Scholars International Journal of Biochemistry
Abbreviated key title: Sch. Int. J. Biochem.
A Publication by "Scholars Middle East Publishers"
Dubai, United Arab Emirates

ISSN: 2616-8650 (Print)
ISSN: 2617-3476 (Online)

Prostatitis –Early Diagnosis and Treatment Can Avoid BHP

Dr. Anil Batta*
Head, Dept. of Medical Biochemistry, Govt. Medical College, Medical Enclave, Amritsar, Punjab, India

Review Article

***Corresponding author**
Dr. Anil Batta

Article History
Received: 01.11.2018
Accepted: 12.11.2018
Published: 30.11.2018

Abstract: Acute bacterial prostatitis is often caused by common strains of bacteria. The infection can start when bacteria in urine leak into your prostate. Antibiotics are used to treat the infection. If they don't eliminate the bacteria prostatitis might recur or be difficult to treat (chronic bacterial prostatitis). Nerve damage in the lower urinary tract, which can be caused by surgery or trauma to the area, might contribute to prostatitis not caused by a bacterial infection. In many cases of prostatitis, the cause isn't identified. Diagnosing prostatitis involves ruling out other conditions as the cause of your symptoms and determining what kind of prostatitis patient has have initial diagnostic tests might include: Urine tests. It might be necessary have a sample of your urine analyzed to look for signs of infection in your urine (urinalysis). Early warning signs of prostate cancer are Pain during urination. Due to the tumor surrounding the urethra, any person having prostate cancer can feel a lot of pain during urination. Blood can be seen in the urine, Leakage or dribbling urine, erectile problems. There are a number of tests which can be used to find out whether you have prostatitis. It can take some time to get a diagnosis - the symptoms of prostatitis can be similar to other problems such as urine infections, which can make it difficult to diagnose. A urine test to check for sign of infection. There are a number of tests which can be used to find out whether there is prostatitis. It can take some time to get a diagnosis. The symptoms of prostatitis can be similar to other problems such as urine infections, which can make it difficult to diagnose. A urine test to check for sign of infection and blood test to check prostatitis may be mandatory.

Keywords: Prostatitis, prostate cancer, urination, infection, dribbling urine.

INTRODUCTION

Diagnosing prostatitis involves ruling out other conditions as the cause of symptoms and determining what kind of prostatitis is there. Medical history, symptoms, physical exam, will likely include a digital rectal examination .are necessary. Initial diagnostic tests might include: Urine tests. Patient might have a sample of your urine analyzed to look for signs of infection in urine (urinalysis). Sample of urine may be sent to a lab to determine if for infection [1]. For Blood tests, samples of blood for signs of infection and other prostate problems are collected. Post-prostatic massage is done in rare cases massage of prostatitis and tests the secretions. Imaging tests are done in some cases, CT scan of urinary tract and prostate or a sonogram of prostate is done. CT scan images provide more detailed information than plain X-rays do. A sonogram is the visual image produced by an ultrasound. Based on your symptoms and test results, your doctor might conclude that you have one of the following types of prostatitis: Acute bacterial prostatitis. Often caused by common strains of bacteria, this type of prostatitis generally starts suddenly and causes flu-like signs and symptoms, such as fever, chills, nausea and vomiting [2]. Chronic bacterial prostatitis occurs when antibiotics don't eliminate the bacteria causing prostatitis. Between bouts of chronic bacterial prostatitis, patent may have no symptoms or only minor ones. Chronic prostatitis/chronic pelvic pain syndrome type of prostatitis is the most common and isn't caused by bacteria [3]. Often an exact cause can't be identified. For some men, symptoms stay about the same over time. For others, the symptoms go through cycles of being more and less severe. Asymptomatic inflammatory prostatitis type of prostatitis doesn't cause symptoms and is usually found only by chance when you're undergoing tests for other conditions. It doesn't require treatment. Risk factors for prostatitis include being a young or middle-aged, having had prostatitis, Having an infection in the bladder or the tube that transports semen and urine to the penis (urethra) Having pelvic trauma, such as an injury from bicycling or horseback riding, Using a tube inserted into the urethra to drain the bladder (urinary catheter), Having HIV/AIDS [4].

