Title

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Author

Goldsmith, Jeffrey S.

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CLINICAL VIGNETTE

Use of Prostate Specific Antigen in the Evaluation and Treatment of Acute Bacterial Prostatitis

Jeffrey S. Goldsmith, MD

Case 1

A 70-year-old male with known benign prostate hyperplasia presented to the office with three days of burning at the end of urination, a subjective decreased stream and a sense of incomplete emptying. He had chills the night prior without fever. He was afebrile in the office and a urine point of care study was positive for leukocytes and blood.

He was empirically started on oral antibiotics. An organism was identified in his urinalysis as well as a marked elevation in his baseline PSA. While his symptoms resolved within the first week of therapy, he was treated empirically for acute bacterial prostatitis for 4 weeks with appropriate antibiotics. His follow-up and subsequent PSA values normalized to previous baseline levels.

Component *Latest Ref Rng & Units*	11/6/12	11/12/13	2/5/14	3/3/14
PSA,Screening *0 - 6.5 ng/mL*	1.47	1.3	30.8 (HH)	1.8

Component *Latest Ref Rng & Units*	11/14/14
PSA,Screening *0 - 6.5 ng/mL*	1.6

Case 2

An otherwise well 40-year-old male presented to the office after having completed a 10-day course of fluoroquinolone antibiotic for presumed urinary tract infection. He had been seen at an outside urgent care facility, and 4 days after completing this treatment, he began to experience more burning with urination. His original urine culture as well as screening for chlamydia and gonorrhea were all reported as negative. The urinalysis at the follow up office evaluation showed large leukocytes. Repeat urine culture showed a quinolone resistant bacteria as well as elevation in PSA levels. He was treated with 4 weeks of trimethoprim/sulfamethoxazole for suspected bacterial prostatitis and follow up urinalysis and subsequent PSA tests remained 1/3 presenting levels.

Component *Latest Ref Rng & Units*	10/14/15	11/9/15	9/7/16	10/16/17
PSA,Screening *See Reference Range ng/mL*	3.4 (HH)	1.4	1.2	1.2

Component *Latest Ref Rng & Units*	10/22/18
PSA,Screening *See Reference Range ng/mL*	1.0

Discussion

Acute bacterial infections of the prostate are a common though potentially misdiagnosed genitourinary disorder. The causative organisms are similar to those affecting the urethra and bladder, though duration of treatment required to ensure eradication of the organism is markedly longer- typically 4-6 weeks.[1,2] Studies have not reliably demonstrated that urine cultures adequately predict the presence of acute prostatitis. Less than 50% of cases tested revealed an organism, and the urine culture was less predictive than subjective symptoms of urgency and reduced flow or objective fevers.[3] In the primary care environment, the subjective assessment of the prostate gland as a mechanism of diagnosis is limited by experience. It cannot be tracked objectively over time, and prostate massage in the context of a potential acute bacterial prostatitis is painful and may be contraindicated.[4]

Prostate-specific-antigen is a protein produced by prostate epithelial cells. While the purpose of use in clinical medicine is early detection of prostate malignancy, PSA will elevate in the context of benign glandular enlargement, as well as the acute inflammatory state of bacterial prostatitis. PSA elevation with fever consistently was correlated with radiographically proven acute bacterial prostatitis.[5] The advantages of the use of PSA levels in decision-making and diagnosis of acute bacterial prostatitis include its specificity to the prostate tissue, test availability, and prolonged elevation days to weeks after treatment may have been initiated.[6]

The typical duration of treatment of infections of the urogenital tract differs depending upon the anatomic location. Acute pyelonephritis may require up to two weeks of therapy, while

urethritis and cystitis require shorter durations of antibiotic therapy.[7] Having a readily available marker that can be tracked over time can assist the treating MD in committing patients to the prolonged duration of treatment that is required in the complete eradication of the acute bacterial prostate infection.

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