

## Epidemiological and clinical profile of chronic prostatitis at the Yaounde Military Hospital

Nsi Cc<sup>1,4</sup>, Njuma E<sup>2</sup>, Feukam D<sup>1,4</sup>, Dadjé.L<sup>2</sup>, Owono H<sup>2</sup>, Ngwa.T<sup>2</sup>,  
Fouda.J.C<sup>2</sup>, Ayangma.C<sup>1</sup>, A Mbouche.L<sup>2,4</sup>, Fouda J<sup>3,4</sup>, Angwafor F<sup>2,4</sup> Eloundou  
N<sup>1,4</sup>.

*1 Yaounde Military Hospital*

*2 Yaounde Gyneco-Obstetric And Paediatric Hospital*

*3. Yaounde Central Hospital*

*4 Faculty Of Medicine And Biomedical Sciences Of Yaounde.*

Submitted: 15-09-2023

Accepted: 25-09-2023

### ABSTRACT

**Objective:** To establish the epidemiological and clinical profile of patients treated for chronic prostatitis at the Yaounde Military Hospital (HMRI).

**Materials and methods:** Descriptive cross-sectional study of all consultants with a diagnosis of chronic prostatitis received at the Military Hospital Urology Unit between June 2015 and May 2017. These patients underwent clinical and biological examinations (rectal examination, cytobacteriological examination of the urine, sperm culture and sperm analysis) and were classified, monitored and evaluated according to the NIH-CPSI form.

**Results:** Chronic prostatitis accounted for 11.9% of urological diseases, and 57.8% of the patients were single, with an average age of 32.38. Pain accounted for 86.5% of consultations, especially scrotal pain (44.2%). Orchiepididymitis accounted for 26.2% of the history. The rectal examination was 99.5% sensitive, and the sperm culture was able to discriminate between the types of chronic prostatitis present: 68% inflammatory, 31% bacterial and 3 cases of prostatodynia. The spermogram revealed 87.4% normal forms and 69.4% patients with a normal sperm count. It should be noted that 55.3% of spermograms showed asthenospermia, 27.7% oligospermia and 6 cases of azoospermia. The antibiotic-alpha blocker combination was 38.8%. There was a 72.8% success rate after three months and a 5.82% failure rate.

**Conclusion:** Chronic prostatitis is common in our context, with pain being the main clinical sign and orchiepididymitis the most common history. If you have long-standing scrotal or suprapubic pain and a positive rectal examination, suspect chronic prostatitis and do a sperm culture. If sperm culture

is unavailable, choose antibiotic prophylaxis based on the 3 pillars of antibiotic use in urology.

**Key words:** Chronic prostatitis, orchiepididymitis, rectal examination, sperm culture, antibiotic prophylaxis.

### I. INTRODUCTION

Chronic prostatitis which develops in a long-lasting way, tends to recur and is difficult to treat. 5-10% of cases are of infectious origin, the other entities being chronic non-bacterial prostatitis and prostatodynia, known as chronic pelvic pain syndrome [1]. Their pathophysiological uncertainties, frequency and disabling nature are of growing interest, both clinically and theoretically [2]. Chronic prostatitis is associated with substantial costs and lower quality of life scores, including frequent hospitalisation, loss of employment and reduced free time [3]. This is particularly true in the military, where it is the cause of a lot of disability and absenteeism due to hospitalisation, medical rest and lengthy treatment, with a major impact not only on the patient and the quality of their service, but also on their sexuality and fertility.

This study aimed to establish the epidemiological and clinical profile of chronic prostatitis in the Urology Department of the Yaounde Military Hospital in order to better codify its management.

### II. MATERIALS AND METHODS:

A prospective descriptive study was carried out from June 2015 to May 2017 in the Urology Department of the Yaounde Military Hospital, involving all patients received in outpatient consultation. They underwent clinical and rectal examinations, and biological tests:

cytobacterial examination of the urine (CBUE), sperm culture, sperm analysis. Selection, classification and follow-up were based on the National Institute of Health Chronic Prostatitis Syndrome Index (NIH-CPSI) model.

For the classification we consider

- Chronic bacterial prostatitis or CBP: any patient with symptoms whose biological analysis (CBUE, Sperm culture) isolated germs.
- Chronic bacterial prostatitis (CAP) or inflammatory prostatitis: any patient with symptoms whose biological analysis (CBUE, sperm culture) has isolated leukocytes only.
- prostatodynia: any patient with symptoms and a positive rectal examination whose biological analysis (CBUE, sperm culture) has isolated neither germs nor leucocytes.