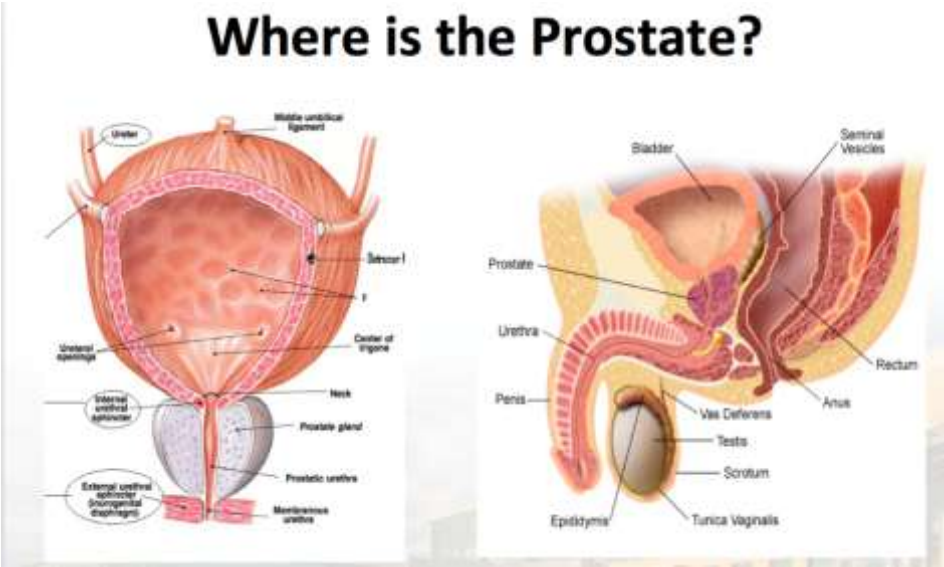

Fig-1: Prostate Location

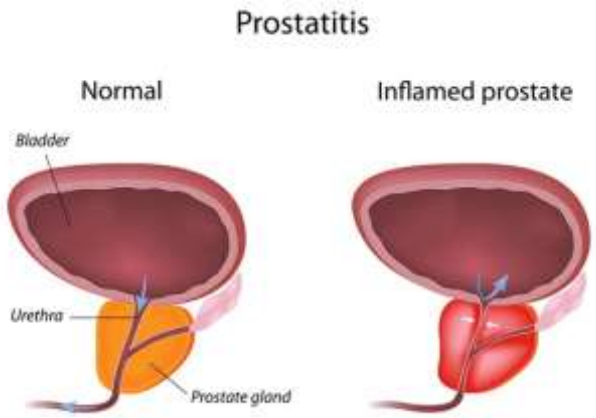

Fig: 2

Complications of prostatitis can include

Bacterial infection of the blood (bacteremia), Inflammation of the coiled tube attached to the back of the testicle (epididymitis), Pus-filled cavity in the prostate (prostatic abscess), Semen abnormalities and infertility, which can occur with chronic prostatitis [5].

Digital Rectal Exam

DRE makes this more comfortable by relaxing and urinating before the procedure. This helps in getting important information about the status prostate. DRE can help to determine the size of prostate and whether there are any abnormalities such as lumps or lesions. It is done by bending forward at the waist and rests arms on the examination table. The other way is to lie on your side on the table with knees pulled up to the check the size of prostate [6].

PSA Test

Prostate specific antigen (PSA) test with its use as a standard screening tool for prostate cancer, but the PSA test blood test can also help diagnosis prostatitis, especially the asymptomatic form of prostatitis, which does not have other symptoms. Some men with prostatitis have an elevated PSA, and an elevated PSA may be the only sign of the rare asymptomatic inflammatory prostatitis. Schedule the PSA test before digital rectal exam (DRE) because the DRE [5]. Patient should avoid other activities (like sexual activity, trauma to the area, or cycling) for a few days before as they can temporarily affect the numbers.

Urinalysis

The urine is examined for appearance, content, and concentration. For example, if the urine looks cloudy instead of clear you might have a urinary tract infection. Finding bacteria in the urine also indicates a urinary tract infection, which is common in men with chronic prostatitis. High levels of protein in urine might indicate kidney disease. Substances that can affect urinalysis results include diuretics, Dilantin (phenytoin), Rifadin and Rimactane (rifampin), Pyridium (phenazopyridine), vitamin B, beets, blackberries, and rhubarb.

