

Clinical, Paraclinical and Therapeutic Aspects of Chronic Prostatitis

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Abstract

Aim: Present the clinical and paraclinical aspects of chronic prostatitis and report the management in urology. **Methods:** We conducted a retrospective descriptive study of 47 patients referred to the urology department from January 2011 to December 2013. Analysed variables were epidemiological (age, marital status, place of residence, occupation, education level, taking stimulants), clinical, paraclinical (CBU, chlamydia, syphilis and HIV serologies, urine culture susceptibility testing, semen analysis, ultrasound of urinary tree, radiographs, RCU, IVU), treatment and results. **Results:** The mean age was 44.6 years. The main reasons for consultation were dysuria (55.3%), prostaticorrhea (29.8%) and sexual asthenia (12.8%). The general condition was satisfactory (80.9%). Purulent drop was objectified in the urethral meatus in 10.6% of cases, and the DRE was painful at 44.68%. *Escherichia coli* was the main isolated germ (23.4%). In 55.3%, calcification of the prostatic area was objectified to ultrasound of the urinary tract. The RCU had objectified bilharzia in 8.5% of calcifications of the bladder area and 19.14% of urethral stricture. The medical treatment was completed in all patients according to the etiology and complications by an instrumental or surgical treatment, offline or emergency. The outcome was favorable in 25 patients. Symptoms were improved in 12 others and a failure for the ten remaining. **Conclusion:** Chronic prostatitis is relatively frequent in urology. Clinical manifestations are diverse and varied. Treatment is difficult with a significant failure rate.

Keywords

Prostate, Infection, Calcification, Chlamydiae, Schistosomiasis

1. Introduction

Acute prostatitis is a well-known infectious entity. The concept of chronic prostatitis has been the subject of controversy for several years, as evidenced by the multiple names: pelvic inflammatory syndrome or better chronic pelvic pain syndrome (SCDS). The etiology is infectious in only 5% to 15% of cases [1] [2]. The main symptoms reported by patients are: pelvic pain associated with dysuria, testicular pain, urethral or perineal burns. Chronic prostatitis poses: to the clinician a diagnosis and therapeutic problem, to the patient a problem of quality of life and chronic absenteeism at work. It is difficult to incriminate the germs after prostatic massage because of the possible contamination by germs of the urinary tract [1]. Imaging, in particular, ultrasound and RCU, objectifies of the calcifications of the prostatic area [3]. The present recommended treatment is the result of a holistic approach using an antibiotics, alpha blockers and anti-muscarinics. Erinomo O. O. *et al.* found 2.9% of chronic prostatitis [4].

Our study aims to determine the epidemiological, clinical, therapeutic and radiological characteristics of the prostatitis treated at the urology department.

2. Patients and Methods

This is a retrospective descriptive study of 47 cases of chronic prostatitis collected in the urology department of National Referral General Hospital from January 2011 to December 2013. The patients were from N'Djamena, from the interior of the country and sometimes neighboring countries. They had come in consultation to the urology department or referred by a colleague. The consultation was motivated by a painful pelvic or urethral symptomatology. Were included patients who had come in consultation in the department of urology, whose report is complete, in whom the diagnosis of chronic prostatitis was retained after a clinical and paraclinical check-up, who were managed and followed-up. Were excluded, patients without paraclinical check-up confirming the diagnosis and those whose management was performed outside the urology department. The variables studied were of several kinds. Epidemiologic: Age, marital status, place of residence, occupation, education, taking of stimulants. Clinical findings include: history (STI, uro-genital bilharziasis, pelvic trauma), clinical signs at admission (pollakiuria, micturition burn, urinary urgency, dysuria, complete urine retention, urinary incontinence...), qualitative anomalies and Prostatorrhoea, painful ejaculation, erectile dysfunction, pain (pelvic or perineal, testicular...) and data from the physical examination (rectal touch...). Paraclinics: Biology (NFS, chlamydial serology, HIV and syphilis, ECBU, antibiogram, spermogram...) and imaging (urinary tree ultrasound, standard radiography, RCU, IVU). Therapeutics: medical treatment taking into account the NIH classification: 1-Chronic bacterial prostatitis: ciprofloxacin or ofloxacin associated with metronidazole and NSAIDs, 2 Chronic bacterial prostatitis and chlamydial positive serology: roxithromicin associated with metronidazole and NSAIDs,

