostate Symptom Score (IPSS) or the American Urological Association (AUA) Symptom Score. Urinary tract infections (UTIs) in elderly men are mainly caused by urodynamic changes in the lower urinary tract, such as benign prostatic obstruction and detrusor overactivity or underactivity.

BPH is one of the most common diseases of elderly men, the prevalence of which is progressively increasing. The etiology of the disease remains unexplored.

In Ukraine, as in most European countries, there is a general ageing trend of the population. Thus, according to WHO data, there is a significant increase in the population at the expense of people over 60 years of age, the rate of which significantly exceeds the growth of the population as a whole. In parallel with the increase in the occurrence of BPH, the frequency of the development of SNS (sacral nerve stimulation) also increases with age. The prevalence of moderate/severe SNS (IPSS > 7) is about 20% in the 5th, 30% in the 6th, and 40% in the 8th decade of life. Due to demographic changes, this number will significantly increase to approximately 500,000 in the next twenty years, which also indicates its socio-economic

importance. The high prevalence of BPH in elderly and senile men determines the relevance of diagnosis and treatment of this disease.

It has been established that 40–50% of men aged 50–64 years have certain symptoms caused by BPH. In other countries, this pathology is also widespread. For example, in the USA, the incidence of BPH reaches 34.4 per 1,000 people, and 6.4 million visits to the doctor are registered annually; more than 300,000 surgical interventions are performed with a total cost of more than 2 billion dollars.

In 2021, in Ukraine, the incidence of BPH was 321.6 per 100,000 population. Almost 17,000 prostate operations have been performed; a significant proportion of which is transurethral resection of the prostate (TURP).

Improvement of surgical methods of treatment and careful selection of patients with determination of the optimal ways of intervention, unfortunately, does not always give the expected result, and does not allow avoiding complications in the postoperative period. The frequency of complications that aggravate the course of the disease, especially in connection with the operative treatment of patients, remains high, despite the long-standing, multifaceted and large-scale prevention of their development. It is known that the most frequent early complications during surgical interventions for BPH are the development of an acute inflammatory process in the genitourinary organs, bleeding from the "bed" of removed hyperplastic prostate tissue.

It has been proven that the development of early postoperative complications after surgical treatment of BPH is most often associated with the presence of a chronic urinary infection. The frequency of chronic prostatitis with BPH, according to the results of the study of intraoperatively removed prostate tissue, is 70–100%. Infectious-inflammatory diseases of the urogenital tract in men are characterized by a variety of etiological agents, the presence of mixed infections, and the growing importance of pathogens of sexually transmitted diseases (STDs).

The results of research are of interest, according to which 55% of men and 70% of women over the age of 60 have laboratory markers of sexually transmitted diseases pathogens, both transferred in the past.

Observations of a chronic inflammatory process, which is accompanied by histological changes of BPH in samples of removed adenomatous tissue, led to the suspicion that inflammation plays a role in the development of BPH, as well as, lower urinary tract symptoms. Local inflammation can be triggered by a viral or bacterial infection, leading to the secretion of cytokines, chemokines, and growth factors involved in the inflammatory response with subsequent growth of prostate epithelial and stromal cells. It has been suggested that the inflammatory response is continued by the release of prostate autoantigens after tissue damage, leading to sensitization of the immune system and initiation of autoimmune reactions.

Prostate stromal cells, which activate CD4+ lymphocytes and proinflammatory cytokines and chemokines such as interleukin-8 of stromal origin, are significant factors in this process [9]. Prostatitis is associated with overall clinical progression, and an increased risk of urinary retention and the need for surgical intervention. In addition, a positive association between high plasma C-reactive protein levels and the development of moderate and severe lower urinary tract symptoms has been reported.

It was also established that every second patient with BPH requiring surgical treatment is infected with one or another STD pathogen, and half of the infected patients have a mixed infection. The chronic inflammatory process in the prostate gland and urethra in patients with BPH is significantly more often caused by STD pathogens (61%) compared to opportunistic pathogens (42%). The presence of a chronic inflammatory process in the prostate gland and/or urethra reliably increases the manifestations of LUTS in patients of this group.