Milking the Prostate

Milking the prostate, also known as prostate massage, is a technique used to improve blood flow to the prostate gland. It assists in eliminating toxins from the gland. Milking moves good stuff in and the bad stuff out [7]. This technique can help both prevent prostatitis and treat it. Milking the prostate is also good for helping treat other prostate conditions like enlarged prostate (benign prostatic hyperplasia, or BPH). Once making contact with the prostate apply gentle pressure to the gland and massage it. This should not be painful when done correctly.

Meares-Stanley "Four Glass Test"

The Meares-Stanley "Four Glass Test" to look at your urine for the presence of bacteria and white blood cells. There are four (three if a shortened version is used) conditions including the first urine released, urine caught midstream, secretions extracted by using prostate massage, and a sample of urine taken after the massage. Meares-Stanley "Four Glass Test" can be performed by taking just two samples (secretions from the prostate massage and the post-massage urine sample). It is 100% effective at identifying the type of bacteria and white cells. Study authors concluded that a simpler two-glass test is reasonable to use when they are first diagnosing prostatitis [4].

PPMT

The pre- and post-massage test (PPMT) is a simpler, less time-consuming, and less expensive screening test for diagnosing prostatitis when compared to the Meares-Stanley "Four Glass Test." To conduct the PPMT test, the doctor collects a urine sample from the patient both before and after performing prostate massage [1]. The samples are analyzed for signs of inflammation or infection. The results of the PPMT are about 90% accurate.

MRI and Ultrasound

This may include an MRI, ultrasound, or other imaging tests. These tests are more likely to be used when the suspected case of bacterial prostatitis [6]. The tests are followed in cases when patient suffers from bladder or kidney infections, an enlarged prostate, bladder cancer, or prostate cancer.

Cystoscopy

This procedure can help rule out a urethral stricture and see if any prostate stones are present or if there are other prostate problems such as tiny pouches, called diverticulae. This can help see structural problems that may be causing symptoms [8].

An administration of local, spinal, or general anesthesia can help. Side effects associated with Cystoscopy can cause swelling of the urethra, which can make it harder to urinate. Bleeding can occur.

Uroflowmetry

Uroflowmetry can help to determine if there is obstruction of normal urine outflow and allows to see the condition and function of the lower urinary tract. Before the test, the patient may be asked to drink four glasses of water. Then he will urinate into a device that records information while he urinates.

UPOINT

It was developed by a urologist to help doctors and patients customize treatment programs for managing CPPS. UPOINT stands for six domains: Urinary, Psychosocial, Organ specific, Infection, Neurologic/systemic, and Tenderness. A patient is classified as "yes" or "no" for each of the domains [6]. This allows seeing the problem areas and where the symptoms lie so he or she can provide the right kind of treatments that have proven to be effective for those problems.