3-Chronic prostatitis category IIIA and IIIB: Amoxicillin-clavulanic acid and NSAIDs. 4-Chronic Category 4 prostatitis: amoxicillin clavulanic acid associated with tocopherol. Surgical treatment was prostatic adenomectomy carrying out the prostate calcifications. Were declared cured all patients without clinical signs of chronic prostatitis after treatment and follow-up. The study was approved by the Ethics, Scientific and Academic Committee of the Faculty of Human Health Sciences (FSSH), the National Referral General Hospital (HGRN) and the Head of The urology department of the HGRN. The reasons for the study were explained to the patients and their consent was obtained for the anonymous use for scientific purposes of the photographs. Evolutive: All patients were monitored on an outpatient basis each month over a period of six months before concluding: healing, improvement or failure.

3. Results

During the study period, 1474 patients were consulted in the department of urology, 47 had documented chronic prostatitis. The average age of patients was 44.6 years with extremes of 23 and 82 years. Patients aged 20 - 39 were more affected (48.9%) as showed in **Table 1** and lived in N'Djamena, the capital city (91.6%). The non-employees represented 44.6% and the married 78.7%. Patients consumed tea in 38.3%, pepper, coffee in 27.7%. The reasons of consultation are presented in **Table 2**. The history was dominated by bilharziasis in 10.6% and gonococcal urethritis in 6.3%. The general condition was good (n = 38), mean

Table 1. Distribution according to age.

Age range	Enrolled	Percentage
20 to 39 years	23	48.9
40 to 59 years	15	31.9
60 to 79 years	7	14.9
80 and more	2	4.3
Total	47	100.0

Table 2. Repartition by reason of consultation.

Reasons of consultation	Frequency	Percentage
Pelvic and perineal pain	16	34.0
Lower back pain	4	8.5
Testicular pain	3	6.4
Dysuria	26	55.3
Complete retention of urine	3	6.4
Prostatorrhoea	14	29.8
Premature ejaculation	2	4.3
Sexual asthenia	6	12.8
Infertility	1	2.1

(n = 8) and bad (n = 1). At the rectal touch, the prostate was painful (n = 21), hypertrophied (n = 14), irregular (n = 4) and had normal contours (n = 8). The other physical signs are reported in **Table 3**. The urine was cloudy in 32 patients. The result of the CBU results was reported in **Table 4**. Oligospermia was found in 11 patients and asthenospermia in 5 others. PSA was performed in 74.5% of patients. According to the NIH-NIDDK classification of prostatitis syndromes, patients in categories II, IIIA, IIIB and IV accounted respectively for 51%, 31.9%, 14.9% and 2.1%. A non-bacterial leucocyturia was observed in 31.9% patients. *E. coli* was isolated in 23.4% patients. Ultrasound showed prostate calcification in 55.3% of patients (**Figure 1**). The RCU showed shrinkage in 19.1% patients (**Figure 2**). **Table 5** and **Table 6** respectively present NIH-NIDDK and duration of treatment. The results of this study are summarized in **Table 6**.

4. Discussion

In total, 47 patients with chronic prostatitis were treated for a period of 3 years. During 3 years, 1474 patients were received in consultation in urology, 47 suffered from chronic prostatitis. Chronic prostatitis accounts for 3.19% of consultation volume. This pathology affects a young sexually active population. It is a

Table 3. Distribution according to other physical signs.