It is known that in BPH patients infected with STD pathogens, the frequency of early postoperative complications from the genitourinary organs is almost three times higher than in uninfected patients, namely: infectious and inflammatory complications occur 2.5 times, and long-term or profuse macrohematuria – 4 times more often.

Despite the fact that recently, conservative methods of treatment of BPH are becoming more and more popular, the surgical method remains the main one.

The era of surgical treatment of this category of patients was opened in the 19th century by the method of open enucleation of prostate adenoma.

Electrosurgery in urological practice was first used in the 19th century by E. Bottini, who used a galvano-caustic battery to destroy prostate tissue. Modern TURP was first described by M. Stern in 1926.

Nowadays, there are many surgical methods of treating patients with BPH, both invasive (prostatectomy) and minimally invasive (laser vaporization, transurethral resection of the prostate gland, laparoscopic prostatectomy), methods of electrophysical and temperature exposure, stenting.

Postoperative results of treatment of patients with BPH: terms of inpatient and outpatient periods, number and complexity of postoperative complications, terms of patient rehabilitation, postoperative mortality, largely depend on the choice of surgical method of operative treatment.

All over the world, TURP is recognized as the gold standard for surgical treatment of BPH. While TURP is mainly used for small to medium prostate volumes (up to 80 ml), large hyperplasia is removed through open surgery. However, transvesical and extralobular prostatectomies are used less frequently nowadays, as transurethral resection methods are becoming more and more common.

Antibiotic prophylaxis of postoperative complications in modern surgery and urology is an almost mandatory element of patient treatment. During any operation, even with perfect observance of all the rules of asepsis and antiseptics, by the end of the operation, in 80-90% of cases, microorganisms enter the wound. Even catheterization of the urinary bladder in 40-60% leads to cross-insemination of the urinary tract.

The goal of antibiotic prophylaxis is to create such a concentration of the drug in blood and tissues that stops the infectious process in the initial phase of development, or minimizes the development of infectious complications in the postoperative period. No less important for the antibiotic prophylaxis of complications is the choice of an effective drug.

Aim

To improve the results of TURP in patients with BPH complicated by acute urinary

retention by optimizing antibacterial prophylaxis of postoperative complications in the early postoperative period.

Materials and methods

The study is based on the results of the analysis of the surgical treatment of 179 patients with BPH complicated by acute urinary retention who underwent TURP. The age of the patients varied from 51 to 84 years, the average age was 64.9 ± 5.1 years.

The urological comprehensive examination in the preoperative period of all patients was carried out under the Order of the Ministry of Health of Ukraine No. 135 dated 04.03.2009 "On the approval of the clinical protocol for providing medical care to patients with benign prostatic hyperplasia".

To characterize the course of the early postoperative period in patients, the following complications were taken into account: exacerbation of chronic pyelonephritis, acute urethritis, acute orchiepididymitis, and long-term macrohematuria.

Patients were divided into two groups:

Group I – 85 operated patients that were prescribed ceftriaxone (1.0 parenterally once a day) in the early postoperative period;

Group II – 94 patients, in the early postoperative period, received levofloxacin (500 mg IV drip for 3-5 days with subsequent transition to oral medication, once a day), antibacterial therapy is prescribed according to protocol recommendations for users of lower urinary tract infection.

The probability of differences was assessed using the Student's t-test. The difference between the compared values was considered probable at $p < 0.05$.

Results and discussion

The analysis of the obtained data established that in the early postoperative period 43 (24.1%) patients had complications. 34 (19.0%) operated patients developed one complication, and 9 (5.1%) operated patients had 2 complications.

The structure of postoperative complications is presented in fig. 1.

