

Expressed Prostate Secretion (EPS) Culture and Sensitivity Study in the Philippines: A Single Surgeon Experience

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Objective: Treatment of prostatitis continues to be a challenge. The authors evaluated the culture and sensitivity of expressed prostate secretion of patients with bacterial prostatitis in the local setting.

Materials and Methods: All patients who were suspected to have prostatitis underwent expressed prostate secretion cultures. All positive cultures were then included in the study.

Results: One hundred six (106) culture positive examinations were included in the study. *Staphylococcus* species were the most common organisms at 55% (59/106), followed by *Enterococcus* species at 17% (19/106). Over-all, Vancomycin was still the antibiotic the organisms were most sensitive to among all the antimicrobials regardless of organism cultured at 69% (74/106) followed by Ciprofloxacin at 43% (46/106)

Conclusion: The study showed some discrepancy with current known epidemiological studies on the incidence of the organisms causing bacterial prostatitis. It also showed that the current most commonly used antimicrobial agent (fluroquinolone) may have a high resistance rate that is not acceptable as an empiric treatment hence the investigators recommend at least the use of expressed prostate secretion culture study as guide for the management of prostatitis.

Keywords: Expressed Prostate Secretion, prostatitis, culture and sensitivity

Introduction

In men younger than 50 years old, prostatitis is the most commonly-diagnosed urologic disease.¹ It is estimated that up to half of all men suffer from symptoms of prostatitis at some time in their lifetime.^{2,3} Symptoms of prostatitis such as lower back, perineal and colonic pain, lower abdominal or suprapubic discomfort, lower urinary tract symptoms have considerably affected the quality of life of men of all ages.^{4,5} The prevalence rate of prostatitis-like symptoms ranges from 2.2% to 9.7%, with a mean of 8.2%.⁶ It has been a common practice to give empirical antimicrobial monotherapy as a first-line treatment

option to patients newly diagnosed with prostatitis. This study aims to showcase the common pathogens and their respective antimicrobial sensitivity in the local setting to further help in the management of this common disease.

Patients and Methods

The study population consisted of individuals diagnosed to have prostatitis by a single urologist from 2008 to 2017. Patients were seen either because of prostatitis-like symptoms or due to an incidental finding of a tender prostate upon

physical examination. Patients with known comorbidities, or with clear evidence of other urological diseases were excluded from the study. Individuals who received antibiotics or immunosuppressive treatment recently (<4 weeks) were also excluded from the study. Patients enrolled in the study had initially voided and had their meatus swabbed with antiseptic. Prostatic massage was done and the expressed prostate secretion samples were sent for culture and sensitivity studies. Data gathered were only the initials of the patient for anonymity, the organisms found in the culture and the antimicrobial agents that the organism was sensitive to. Cultures included in the study were only those who had moderate to severe growth culture result.

Results

A total of 106 organisms were found on culture. *Staphylococcus* species were the most common at 55% (59/106), followed by *Enterococcus* species at 17% (19/106) and by *Acinetobacter* at 10% (11/106).

Table 1. Organisms found on culture (a = 106)

Organisms	Count
<i>Acinetobacter</i>	11
<i>Brevindom</i>	1
<i>E. Coli</i>	5
<i>Enterobacter</i>	4
<i>Enterococcus</i>	19
<i>Klebsiella</i>	1
<i>Moraxella</i>	1
<i>Providencia</i>	1
<i>Pseudomonas</i>	4
<i>Staphylococcus</i>	59
Total	106

Vancomycin was the antibiotic *Staphylococcus* species were sensitive to at 91% (54/59) followed by Clindamycin at 50% (30/59) and Cotrimoxazole at 44% (26/59).

Over-all, Vancomycin was still the antibiotic the organisms were most sensitive to out of all the antimicrobials regardless of organism cultured

at 69% (74/106). It is followed by Ciprofloxacin at 43% (46/106) and Cotrimoxazole at 41% (41/106).

