

Evaluation of Pre-Biopsy Rectal Swabs, Augmented Antibiotics, and Formalin Needle Disinfection on Rates of Transrectal Prostate Biopsy Complications

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INTRODUCTION AND OBJECTIVES: The last two decades have witnessed an increase in sepsis following transrectal prostate biopsy (TRPB), predominantly due to a rise in fluoroquinolone resistance. As a result, numerous strategies have been proposed to decrease sepsis related complications. We assessed our institutional trends for biopsy related complications following the implementation of augmented antibiotics, rectal swab culture-directed antibiotics, and use of formalin needle disinfectant technique.

METHODS: Patients undergoing TRPB were identified by reviewing a prospectively maintained clinical registry. The use of augmented antibiotics and rectal swab culture-directed antibiotics was introduced in 2013. Formalin needle disinfectant technique following each biopsy core was introduced in 2016. To evaluate the impact of these techniques on morbidity, post-biopsy complication rates following implementation of augmented and culture-directed prophylaxis (2013-2015) and after addition of formalin needle disinfectant technique (2016) were compared to complication rates prior to modification of our biopsy protocol (2012).

RESULTS: A total of 2,549 patients underwent TRPB during a 5 year period. In 2012, prior to protocol modification, infectious complications occurred in 1.9% of patients, consisting of sepsis in 0.63%, UTI in 0.63%, and post-biopsy fever in 0.63%. Following the introduction of rectal swabs and augmented antibiotics in 2013, 63.23% of patients received culture-directed antibiotics and 13.7% received augmented IV/IM prophylaxis. Between 2013 and 2015, sepsis, UTI, and post-biopsy fever rates were 0.28% ($p=0.29$), 0.98% ($p=0.75$), and 1.54% ($p=0.29$), respectively. In 2016, following implementation of both rectal swabs and formalin needle disinfectant technique, rates of sepsis, UTI, and post-biopsy fever were 0.00% ($p=0.08$), 0.37% ($p=0.62$), and 1.24% ($p=0.53$), respectively. A time trend analysis of complication rates is provided in Figure 1.

CONCLUSIONS: Following incorporation of both culture-directed antibiotics and formalin needle disinfectant technique, a trend towards decreased sepsis rates (0.00%, $p=0.08$) was achieved at our institution. This regimen thus has the potential to dramatically reduce or eliminate post-biopsy sepsis.

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