The most frequent complication was long-term macrohematuria, which was observed in 23 (12.9%) patients. Exacerbation of chronic pyelonephritis occurred in 13 (7.3%) operated

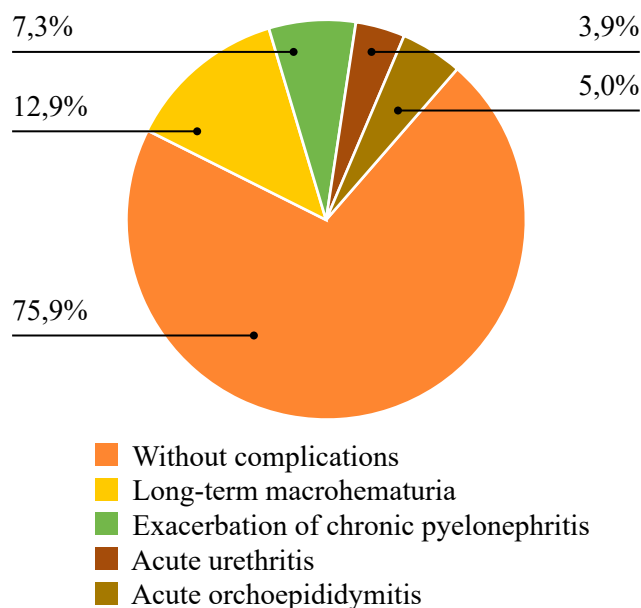


Fig. 1. The structure of early postoperative complications in patients with BPH after TURP

patients, acute urethritis developed in 7 (3.9%) patients, and acute orchiepididymitis was observed in 9 (5.0%) patients.

Depending on the antibacterial prophylaxis received, in the early postoperative period, after TURP, the frequency of complications was analyzed.

The frequency of early postoperative complications depending on the antibacterial therapy received.

The data shown in Table 1 indicate that, in general, infectious-inflammatory complications and, primarily, acute urethritis, exacerbation of chronic pyelonephritis, as well as long-term or profuse macrohematuria were observed more often among those who received ceftriaxone, but the difference was not statistically significant, probably due to low overall frequency of complications. But the overall frequency of complications in patients with BPH who received levofloxacin in the early postoperative period was statistically significantly lower than in patients that were prescribed ceftriaxone. In particular, the use of levofloxacin in patients of the II group, with the aim of antibiotic prophylaxis of postoperative complications after TURP, made it possible to reduce the frequency of the latter by 60% (1.6 times), concerning the patients of the I group.

Table 1.

Complications	Number of patients						p
	I group (n=85)			II group (n=94)			
	abs. n	%	±SE	abs.n	%	±SE	
Acute orchiepididymitis	4	4,7	±2,3	5	5,3	±2,3	>0,05
Acute urethritis	5	5,9	±2,6	2	2,1	±1,5	>0,05
Exacerbation of chronic pyelonephritis	8	9,4	±3,2	5	5,3	±4,8	>0,05
All infectious and inflammatory	17	20,0	±4,3	12	12,7	±3,4	>0,05
Prolonged or profuse macrohematuria	14	16,5	±4,0	9	9,6	±3,0	>0,05
Total	31	36,5	±5,2	21	22,3	±4,3	<0,05

Conclusions

The following conclusions can be drawn, taking into account the results of the conducted research.

The frequency of development of complications, in the early postoperative period, after TURP for BPH, complicated by acute urinary retention, largely depends on the use of an effective antibacterial drug.

The appointment of levofloxacin, in order to prevent the development of complications in the early postoperative period, in patients with BPH complicated by acute urinary retention, after TURP, improves the results of surgical treatment by 1.6 times.

Financing

The study was conducted on the basis of the department of urology at the expense of researchers.

Conflict of interest

The authors declare no conflicts of interest.

Consent of publication

Authors have obtained consent for publication of this work from all patients relevant to this manuscript.

