
COMMENTARY

Infectious complications following prostate biopsy: a problem with need for solution

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In the absence of antibiotic prophylaxis, bacteremia and bacteriuria following transrectal ultrasound guided prostate needle biopsy (TRUS-PNBx) occur in 16% and 44% of cases, respectively.¹ Fluoroquinolones have historically provided optimal TRUS-PNBx prophylaxis.² Unfortunately, fluoroquinolone resistance among microorganisms has dramatically increased which has translated to an increased risk of PNBx infectious complications attributable to quinolone resistant *E. Coli* isolates.^{3,4} Such infections can present as urinary tract infections, acute sepsis, or in a more indolent manner as described in the preceding article by Bayne and colleagues.⁵ Even these more indolent type presentations, however, incur significant morbidity as highlighted by the need for prolonged intravenous antibiotics, ICU admission, and eventual percutaneous drainage of a seminal vesicle abscess.⁵ Clearly, the rising rate of quinolone resistance necessitates alternative prophylaxis strategies for TRUS-PNBx procedures. In this regard, a few different avenues have been explored. Several groups have demonstrated that addition of intravenous or intramuscular aminoglycoside antibiotic to oral ciprofloxacin can reduce sepsis episodes post-biopsy.^{6,7} Such a strategy, while efficacious in these series, may be limited in part due to aminoglycoside toxicity (i.e. renal) and the potential for developing future resistant organisms.

Another recently explored methodology incorporates pre-operative rectal swab screening of TRUS-PNBx patients to identify quinolone-resistant organisms.⁸ If these organisms are detected, a "targeted" prophylactic antibiotic regimen is used based on that patient's bacteria sensitivity profile.⁹ The actual process of obtaining these swabs, selectively culturing on quinolone selective medium, and tailoring of antibiotics however requires additional clinical and laboratory resources that may not be readily available in all clinical practices.

Finally, administration of a topical antiseptic to the rectal vault just prior to biopsy may present an alternative strategy. Povidone iodine is a commonly used topical antiseptic that dramatically reduces microorganism colonies when applied to a surgical site. A recent prospective, randomized study found that rectal cleansing with povidone-iodine was safe and indicated a 42% relative risk reduction (albeit not statistically significant, $p = 0.15$) in infectious complications.¹⁰

Multiple innovative strategies are emerging to target infections post-biopsy. Such studies are increasingly paramount given the increased scrutiny for iatrogenic infections and critical analysis of morbidity of prostate cancer screening. □

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