Patients were then put on various treatments for an average period of six (6) weeks. Criteria for validating treatment progress after three and/or six months were improvement in symptoms and elimination of disorders (pain, pathological prostatic discharge, erectile dysfunction, etc.). The absence of improvement or worsening of symptoms was considered a failure.

Patients who were unable to answer questions clearly, those with unusable reports and those who did not follow medical prescriptions properly were excluded. Statistical analysis was performed using EPI INFO 3.5.3 software.

### III. RESULTS:

During this study, 1,726 patients consulted a urologist. Chronic prostatitis accounted for 11.9% of consultations. The average age was 32.38 years (figure 1).

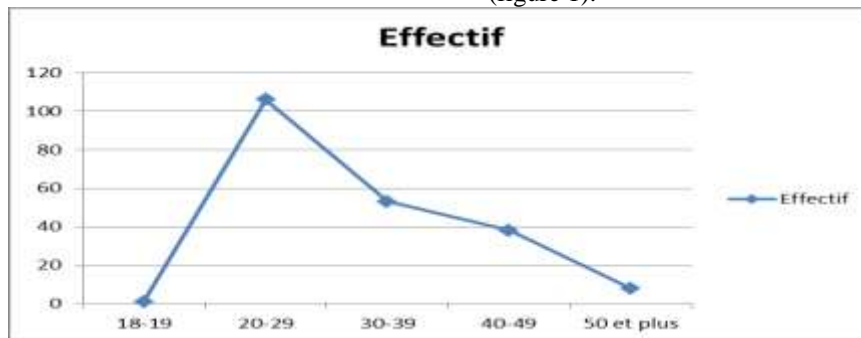


Figure 1 :

Military personnel and those who were single accounted for 72.8% and 57.8% respectively. Military personnel and those who were single accounted for 72.8% and 57.8% respectively.

Pain was the most frequent reason for consultation (86.5% all types), in particular scrotal pain (44.2%), followed by suprapubic pain (30.6%) and urethral pain (11.7%).

Table I: Socio-epidemiological, clinical, biological and pharmacological data.

Item	Characteristic	Frequency (n)	Percentage (%)	Confidence interval at 95 (%)	
<b>Socio-epidemiological status</b>					
<b>Function</b>	civilian	56	27.2	21.2	33.8
	Military	150	72.8	66.2	78.8
<b>marital status</b>	Single	119	57.8	50.7	64.6
	Married	87	42.2	35.4	49.3
<b>Clinical</b>					
	Scrotal pain	91	44.2	37.3	51.2
	Suprapubic pain	63	30.6	24.4	37.4
	Urethral pains	24	11.7	7.6	16.8
	Erectile	17	8.3	4.9	12.9

<b>Clinical signs</b>	dysfunction				
	Haematuria	1	0.5	0.0	2.7
	Haemospermia	4	1.9	0.5	4.9
<b>Sexual signs</b>	Infertility	6	2.9	1.1	6.2
	Erectile dysfunction	51	24.8	19.0	31.2
	Premature ejaculation	14	6.8	3.8	11.1
<b>Rectal examination</b>	NIL	141	68.4	61.6	74.7
	Prostate enlarged and sensitive	148	71.8	65.2	77.9
	Normal, non-tender prostate	1	0.5	0.0	2.7
<b>History</b>	Sensitive	57	27.7	21.7	34.3
	Urinary tract infection	1	0.5	0.0	2.7
	Orchiepididymitis	54	26.2	20.3	32.8
<b>Biology</b>	NIL	102	49.5	42.5	56.5
	Polling	20	9.7	6.0	14.6
	Urethritis	29	14.1	9.6	19.6
<b>CBUE</b>	Germ	2	1.0	0.1	3.5
	Aseptic leukocyturia	4	1.9	0.5	4.9
	Sterile	200	97.1	93.8	98.9
<b>Sperm culture</b>	Infection	63	31		
	Leukospermia	140	68		
	NIL	3	1		
<b>Treatment</b>					
<b>INN</b>	Alpha-blocker	17	8.3	4.9	12.9
	Antibiotics	54	26.2	20.3	32.8
	Antibiotics + Alpha-blocker	80	38.8	32.1	45.9
	Antibiotics + Alpha-blocker+ PDI5	16	7.8	4.5	12.3
	Antibiotics + PDI5	25	12.1	8	17.4
	Others	11	5.3	2.7	9.4
	PDI5	3	1.5	0.3	4.2
<b>Follow-up at 3 months</b>	Favourable	150	72.8	66.2	78.8
	Not favourable	56	27.2	21.2	33.8
<b>Follow-up at 6 months</b>	Favourable	44	78.6	65.6	88.4
	Not favourable	12	21.4	11.6	34.4