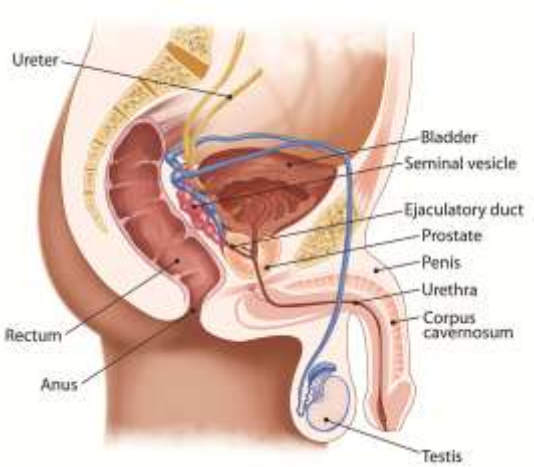

Fig-3: Prostatitis and BHP

Treatment

Prostatitis treatments depend on the underlying cause. They can include—Antibiotics which is the most commonly prescribed treatment for prostatitis. If patients have severe symptoms, he might need intravenous antibiotics. Oral antibiotics for four to six weeks but might need longer treatment for chronic or recurring prostatitis [9]. Alpha blockers medications help relax the bladder neck and the muscle fibers where your prostate joins your bladder. This treatment might ease symptoms, such as painful urination. Anti-inflammatory agents, Non-steroidal anti-inflammatory drugs (NSAIDs) might make you more comfortable. Prostatitis is swelling and inflammation of the prostate gland, a walnut-sized gland situated directly below the bladder in men [10]. The prostate gland produces fluid (semen) that nourishes and transports sperm. Prostatitis often causes painful or difficult urination. Other symptoms include pain in the groin, pelvic area or genitals and sometimes flu-like symptoms. Prostatitis affects men of all ages but tends to be more common in men 50 or younger. The condition has a number of causes. Sometimes the cause isn't identified. If prostatitis is caused by a bacterial infection, it can usually be treated with antibiotics. Depending on the cause, prostatitis can come on gradually or suddenly. It might improve quickly, either on its own or with treatment. Some types of prostatitis last for months or keep recurring (chronic prostatitis). Prostatitis signs and symptoms depend on the cause. They can include Symptoms are like pain or burning sensation when urinating (dysuria). Difficulty in urination such as dribbling or hesitant urination also present [3]. Frequent urination, particularly at night (nocturia) Urgent need to urinate Cloudy urine, Blood in the urine Pain in the abdomen, groin or lower back Pain in the area between the scrotum and rectum (perineum) [5] Pain or discomfort of the penis or testicles Painful ejaculation, Flu-like signs and symptoms (with bacterial prostatitis)

UPOINT Prostatitis Diagnosis and Treatment Therapies

UPOINT domain	Clinical Findings	Therapies
Urinary	Urinary frequency, urgency Obstructive voiding	Anticholinergics Alpha blockers
Psychosocial	Depression, anxiety, poor coping mechanisms, catastrophizing	Amitriptyline Counseling Referral to psychologist
Organ specific	Gently palpating prostate exacerbates typical symptoms	Consider initial antibiotic Quercetin, pollen extract Finasteride/clutasteride
Infection	Recurrent UTIs Bacterial localization	Antibiotics
Neurologic/Systemic	Pelvic neuropathic pain Other associated conditions (irritable bowel syndrome, fibromyalgia)	Tricyclic antidepressants Gabapentinoids
Tenderness	Tenderness or spasm of perineum or pelvic floor	Skeletal muscle relaxants Physiotherapy, local heat therapy, donut cushion, massage therapy

CONCLUSION

Reports published within the past 2 years strongly suggest an association between bacteria and chronic idiopathic prostatitis. Both molecular and specialized culture findings designed to detect fastidious and difficult-to-culture bacteria in prostatic tissue and fluids point to a possible etiologic role for these microorganisms [7]. The molecular data were particularly significant because prostate biopsy specimens were obtained for a population of men who could not be diagnosed by optimal clinical and microbiologic methods. Therefore, potential study subjects were excluded if they exhibited bacteriuria, bacterial prostatitis, or urethritis or if they had a urethral culture that was positive for urogenital pathogens [11]. The most convincing finding is the strong correlation between inflammation in the expressed prostatic secretions and detection of 16S rRNA genes in prostatic tissue ($P < 0.001$). It is unlikely that the demonstrated molecular and cultural evidence represents contamination, because of the extreme care taken in procuring and handling the clinical specimens, including the use of a double-needle biopsy method to limit skin contamination and positive and negative controls incorporated in the molecular experiments as well as an internal housekeeping gene control [12]. It will be important to classify the sequences of the isolated organism at the genus and species level, since this has not yet been accomplished for the amplified bacterial nucleic acids derived from prostate tissue.

Vision for Future

Future studies should be directed toward more nucleic acid-based experimentation to define the microbiology of the prostate gland and to determine the relationship of these bacteria to chronic idiopathic prostatitis [13]. Once the etiology is known, a logical next step would be to devise methods for delivery of antimicrobial or immune reagents which might help eliminate the foci of infection in prostatic tissue [14]. There is an urgent need to better understand the virulence properties of bacteria that are associated with chronic infection of the prostate. Identifying such a factor(s) would be helpful in devising effective treatment strategies. It is important to determine whether there is persistence of bacterial antigens in prostatic tissue and fluids, since these antigens could trigger immunologic and biochemical events that may result in initiation and maintenance of chronic inflammation in this troublesome condition. For those ascribing to an autoimmune theory, it will be necessary to identify the antigen(s) in human idiopathic prostatitis that initiates immune system pathologic changes and to rule out the possibility that this antigen(s) is not derived from microbes.