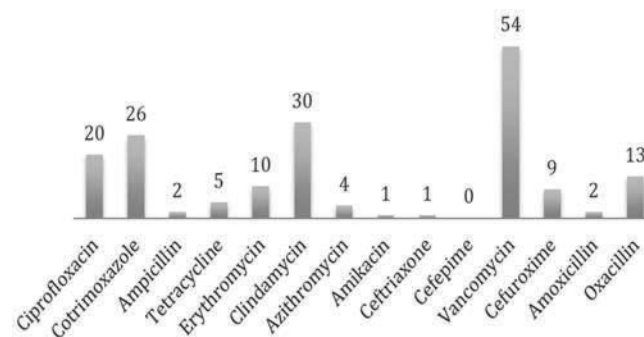


Figure 1. Antimicrobial sensitivity for staphylococcus.

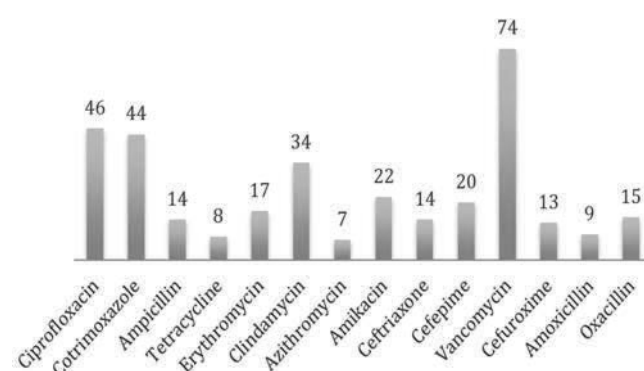


Figure 2. Over-all antimicrobial sensitivity.

Discussion

In men aged 18-35 years, prostatitis is the most frequent urological disease.⁷ It has been estimated that during one's lifetime the likelihood of acquiring chronic prostatitis is 5-16%.⁸ In the late 1990s, a consensus definition and classification system for prostatitis were established by the National Institutes of Health (NIH).⁸ Prostatitis syndromes comprise infectious forms (acute and chronic), the chronic pelvic pain syndrome (CPPS), and asymptomatic prostatitis.⁸ More than 90% of men with prostatitis-like symptoms are diagnosed to have CPPS.¹⁰ A plethora of clinical trials have been produced with the establishment of this classification system and results showed

that treatment of bacterial prostatitis relies on the adequate use of antimicrobial agents but successfully managing CPPS is still a formidable task.¹⁰

Currently, it has been considered that the mechanism for chronic prostatitis is the recurrence of a prostate infection.⁹ The reflux of contaminated urine into the prostatic urethra is also another proposed mechanism.⁹ This just shows the possible involvement of the neighboring anatomical structures to the development of chronic prostatitis. As with other studies, this study showed that gram-positive bacteria such as Staphylococcal species that form the normal flora of the anterior urethra might be a chronic prostatitis pathogen.³ In this study, Staphylococcal infection had the highest number of isolate at 55% (59/106) followed by another gram-positive bacteria *Enterococcus* sp. at 17% (19/106). Contrary to most studies that showed *E. coli* as the primary pathogen, only 4.7% (5/106) was isolated. This may actually be due to the fact that most of the patients diagnosed to have prostatitis are rampantly given antibiotic treatment. In the investigator's setting, patients diagnosed to have prostatitis always have been started with fluoroquinolones for 1 month. The investigator's experience showed that there have been a lot of patients who do not respond to the initial treatment and would require another antimicrobial agent. This may be due to that fact that a lot of patients have chronic or recurrent UTI, which may be due to their chronic indwelling catheterization. Current guidelines recommend the use of the Meares Stamey 4 Glass Urine Test (MSU) especially with patients suspected to have chronic bacterial prostatitis.¹² In the study, EPS culture and sensitivity was used instead of the MSU culture due to financial considerations and with the objective of only getting the prostate culture. Results then showed that the most common antibiotic used (Ciprofloxacin) for the empiric treatment of bacterial prostatitis was only 43% (46/106).¹¹ Vancomycin was still the antimicrobial the organisms are most sensitive to out of all the antimicrobials regardless of organism cultured at 69% (74/106) which may be explained for having a high number of gram (+) organisms in the study.

Conclusion

Current management of prostatitis in the setting has been difficult. This study has shown that there is no single empiric antimicrobial treatment suitable for the management of bacterial prostatitis. Although the number of subjects in the study was not large enough, the investigators suggest to at least have an EPS culture done with all patients suspected to have bacterial prostatitis to be guided with its management.

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