Orchiepididymitis was the main risk factor (26.2%), followed by urethritis (14.1%) and catheterisation (9.7%). Sexual signs included erectile dysfunction (24.8%) followed by premature

ejaculation. The rectal examination was sensitive (painful) in 99.5% of cases and the CBUE was sterile in 97.1%. Leukospermia was present in 68% of patients, bacterospermia in 31% and sterility in 3

cases. Although 87.4% and 69.4% of spermatozoa respectively were normal in shape and number, it is important to note that 55.3% of spermograms showed asthenospermia, 27.7% oligospermia and 06 cases of azoospermia. The antibiotic-alpha blocker combination was 38.8%. After three months, 72.8% were treated successfully and 5.82% had failed at the end of the study (see Table I).

#### IV. DISCUSSION

This study found a high prevalence of chronic prostatitis (11.9%) in a young population, predominantly from the military (see figure 1). Prostatitis has a prevalence of around 5-9% in the general male population [4], which means that we find a much higher prevalence, especially as this study excluded the other types I and IV (acute and asymptomatic). These results can be compared with those of other authors in Africa [5, 6]. This condition affects a young population in which there is not only a lack of protective measures during sexual intercourse, but also a lack of reliable information to be disseminated on the aetiopathology of chronic prostatitis, despite its prevalence, an uncomfortable symptomatology and its impact on quality of life and sexuality. If germs are present in the bulbar urethra, there is a high risk of prostate infection. These germs penetrate mainly through the ducts in the peripheral zone. There, the anatomy of the ducts, which are horizontal in the peripheral prostate and open wide into the prostatic urethra, facilitates urine reflux and stasis, and could explain the higher frequency of prostatitis in this part of the gland [7]. This differs from the ducts of the central zone, which are connected obliquely to the urethra and whose ostia are squeezed during micturition. Infection can also occur via the descending urethra, where germs from the upstream urine colonise the prostatic ducts through reflux of urine into them, generally in the case of subvesical obstruction (prostatic hypertrophy, urethral stricture, vesicosphincter dyssynergy), with probable formation of prostatic calculi which, in the case of bacterial prostatitis, can become infected and lead to recurrences because they are inaccessible to antibiotic therapy [8, 9]. Not forgetting the current presence in prostate tissue of numerous antibiotic-resistant microorganisms that cannot be cultured. Single people were the most represented, as shown by several series in Africa [5, 10]. Multiple sexual partners - with sexually transmitted infections (STIs) as the main cause - and/or failure to treat these STIs adequately over

the required period expose patients to frequent relapses and long-term complications. This is why doctors are being urged to ensure that the right drug treatment is available and followed through until those suffering from STIs recover completely. Pain was the most frequent reason for consultation, especially scrotal pain; the same results were obtained elsewhere [11], and Wagenlehner F. et al. noted that 63% of patients consulted for pelvic and perineal pain [12]. Pain has a major impact on quality of life, and the frequency and severity of pain are more important than type/location [13]. Patients often experience dull, embarrassing and sometimes permanent pain in a sitting position. For others, it is a pain that occurs after painful ejaculation, indicating spermocystitis. This pain could be the result of a series of events, including infection, inflammation and local disruption of innervation. Erectile dysfunction was the main sexual sign. A much better result was found by Zhang Y. [14]. Orchiepididymitis was the main risk factor: 26.2%. This information is in line with the literature, which states that orchiepididymitis mainly affects young adults (20-40 years), most often secondary to an infection with a differential retrograde dissemination route as a result of inadequate choice or duration of treatment [15]. Practically speaking, the choice of antibiotics is guided by the nature of the germ isolated and its sensitivity to antibiotics (antibiogram). Recurrences are an indication for prolonged antibiotic treatment at a lower dose. It is accepted that recurrences with the same germ are not so much due to the acquisition of resistance to an active antibiotic as to the persistence of excluded infection sites, inaccessible to antibiotics. These infectious sites could be secondary to the presence of prostatic calculi or a glycoprotein matrix produced by bacteria. This is why some authors suggest the use of local antibiotic therapy administered by direct injection into the gland [16]. Orchiepididymitis is also reported to be one of the main urological disorders in Korean servicemen [17]. The rectal examination is very sensitive. Although other authors have reported a congested prostate producing pathological fluid [5, 8, 18], it could be said that chronic prostatitis has an effect on the prostate. In fact, whether it is pain or congestion, it is accompanied by a change in the prostate which (fortunately!) can easily be detected by digital rectal examination! In young patients with orchiepididymitis and a sensitive or congested rectum: consider chronic prostatitis, with the right choice of antibiotic with good prostatic distribution