Clinical Exam	Quantity	Percentage
Liquid flow through urethral meatus with rectal examination	1	2.1
Hemorrhoids	1	2.1
Urethral perineal fistula	1	2.1
Distended bladder	1	2.1
Prostate hypertrophy	1	2.1
Urethral drop of meatus	5	10.6
Orchi epididymitis	1	2.1

Table 4. Distribution according to the microscopic aspect of the urine.

Results	Total	Percentage
Leukocyturia	36	76.6
Microscopic haematuria	3	6.3
Yeasts	7	14.9
Epithelial Cells	10	21.3
Calcium oxalate crystals	4	8.5
Cocci G+	4	8.5
Cocci G-	1	2.1
Bacillus G+	3	6.4
Bacillus G-	7	14.9
<i>E. coli</i>	8	17.0
<i>Trichomonas vaginalis</i>	4	8.5

Table 5. Distribution according to the category.

Category	Results of treatment			Total
	Healing	Signs amended	Persistence of sign	
II	14	7	3	24
IIIA	8	4	3	15
IIIB	3	1	3	7
IV	0	0	1	1
Total	25	12	10	47

$\text{Khi}^2 = 6.85$. $P = 0.33$.

Table 6. Distribution of treatment outcomes by duration.

Results	Length of treatment			Total
	4 weeks	4 à 12 weeks	12 Weeks and more	
Healing	11	11	3	25
Signs amendment	0	6	6	12
Persistence of signs	0	5	5	10
Total	11	22	14	47

$\text{Khi}^2 = 15.44$. $P = 0.004$.

**Figure 1.** Calcification of the prostate.

young population at risk: sexually transmitted infections through sexual vagrancy, contamination by uro-genital bilharziasis by the profession of rice farmers and fishermen, trauma of the pelvis complicated by lesions of the uterus, urethra. The high proportion of the young population suffering from chronic prostatitis is also highlighted by many authors [5] [6] [7]. Non-salaried workers (44.6%) include agents such as workers, small traders. These agents perform small tasks enabling them to live on a daily basis. These people with precarious income are not very concerned about their state of health. Their low intellectual



Figure 2. Urethral stricture and extravasation of the contrast product.

level makes them victims of STIs due to lack of protective measures during sexual intercourse. The lack of adequate treatment of STIs exposes them to long-term complications, including urethral stricture that promotes retrograde infection of the prostatic ducts causing chronic prostatitis. As paradoxical as it may be, married couples (78.7%) suffer more from chronic prostatitis than bachelors. Does this mean that marriage is a factor of exposure to chronic prostatitis? Chronic prostatitis is often the culmination of a long, poorly treated or under-treated urinary tract infection. We can safely say that these bride and groom were certainly infected before their marriage, and the clinical symptomatology was noisy only after marriage. A US study in 2013 reported that 47.4% of patients with chronic prostatitis had symptoms aggravated by spices, tea, coffee and alcohol [8]. This observation is also highlighted in our study where locally, tea is highly consumed hot all day long. The infestation with urogenital bilharziasis is undoubtedly a predilection for chronic prostatitis. Indeed, the aberrant location of the bilharzia eggs in the genital tract is not only a cause of hypofertility but also a nucleus favoring the formation of prostatic calcifications. This is all the more true since in these patients, calcifications of the bladder and prostatic area are frequently found on the images of the RCU and radiography without preparation of the pelvis. Chad is one of the central African countries where bilharziasis is endemic. The backwaters or river waters retained in rice farming are infested with cercariae that penetrate the skin during bathing in hot hours of the day. The notion of urethritis like antecedent reported by Diao B [5] is also highlighted in our study. Gonococcal urethritis causes ulceration and inflammation of the urethra, which is aggravated by irritation of urinary flow. This results in the formation of fibrosis and a stenosing scar as a real obstacle to the flow of urine explaining dysuria. This dysuria drastically slowed the urinary flow maintaining infection upstream of the obstacle with chronic reflux of infected urine