ORCID ID and Author contributions

[0009-0009-3962-1246](https://orcid.org/0009-0009-3962-1246) (A, B, C, D) Marharyta Vlasyk

[0000-0002-6563-7008](https://orcid.org/0000-0002-6563-7008) (A, B, C, D, F) Oleg Nikitin

[0000-0002-0617-1885](https://orcid.org/0000-0002-0617-1885) (B, C, D, E) Serhyi Nasheda

[0000-0001-6164-8634](https://orcid.org/0000-0001-6164-8634) (A, B, C, D, E, F) Pavlo Samchuk

A – Research concept and design. B – Collection and/or assembly or data. C – Data analysis and interpretation. D – Writing the article. E – Clinical revision of the article. F – Final approval of the article

REFERENCES

- A. L. Lewis, G. J. Young, P. Abrams, et al., “Clinical and patient-reported outcome measures in men referred for consideration of surgery to treat lower urinary tract symptoms: baseline results and diagnostic findings of the urodynamics for prostate surgery trial; randomized evaluation of assessment methods (UPSTREAM)”, *EurUrol- Focus*, 5, pp. 340–50, 2019.
- A. Sebastianelli, M. Gacci, “Current status of the relationship between metabolic syndrome and lower urinary tract symptoms”, *EurUrolFocus*, 4(1), pp. 25–7, 2018 Jan.
- Aiken L.H., Sermeus W., Van den Heede K. et al. (2012). Patient safety, satisfaction, and quality of hospital care: cross sectional surveys of nurses and patients in 12 countries in Europe and the United States. *BMJ*. 20:344 – 347.
- Alanazi A.B., Alshalan A.M., Alanazi O.A. et al. (2017). Epidemiology of senile prostatic enlargement among elderly men in Arar, Kingdom of Saudi Arabia. *Electron Physician*. Sep 25;9(9):5349 – 5353.
- Belov V.Yu., Antonian I.M., Hegliuk O.N., Poliakova N.B. (2016). The quality of life of patients as a result of various methods of treatment of benign prostatic hyperplasia. *Urology*. 4(79), Pp.115 – 116.
- Bohnen A.M., Groeneveld F.P., Bosch J.L. (2007). Serum prostate-specific antigen as a predictor of prostate volume in the community: the Krimpen study. *European Urology*. 51: 1645 – 52; discussion 52 – 3.
- Bondarenko Yu. M. (2007). Functional complications of the lower urinary tract and their correction during surgical treatment of patients with benign prostatic hyperplasia: Abstract of the dissertation of Candidate of medical sciences.: 14.01.06 / Yu. M. Bondarenko. K., – 19 p.

Carvalho-Dias E., Miranda A., Martinho O., Mota P., Costa A., Nogueira-Silva C., et al. (2017) Nov. Serotonin regulates prostate growth through androgen receptor modulation. *SciRep.* 7(1): 154-28.

E. Carvalho-Dias, A. Miranda, O. Martinho, P. Mota, A. Costa, C. Nogueira-Silva, et al., "Serotonin regulates prostate growth through androgen receptor modulation", *Sci Rep.*, 7(1), 15428, 2017 Nov.

Egan K. B. (2016). The epidemiology of benign prostatic hyperplasia associated with lower urinary tract symptoms: prevalence and incidence rates. *UrolClin North Am*; 43: 289 – 97.

F. Li, L.E. Pascal, J. Zhou, Y. Zhou, K. Wang, A.V. Parwani, et al. "BCL-2 and BCL-XL expression are down-regulated in benign prostatic hyperplasia nodules and not affected by finasteride and/or celecoxib", *Am. J. ClinExp. Urol.*, 6(1), pp.1–10, 2018 Feb.

Gacci M., Corona G., Vignozzi L., et al. (2015). Metabolic syndrome and benign prostatic enlargement: a systematic review and meta-analysis. *BJU Int.* 115: 24-31.

Gravas S. European Association of Urology Guidelines on management of non-neurogenic male lower urinary tract symptoms (LUTS) – update March 2021.

Gravas S., Cornu J.N., Drake M.J., Gacci M., Gratzke C., Herrmann T.R.W, et al. Limited update March (2018). Management of non-neurogenic male lower urinary tract symptoms (LUTS). Available from: <https://uroweb.org/wp-content/uploads/EAU-Guidelineson-the-Management-of-Non-neurogenic-Male-LUTS-2018-large-text.pdf>.