and the right duration of treatment. Use the three-pillar rule for the use of antibiotics in urology developed by Eloundou N. et al. in Cameroon [19] for decision-making in our military environments: their study established three pillars for the use of antibiotic prophylaxis in urology, i.e.: knowing the profile of the local pathogen and its resistance to antibiotics; the risk factors for complications of infection in the patient, and adherence to the guiding principles for recommendations concerning urogenital infections. CBUE contributed very little in our study, as indicated by a number of other authors [8, 17]. Hence the need, whenever possible, to use the tests recommended for the diagnosis of chronic prostatitis, i.e. examination of prostatic fluids (EPF), which also offers improved sensitivity and specificity. By adopting the NIH classification, the results obtained show a high frequency of PCA (68% IIIa and 1%IIIb), as in many other authors [20]. Sperm culture is useful for differentiating between categories IIIA and IIIB of the NIH classification, but its sensitivity is inferior to that of the Stamey test for diagnosing CBP [9, 21], although it is indicated in cases where the latter is unavailable (difficulty in collecting prostatic secretions, for example). The spermogram was normal in 69.4% of cases. There was asthenospermia, oligospermia and even 06 cases of azoospermia. An oligospermia, especially that due to a decrease in sperm mobility, could be a cause of hypofertility. Fu W et al. have established a significant link between hypofertility and chronic prostatitis [22]. In the case of chronic prostatitis, the infection can be retrograde, reaching the vas deferens and testicles and significantly destroying the germ line, as well as compromising the production of fructose, carnitine and zinc. These important elements, contained in prostatic fluid, play a major role in the mobility and survival of spermatozoa, as well as the not inconsiderable role of oxidative stress. The combination antibiotic-alpha blocker was the most common. Same for Wang J. et al. , Mo. et al. who say that the combination of antibiotics and alpha-blockers gives better results compared to the use of the antibiotic or alpha-blocker alone [23, 24]. In chronic bacterial prostatitis, alpha-blockers seem to reduce the risk of clinical and bacteriological recurrence. In category III, chronic pelvic pain syndrome, alpha-blockers improve symptoms and quality of life. Alpha-blockers also seem to relieve symptoms and reduce the risk of acute urinary retention in patients suffering from benign inflammation of the prostate, either induced by radiation or heat. They seem to

improve lower urinary tract symptoms, including pain, in patients diagnosed with prostatitis and benign hyperplasia [25]. Our therapeutic combinations resulted in a high rate of success after three months, and very few failures at the end of the study.

## V. CONCLUSION

Our study showed that chronic prostatitis is common, and that orchiepidydimitis in singles, particularly young servicemen, needs to be carefully monitored as a major risk factor for chronic prostatitis. The treatment of STIs, but more importantly the choice of the best antibiotic with good prostatic distribution and adequate treatment duration based on the three pillars for the use of antibiotics in urology, are decisive. Furthermore, sperm culture has proved to be a diagnostic alternative of choice in the presence of long-standing scrotal or suprapubic pain, and a positive RT for decision-making in our military environments, particularly in the absence of other valid diagnostic methods (EPS).

## REFERENCES

- [1]. Vanden Bossche M, Roumeguère T. Prostatites chroniques : signes, diagnostic et traitements. EMC Urologie 2012; 5(1): 1-9 (Article 18-520-A-12).
- [2]. Pavone-Macaluso M. Chronic prostatitis syndrome: a common but poorly understood condition-Part I. EQU-EBU update series 2007;1-15
- [3]. Calhoun EA, McNaughton CM, Pontari MA, et al. The economic impact of chronic prostatitis. Arch Intern Med 2004; 164(11):1231-36.
- [4]. Krieger JN, Riley DE, Cheah PY, Liong ML, Yuen KH. Epidemiology of prostatitis: new evidence for a worldwide problem. World J Urol. 2003; 21:70-74. <https://goo.gl/Bjbs8l>
- [5]. Tounkara A. Prostatite Chronique : Aspect Epidemio Clinique Et Therapeutique Au Service D'urologie De L'hospital Gabriel Toure, Mali, 2006.
- [6]. Lee JH, Lee, S.W. Relationship between Premature Ejaculation and Chronic Prostatitis/Chronic Pelvic Pain Syndrome. The Journal of Sexual Medicine (2015) 12, 697-704. <https://doi.org/10.1111/jsm.12796>
- [7]. Roberts RO, Lieber MM, Bostwick DG, Jacobsen SJ. A review of clinical and