in the prostatic canals causing chronic prostatitis. The coexistence of urethritis and bilharzian infestation would aggravate and maintain chronic prostatitis. Dysuria is by far the main reason for consultation, as noted by other authors (Budia [9] and El Meliegy Al *et al.*) in 2015 [10]. This dysuria is either the consequence of a stenosis of the urethra which is complicated by chronic prostatitis, or due to a defect of opening of the vesical neck sheathed by chronic prostatitis. For some authors, premature ejaculation in patients with chronic prostatitis would be due to prostatic inflammation that would alter the sensation and modulation of the ejaculatory reflex [11] [12] [13]. Fu W *et al.*, [14] even establish a significant link between hypofertility and chronic prostatitis. We think that hypofertility, in the case of figure would be due; either to a decrease in the mobility of the spermatozoa or to an oligozoospermia. From chronic prostatitis, the infection can retrograde, reach the vas deferens, testicles and significantly destroy the germ line. On the other hand, chronic prostatitis would compromise the production of fructose, carnitine and zinc. These important elements, contained in the prostatic fluid, play a major role in the mobility and survival of spermatozoa. Pelvic and perineal pain is also one of the reasons for consultation. It is most often a dull, embarrassing pain, sometimes permanent, felt by the patient in a sitting position. For others it is a pain that occurs after a painful ejaculation evocative of a spermocystitis. In a study conducted in 2013, Wegenlehner F. [15] *et al.* point out that 63% of patients consult for pelvic and perineal pain. We believe that these pains are the result of a series of events, including: infection, inflammation and local disturbance of innervation. Despite the pain and the infectious context, the patients present a satisfactory general state.

Isolated Bacteries

The nature of the germs varies according to the studies and the countries, as **Table 7** makes clear. This diversity of bacterial flora, coupled with the diversity of symptoms, reflects the difficulty of having a classification of chronic prostatitis

Table 7. Isolated bacteria from CBU and urethral specimens by country.

Germs	Our study	Budia <i>et al.</i> in 2006 (Espagna) [9]	Mazzoli S in 2010 (Italy) [16]	Choi YS <i>et al.</i> en 2013 (Co-rea) [17]	Choi YS <i>et al.</i> in 2013 (Co-rea) [17]	Strockij <i>et al.</i> 2015 (Russia) [18]	in Park SH <i>et al.</i> en 2015 (Corea) [19]	Li X <i>et al.</i> in 2015 (China) [20]
<i>Enterococcus fecalis</i>			33.3				2	
<i>E. coli</i>	23.4	70.4	20				26	
<i>Staphylococcus spp</i>	2.1		33.3				4	
<i>C. trachomatis</i>				49	34	84.8	2	
<i>T. vaginalis</i>	11			2	1	75.5		
<i>M. morganii</i>	2.1							1 case
<i>N. gonorrhoea</i>	15							

NB: the results are in percent, except in the studies of Li X *et al.*, which report a case of *M. morganii* isolated in a 55-year-old patient.

and treatment. By adopting the NIH classification which takes into account the symptoms of prostatitis: the presence or absence of germ at the CBU after prostatic massage, the presence or absence of leucocyturia. The results obtained show a high frequency for chronic category II prostatitis, which alone accounts for 51%. This predominance of category II is also reported by other authors [5] [21].

In some patients, the cytobacteriological examination of the urine allowed the individualization of bilharzia eggs. These are usually patients whose RCU has shown calcifications of the prostatic and bladder area. The positivity of chlamydia serology is also emphasized in the literature [18] [21].

Low testosterone levels were found in patients. Lee JH *et al.* [22] in a study found a correlation between low testosterone and prostatitis. Achievement of the defect and testicular parenchyma from a prostatic focus (bacterial prostatitis) explains the loss of testosterone by destruction of Leydig cells.