REFERENCES

1. Robles, J. M., Morell, A. R., De Torres Mateos, J. A., & Roselló, A. S. (1989). Clinical behaviour of prostatic specific antigen and prostatic acid phosphatase: a comparative study. *The International Journal of Biological Markers*, *4*(2), 87-94.
2. Bunting, P. S. (1995). A guide to the interpretation of serum prostate specific antigen levels. *Clinical biochemistry*, *28*(3), 221-241.
3. van Dieijen-Visser, M. P., Delaere, K. P. J., Gijzen, A. H. J., & Brombacher, P. J. (1988). A comparative study on the diagnostic value of prostatic acid phosphatase (PAP) and prostatic specific antigen (PSA) in patients with carcinoma of the prostate gland. *Clinica chimica acta*, *174*(2), 131-140.
4. Dupont, A., Cusan, L., Gomez, J. L., Thibeault, M. M., Tremblay, M., & Labrie, F. (1991). Prostate specific antigen and prostatic acid phosphatase for monitoring therapy of carcinoma of the prostate. *The Journal of urology*, *146*(4), 1064-1067.
5. Kunimi, K., Amano, T., Lee, S. W., Fuse, H., Uchibayashi, T., Miyazaki, K., & Ohkawa, M. (1995). Comparative clinical features of stage A1 and stage A2 prostate cancers. Is the concept of stage A changing from the current status?. *International urology and nephrology*, *27*(5), 575-585.
6. Drago, J. R., Badalament, R. A., Wientjes, M. G., Smith, J. J., Nesbitt, J. A., York, J. P., ... & Neff, J. C. (1989). Relative value of prostate-specific antigen and prosttic acid phosphatase in diagnosis and management of adenocarcinoma of prostate Ohio State University Experience. *Urology*, *34*(4), 187-192.
7. Cooke, R. R., Nacey, J. N., Beeston, R. E., & Delahunt, B. (1992). The efficacy of serum prostate specific antigen as a tumour marker in prostatic carcinoma: a comparison with serum acid phosphatase. *The New Zealand medical journal*, *105*(941), 345-347.
8. Lowe, F. C., & Trauzzi, S. J. (1993). Prostatic acid phosphatase in 1993. Its limited clinical utility. *The Urologic clinics of North America*, *20*(4), 589-595.
9. Mortarelli, E. A. (1992). Prostate specific antigen and prostatic acid phosphatase measurements for the follow-up of patients with prostate cancer. *Annals of Clinical & Laboratory Science*, *22*(4), 201-206.
10. Meyer, F., & Fradet, Y. (1998). Prostate cancer: 4. Screening. *CMAJ: Canadian Medical Association Journal*, *159*(8), 968.
11. Shimizu, T. S., Uchida, T., Satoh, J., Imai, K., & Yamanaka, H. (1995). Prostate-specific antigen in mass screening for carcinoma of the prostate. *International journal of urology*, *2*(4), 257-260.
12. Shih, W. J., Gross, K., Mitchell, B., Collins, J., Wierzbinski, B., Magoun, S., & Ryo, U. Y. (1992). Prostate adenocarcinoma using Gleason scores correlates with prostate-specific antigen and prostate acid phosphatase measurements. *Journal of the National Medical Association*, *84*(12), 1049.
13. Burnett, A. L., Chan, D. W., Brendler, C. B., & Walsh, P. C. (1992). The value of serum enzymatic acid phosphatase in the staging of localized prostate cancer. *The Journal of urology*, *148*(6), 1832-1834.
14. O'Donoghue, J. M., Rogers, E., Grimes, H., McCarthy, P., Corcoran, M., Bredin, H., & Given, H. F. (1993). A reappraisal of serial isotope bone scans in prostate cancer. *The British journal of radiology*, *66*(788), 672-676.