- pathological prostatitis syndromes. *Urology* 1997; 49: 809-821
- [8]. Thim RN et Simmons PD. Chronic bacterial prostatitis. *J. Urol* 1983, 55: 513-8
- [9]. Sibert L, Grise PH, Boillot B, Loulidi S, Guerin JG. Valeur diagnostique du test de Stamey dans les prostatites chroniques. *Prog Urol* 1996 ; 6 : 107-111
- [10]. Diallo PB. Aspect de la prostatite a l'HPG M. 1998; 2
- [11]. Sine B, Fall B, Sow Y, Bagayogo NA, Thiam A, et al. Chronic Prostatitis and Chronic Pelvic Pain Syndrome (CP/CPPS): Epidemiological, Clinical and Therapeutic Profile. *SRL Urol.* 2017;1(1): 001-005.
- [12]. Wagenlehner F, Van Till JW, Magri V, Perletti G, Houbiers J, Weidner W et al. National Institutes of Health Chronic Prostatitis Symptom Index (NIHCPIS, 2013)
- [13]. 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>
- [14]. Zhang Y, Zheng T, Tu X'an, Chen X, Wang Z, Chen S, et al. Erectile Dysfunction in Chronic Prostatitis/Chronic Pelvic Pain Syndrome: Outcomes from a Multi-Center Study and Risk Factor Analysis in a Single Center. (2016) *PLoS ONE* 11(4): e0153054. doi:10.1371/journal.pone.0153054
- [15]. Nickel JC. Prostatitis and Related Conditions, Orchitis, and Epididymitis. Chapter 11 In *Campbell-Walsh Urology*, Edited by Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA. Elsevier, Philadelphia, PA, 2011; in press.
- [16]. Yamamoto M, Hibi H, Satoshi K, Miyake K. Chronic bacterial prostatitis treated with intraprostatic injection of antibiotics. *Scand J Urol Nephrol* 1996 ; 30 : 199-20229
- [17]. Se Young Choi and Chang-gyo Yoon3, Urologic Diseases in Korean Military Population: a 6-year Epidemiological Review of Medical Records <https://doi.org/10.3346/jkms.2017.32.1.135> • *J Korean Med Sci* 2017; 32: 135-142
- [18]. Blacklock N.J. Les facteurs anatomiques des prostatites. *J.Urol.*1974.46-47-54
- [19]. Eloundou NJ, Feukam D, Mekeme J et al. Use of antimicrobial prophylaxis in urological procedure. *PAUSA* (13<sup>th</sup> ed) 2017.72
- [20]. Rimtebaye K., Sillong FD, Tashkand AZA et al. Clinical, Paraclinical and Therapeutic Aspects of Chronic Prostatitis. (2017) *Open Journal of Urology*, 7, 113-123. <https://doi.org/10.4236/oju.2017.78014>
- [21]. Meares EM Jr. Prostatitis and related disorders. In : Walsh PC, Retik AB, Stamey TA, Vaughan ED Jr eds. *Campbell's Urology* (7th ed). Philadelphia : WB Saunders, 1998 : 615-630
- [22]. Fu W, Zhou Z, Liu S et al . 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*, (2014) 9, e94991. <https://doi.org/10.1371/journal.pone.0094991>
- [23]. 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>
- [24]. Mo KI, Lee KS, Kim DG. Efficacy of combination therapy for patients with chronic prostatitis / chronic pelvic pain syndrome: a prospective study. *Korean J Urol.* 2006; 47: 536-540. <https://goo.gl/apF46n>
- [25]. Nickel JC. Alpha-Blockers for the Treatment of Prostatitis-Like Syndromes. MD Department of Urology, Queen's University, Kingston, Ontario, Canada [Rev Urol. 2006;8(suppl 4):S26-S34] © 2006 MedReviews, LLC In Category