Fluoroquinolones were the most frequently used antibiotics (38.3%) followed by penicillins (25.5%) and macrolides (25.5%). These were antibiotics available at a reasonable price. Choe HS *et al.* in 2014 [23] used mainly ciprofloxacin and Roxithromicin. Quinolones and macrolides are antibiotics of choice in the treatment of chronic prostatitis. The treatment must always be long lasting in order to hope to reach the germs present in the prostate parenchyma. If a consensus is reached for a minimum duration of 4 weeks, this is not the case for the maximum duration which varies according to the authors. Strength is to emphasize that the chance of getting the healing diminishes after 4 to 12 weeks of a well-conducted treatment. Through the literature, we can see that the choice of the antibiotic is either dictated by the antibiogram or by the experience of the practitioner. Choe HS *et al.* in 2014 [23] divided the patients into three groups and administered ciprofloxacin, roxithromicin and aceclofenac, respectively. After a follow-up of 12 weeks, the authors concluded that there was no significant difference in outcome as a function of antibiotic therapy. An antibilharzien, in this case, Praziquantel was administered to patients in whom the imaging (RCU or IVU) allowed to objectify bilharzial calcifications or when the cystoscopy revealed a Semi-bilharzian granulations in the bladder wall. An imidazole is associated with antibiotics in patients whose cytobacteriological examination has demonstrated *Trichomonas vaginalis* or in the context of a synergistic combination. An antifungal was administered to patients in whom ECBU confirmed the presence of yeast. Kotb *et al.* in 2013 [24] administered antifungal agents to 1000 patients who had failed after antibiotic treatment and achieved an 80% improvement. Pending adenomectomy with calcifications in patients over 60 years of age, alpha-blocking therapy is administered to improve urination. For Wang J *et al.* [25], the combination of antibiotics and alpha-blockers gives a better result compared to the use of the antibiotic or the alpha-blocker in monotherapy. NSAIDs were also administered to patients. Hormone therapy has been administered to patients with low testosterone levels, and an aphrodisiac has been associated with treatment in patients with erectile dysfunction. To improve fertili-

ty, alpha-tocopherol has been associated with treatment in patients with hypofertility and DE KA chronic prostatitis. Vicari LO *et al.* in Italy in 2015 [26], treated by antibiotic therapy only 110 hypofertile patients suffering from chronic bacterial prostatitis, obtained 71% improvement in motility and sperm count. Benign dilation was performed in 21.3% of patients with urethral stricture.

5. Conclusions

Chronic prostatitis is a difficult diagnostic pathology because the clinical manifestations found in our study are multiple and varied: dysuria, pelvic pain, prostaticorrhea, premature ejaculation, and hypofertility.

The treatment of chronic prostatitis depends on the group according to the INH classification and by a multidisciplinary team. Its prevention involves educating the population on STIs through IEC, prevention and treatment of urogenital bilharziasis.