Gravas S., Samarinas M., Zacharouli K. et al. *World J Urol.* 2019; 37: 539.

Hrytsai V.S. (2010). The influence of infection of the prostate gland with pathogens of different taxonomic origins on the course of the disease and the results of surgical treatment of patients with benign prostatic hyperplasia: Abstract of the dissertation of Candidate of medical sciences. Kyiv.

Kim E.H. The use of 5-alpha reductase inhibitors in the treatment of benign prostatic hyperplasia. *Asian J Urol.* 2018 Jan; 5(1): 28-32. doi: 10.1016/j.ajur.2017.11.005.

Kirby R.S. (2000). The natural history of benign prostatic hyperplasia: what have we learned in the last decade? *Urology*; 56: 3 – 6.

Kuhlmann P.K. Dutasteride Improves Nocturia but Does Not Lead to Better Sleep: Results from the REDUCE Clinical Trial. *J Urol.* 2021 Jun; 205(6):1733-1739. doi: 10.1097/JU.0000000000001640. Epub 2021 Feb 19.

Lewis A.L., Young G.J., Abrams P., et al. (2019). Clinical and patient-reported outcome measures in men referred for consideration of surgery to treat lower urinary tract symptoms: baseline results and diagnostic findings of the urodynamics for prostate surgery trial; randomised evaluation of assessment methods (UPSTREAM). *EurUrolFocus.*; 5: 340–50.

Li F., Pascal L.E., Zhou J., Zhou Y., Wang K., Parwani A.V., et al. (2018) Feb. BCL-2 and BCL-XL expressions are down-regulated in benign prostatic hyperplasia nodules and not affected by finasteride and/or celecoxib. *Am J ClinExpUrol.* 6(1): 1–10.

Martov A.G. (2011). Transurethral galmium enucleation of prostate adenoma /

A.G. Martov, V.A. Maksymov, S.Yu. Yarovoy [et al.] // *Urology*. No. 1. Pp. 38 – 43.

Mavrov G.I., Chinov G.P., Nagorny O.Ye. (2011). Peculiarities of sexuality and the structure of sexually transmitted infections in people over 60 years old // *Clinical immunology. Allergology. Infectology. Special issue*. No. 1. P. 62 – 67.

Mobley D., Feibus A., 7. Baum N. Benign prostatic hyperplasia and urinary symptoms: Evaluation and treatment. *Postgrad Med* 2015; 127: 301-307. doi:10.1080/00325481.2015.1018799.

N.O. Saidakova, L.M. Startseva, N.G. Kravchuk,

N.O. Saidakova, L.M. Startseva, N.G. Kravchuk, The main indicators of urological care in Ukraine for 2019-2020 (publication notice). Kyiv, 2021. 203 p.

Nickel J.C., Freedland S.J., Castro-Santamaria R., Moreira D. M. (2017) Jul. Chronic prostate inflammation predicts symptom progression in patients with chronic prostatitis/chronic pelvic pain. *J Urol.* 198(1), 122 – 8.

Pasiechnikov S.P. (2014). The course of the postoperative period depending on the detected causative agent of sexually transmitted diseases in patients with benign prostatic hyperplasia / S.P. Pasiechnikov, V.S. Hrytsai, A.S. Hliebov, S.V. Nasheda // *Men's Health*. No. 2. Pp. 75 – 78.

Pasiechnikov S.P. (2015). Comparative analysis of the severity of complications of laser vaporization with the Dornier Medilas Urobeam 940 nm device, transurethral resection of the prostate and transvesical prostatectomy in patients with benign prostatic hyperplasia / S.P. Pasiechnikov, M.D. Diachuk // *Men's Health*. No. 3. Pp. 41 – 44.

Pasiechnikov S.P., Hliebov A.S. (2012). The role of STI pathogens in the development of complications of surgical treatment of patients with benign prostatic hyperplasia // *Medical aspects of men's health*. No. 2 (4). Pp. 29 – 35.