References

- [1] Issa, W., Roumeguere, T. and Bossche, M.V. (2013) Le Syndrome Douloureux Pelvien Chronique ou Prostatite Chronique. *Revue Médicale de Bruxelles*, **34**, 29-37.
- [2] Hedelin, H., Johannisson, H. and Welin, L. (2013) Prevalence of the Chronic Prostatitis/Chronic Pelvic Pain Syndrome among 40-60 Year Old Men Residing in a Temperate Climate. *Scandinavian Journal of Urology*, **47**, 390-392.
<https://doi.org/10.3109/00365599.2012.756930>
- [3] Zhao, Z., Xuan, X., Zhang, J. and Zeng, G. (2014) A Prospective Study on Association of Prostatic Calcifications with Sexual Dysfunction in Men with Chronic Prostatitis/Chronic Pelvic Pain Syndrome (CP/CPSP). *The Journal of Sexual Medicine*, **11**, 2528-2536. <https://doi.org/10.1111/jsm.12534>
- [4] Erinomo, O., Anunobi, C. and Orah, N. (2013) Autopsy Study of Prostatic Weight and Lesions in LUTH: A 12 Month Prospective Study. *Nigerian Quarterly Journal of Hospital Medicine*, **23**, 85-89.
- [5] Diao, B., Fall, P., NdoyeAk, Z.C., Fall, B., Sow, Y., *et al.* (2006) Prostatites Chroniques: Aspects Cliniques et Thérapeutiques. *Dakar Médical*, **51**, 38-41.
- [6] Chukwunonso, E.E. and Lawrence, U.E. (2008) Prevalence of Chronic Prostatitis Symptoms in a Randomly Surveyed Adult Population of Urban-Community-Dwelling Nigerian Males. *International Journal of Urology*, **15**, 340-343.
<https://doi.org/10.1111/j.1442-2042.2008.02003.x>
- [7] Lee, J.H. and Lee, S.W. (2015) Relationship between Premature Ejaculation and Chronic Prostatitis/Chronic Pelvic Pain Syndrome. *The Journal of Sexual Medicine*, **12**, 697-704. <https://doi.org/10.1111/jsm.12796>
- [8] Herati, A.S., Shorter, B., Srinivasan, A.K., Tai, J., Seideman, C., Lesser, M., *et al.* (2013) Effects of Foods and Beverages on the Symptoms of Chronic Prostatitis/Chronic Pelvic Pain Syndrome. *Urology*, **82**, 1376-1380.
<https://doi.org/10.1016/j.urology.2013.07.015>
- [9] Budía, A., Luis, P.J., Broseta, E., Tejadillos, S., Benedicto, A., Queipo, J., *et al.* (2006) Value of Semen Culture in the Diagnosis of Chronic Bacterial Prostatitis: A Simplified Method. *Scandinavian Journal of Urology and Nephrology*, **40**, 326-331.
<https://doi.org/10.1080/00365590600748247>