Pasiechnikov S.P., Hrytsai V.S., Hliebov A.S., Nasheda S.V. (2015). Agents of sexually transmitted infections as factors of chronic prostatitis in patients with BPH. *Medical aspects of men's health*. 2(17): Pp.5 – 13.

Pasiechnikov S.P., Hrytsai V.S., Hliebov A.S., Nasheda S.V. (2017). Prevention of complications of transvesical prostatectomy in patients with benign prostatic hyperplasia infected with *Trichomonas vaginalis*. *Experimental and clinical physiology and biochemistry*. 2/1: Pp. 179 – 184.

Patrikieiev A.A. (2005). Medical rehabilitation of patients after transurethral resection of benign prostatic hyperplasia: Abstract of the dissertation of Candidate of medical sciences. St. Petersburg. –19 p.

Pryimak I.A. (2012). The use of a combination of levofloxacin and ornidazole for perioperative antibiotic prophylaxis in gynecological practice / I.A. Prymak, O.V. Martyniuk // Medicine of non-urgent conditions.

Pushkar D.Yu., Bernikov A.N., Khodyreva L.A., Dudareva A.A. (2018). Quality of life in patients with lower urinary tract symptoms after TURP for BPH. Urology. 1: Pp. 53 – 69.

Saidakova N.O., Startseva L.M., Kononova G.Ye., Kravchuk N.G. (2018). The main indicators of urological care in Ukraine for 2016-2017: departmental publication; Ministry of Health of Ukraine; SI “Institute of Urology of the National Academy of Sciences of Ukraine”; SI “Centre of Medical Statistics” of the Ministry of Health of Ukraine. Kyiv: Polium. 216 p.

Saidakova N.O., Startseva L.M., Kravchuk N.G. (2015). Main indicators of urological care in Ukraine for 2019-2020 (departmental publication). Kyiv. – 203.

Sebastianelli A., Gacci M. (2015). Jan. Current status of the relationship between metabolic syndrome and lower urinary tract symptoms. EurUrolFocus. 4(1), 25 – 7.

Serhiienko N.F. (2011). Comparative characteristics of the results of modern operative methods of treatment of patients with prostate adenoma / N.F. Sergienko, O.I. Kudriashov, O.I. Bratchikov [et al.] // Urology. No. 1. Pp. 73 – 78.

Serniak Yu. P. (2012). Comparative evaluation of the results of prostatectomy and transurethral resection of the prostate gland in patients with benign prostatic hyperplasia / Yu.P. Sernyak, M.V. Kryshchtopa, I.D. Kryzhanovskiy // Transport Medicine of Ukraine. No. 2. P. 87 – 91.

Soler R., Andersson K.E., Chancellor M.B., Chapple C.R., de Groat W.C., Drake M.J., et al. (2013) Oct. Future direction in pharmacotherapy for non-neurogenic male lower urinary tract symptoms. EurUrol. 64(4), 610-21.

The main indicators of urological care in Ukraine for 2019-2020 (publication notice). Kyiv, 2021. 203 p.

The National Institute for Health and Care Excellence (NICE), (2015). ed.: Lower urinary tract symptoms in men: management. London.

Vinarov A.Z. et al. 15-years' survey of safety and efficacy of Serenoa repens extract in benign prostatic hyperplasia patients with risk of progression. Urologia 2019 Feb;86 (1):17-22.

Vozianov O.F., Pasiechnikov S.P., Hrytsai V.S. (2010). The influence of infection with pathogens of different taxonomic origins on the occurrence of early postoperative complications in patients with benign prostatic hyperplasia // Urology. Vol. 14. – 400 p.

Vozianov S.O., Bondarenko Yu.M., Sabadash M.Ye., Klymenko Ya.M., Shuliak O.V. (2014). The course of benign prostatic hyperplasia. Men's Health. 3(50): Pp. 85 – 87.

Vuichoud C., (2015). Loughlin K.R.: Benign prostatic hyperplasia: epidemiology, economics and evaluation. Can J Urol 22: 1 – 6.