- [10] El Meliegy, A. and Torky, M. (2015) An Observational Study to Monitor the Efficacy and Tolerability of Levofloxacin 500 Mg Once Daily for Treatment of Chronic Bacterial Prostatitis in Saudi Arabia. *Urology Annals*, **7**, 71-73. <https://doi.org/10.4103/0974-7796.148623>
- [11] Zohdy, W. and Lamine, S. (2009) Clinical Parameters that Predict Successful Outcome in Men with Premature Ejaculation and Inflammatory Prostatitis. *The Journal of Sexual Medicine*, **6**, 3139-3146. <https://doi.org/10.1111/j.1743-6109.2009.01487.x>
- [12] Sönmez, N., Kiremit, M., Güney, S., Arisan, S., Akça, O. and Dalkılıç, A. (2011) Sexual Dysfunction in Type III Chronic Prostatitis (CP) and Chronic Pelvic Pain Syndrome (CPPS) Observed in Turkish Patients. *International Urology and Nephrology*, **43**, 309-314. <https://doi.org/10.1007/s11255-010-9809-5>
- [13] Mo, M.Q., Long, L.L., Xie, W.L., Chen, S., Zhang, W.H., Luo, C.Q., *et al.* (2014) Sexual Dysfunctions and Psychological Disorders Associated with Type III a Chronic Prostatitis: A Clinical Survey in China. *International Urology and Nephrology*, **46**, 2255-2261. <https://doi.org/10.1007/s11255-014-0810-2>
- [14] Fu, W., Zhou, Z., Liu, S., Li, Q., Yao, J., Li, W., *et al.* (2014) The Effect of Chronic Prostatitis/Chronic Pelvic Pain Syndrome (CP/CPPS) on Semen Parameters in Human Males: A Systematic Review and Meta-Analysis. *PLoS ONE*, **9**, e94991. <https://doi.org/10.1371/journal.pone.0094991>
- [15] Wagenlehner, F., Van Till, J.W., Magri, V., Perletti, G., Houbiers, J., Weidner, W., *et al.* (2013) National Institutes of Health Chronic Prostatitis Symptom Index (NIH-CPSI) Symptom Evaluation in Multinational Cohorts of Patients with Chronic Prostatitis/Chronic Pelvic Pain Syndrome. *European Urology*, **63**, 953-959. <https://doi.org/10.1016/j.eururo.2012.10.042>
- [16] Mazzoli, S. (2010) Biofilms in Chronic Bacterial Prostatitis (NIH-II) and in Prostatic Calcifications. *FEMS Immunology & Medical Microbiology*, **59**, 337-344. <https://doi.org/10.1111/j.1574-695X.2010.00659.x>
- [17] Choi, Y.S., Kim, K.S., Choi, S.W., Kim, S., Bae, W.J., Cho, H.J., *et al.* (2013) Microbiological Etiology of Bacterial Prostatitis in General Hospital and Primary Care Clinic in Korea. *Prostate International*, **1**, 133-138. <https://doi.org/10.12954/PI.13023>
- [18] Strockij, A., Gavrushev, A., Rubanik, L. and Poleshchuk, N. (2015) Is a Nonbacterial Prostatitis Nonbacterial? *Urologiia*, **2015**, 102-106.
- [19] Park, S.H., Ryu, J.K., Choo, G.Y., Chung, Y.G., Seong, D.H., Kim, C.H., *et al.* (2015) Chronic Bacterial Seminal Vesiculitis as a Potential Disease Entity in Men with Chronic Prostatitis. *International Journal of Urology*, **22**, 508-512. <https://doi.org/10.1111/iju.12706>
- [20] Li, X. and Chen, J. (2015) Septic Shock Induced by Bacterial Prostatitis with *Morganellamorganii* Subsp. *Morganii* in a Post Transplantation Patient. *Case Reports in Transplantation*, **2015**, Article ID: 850532. <https://doi.org/10.1155/2015/850532>
- [21] Lee, G. (2015) Chronic Prostatitis: A Possible Cause of Hematospermia. *World Journal of Men's Health*, **33**, 103-108. <https://doi.org/10.5534/wjmh.2015.33.2.103>
- [22] Bozhedomov, V., Semenov, A.V., Konyshv, A.V., Lipatova, N.A., Pacanovskaja, G., Bozhedomova, G., *et al.* (2015) Reproductive Function in Men with Chronic Prostatitis: Clinical, Disease History and Microbiological Risk Aspects. *Urologiia*, **2015**, 70-78.
- [23] Choe, H.S., Lee, S.J., Han, C.H., Shim, B.S. and Cho, Y.H. (2014) Clinical Efficacy of

Roxithromycin in Men with Chronic Prostatitis/Chronic Pelvic Pain Syndrome in Comparison with Ciprofloxacin and Aceclofenac: A Prospective, Randomized, Multicenter Pilot Trial. *Journal of Infection and Chemotherapy*, **20**, 20-25.

<https://doi.org/10.1016/j.jiac.2013.07.010>

- [24] Kotb, A.F., Ismail, A.M., Sharafeldeem, M. and Elsayed, E.Y. (2013) Chronic Prostatitis/Chronic Pelvic Pain Syndrome: The Role of an Antifungal Regimen. *Central European Journal of Urology*, **66**, 196-199.
- [25] Wang, J., Yan, D., Liang, K. and Xu, Z. (2016) A Randomized Controlled Trial of Levofloxacin, Terazosin, and Combination Therapy in Patients with Category III Chronic Prostatitis/Chronic Pelvic Pain Syndrome. *International Urology and Nephrology*, **48**, 13-18. <https://doi.org/10.1007/s11255-015-1147-1>
- [26] Vicari, L.O., Castiglione, R., Salemi, M., Vicari, B.O., Mazzarino, M.C. and Vicari, E. (2015) Effect of Levofloxacin Treatment on Semen Hyperviscosity in Chronic Bacterial Prostatitis Patients. *Andrologia*, **48**, 380-388. <https://doi.org/10.1111/and.12456>



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