Zhou Z. Efficacy and safety of dutasteride compared with finasteride in treating males with benign prostatic hyperplasia: A meta-analysis of randomized controlled trials. Exp Ther Med. 2020 Aug; 20(2): 1566-1574.doi: 10.3892/etm.2020.8851.

Порівняльна оцінка результатів антибіотикопрофілактики ранніх післяопераційних ускладнень трансуретральної резекції передміхурової залози у хворих на доброякісну гіперплазію передміхурової залози

Власик Маргарита¹, Нікітін Олег¹, Нашеда Сергій², Самчук Павло¹

¹Кафедра Урології, Національний медичний університет імені О.О. Богомольця, Київ, Україна

²Кафедра хірургії, Міжнародний європейський університет, Київ, Україна

Address for correspondence:

Vlasyk Marharyta

E-mail: ritavlaasyk@gmail.com

Анотація: в Україні у 2021 році захворюваність на доброякісну гіперплазію передміхурової залози (ДГПЗ) становила 321,6 на 100000 населення. Було виконано майже 17000 операцій на передміхуровій залозі, значна частка з яких припадає на трансуретральну резекцію простати

(ТУРП). Доведено, що найбільш частими ранніми ускладненнями при оперативних втручаннях на передміхуровій залозі є розвиток гострого запального процесу в сечостатеви́х органах, кровотеча з «ложа» вилученої гіперплазованої тканини передміхурової залози. Інфекційно-запальні захворювання уrogenітального тракту у чоловіків характеризуються різноманіттям етіологічних агентів, наявністю змішаних інфекцій та зростаючою значимістю збудників захворювань, що передаються статевим шляхом. Покращити результати ТУРП у хворих на ДГПЗ, ускладнені гострою затримкою сечовипускання, шляхом оптимізації антибактеріальної профілактики післяопераційних ускладнень в ранньому післяопераційному періоді. Дослідження базується на результатах аналізу хірургічного лікування 179 хворих на ДГПЗ, ускладнену гострою затримкою сечовипускання, яким було виконано ТУРП. Вік хворих варіював від 51 до 84 років, середній вік склав $64,9 \pm 5,1$ року. Хворі були розділені на дві групи: I група – 85 прооперованих, яким у ранньому післяопераційному періоді призначався цефтріаксон (1,0 парентерально 1 раз на добу); II група – 94 пацієнти, в ранньому післяопераційному періоді отримували левофлоксацин (500 мг в/в крапельно 3–5 днів з подальшим переходом на пероральний прийом, 1 раз на добу). Аналіз отриманих даних встановив, що в ранньому післяопераційному періоді у 43 (24,1%) пацієнтів виникли ускладнення. Найбільш частим ускладненням була довготривала макрогематурія, яка спостерігалась у 23 (12,9%) хворих. Загострення хронічного пієлонефриту виникло в 13 (7,3%) прооперованих, гострий уретрит розвинувся у 7 (3,9%) пацієнтів, гострий орхієпідидиміт спостерігався в 9 (5,0%) хворих. Загальна частота ускладнень у хворих на ДГПЗ, які в ранньому післяопераційному періоді отримували левофлоксацин була статистично достовірно меншою по відношенню до пацієнтів яким призначався цефтріаксон. Зокрема застосування левофлоксацину, у пацієнтів II групи, з метою антибіотикопрофілактики післяопераційних ускладнень після ТУРП, дозволило на 60% (в 1,6 рази) знизити частоту останніх, по відношенню до хворих I групи. Застосування левофлоксацина з метою профілактики ранніх післяопераційних ускладнень після ТУРП, у пацієнтів на ДГПЗ, ускладнену гострою затримкою сечовипускання, дозволяє покращити результати хірургічного лікування за рахунок зниження на 60% частоти розвитку ускладнень в післяопераційному періоді.

Ключові слова: антибіотикопрофілактика, доброякісна гіперплазія передміхурової залози, післяопераційні ускладнення, простата, трансуретральна резекція простати.



Copyright: © 2022 by the authors; licensee USMYJ, Kyiv, Ukraine.

This article is an **open access** article distributed under the terms

and conditions of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>)