

Testing for drug-resistant bacteria before prostate biopsy can reduce infections

December 8 2014

Some infections after prostate biopsy due to drug-resistant *Escherichia coli* can be thwarted by simple rectal swab cultures prior to the procedure. The cultures test for antibiotic-resistant *E. coli*, and the findings are used to direct the selection of antimicrobial prophylaxis used for the procedure, according to Rhode Island Hospital researchers. The study was recently published in *Urology*.

For patients undergoing transrectal ultrasound (TRUS)-guided biopsies, Ciprofloxacin may not be the best prophylactic option to use for patients colonized with Ciprofloxacin-resistant *E. coli*.

"Aware of the increasing number of resistant strains of *E. coli*, our urologic physicians sought to decrease the number of post-biopsy infections and readmissions by conducting cultures on patient fecal samples to identify antibiotic-resistant strains before the biopsy is done, and the results were used to make the best antibiotic choice for prophylaxis," said Leonard Mermel, D.O., medical director of the department of epidemiology and [infection](#) control at Rhode Island Hospital. "As effective as biopsies are for diagnosing cancer, they do carry some risk of infection."

Nearly 1 million prostate biopsies are conducted in the U.S. annually, according to the Centers for Disease Control and Prevention. Of those, 209,292 men in the U.S. were diagnosed with prostate cancer. Most post-biopsy infections are caused by *E. coli* and arise from direct inoculation of bacteria from the rectal mucosa in the urinary tract and surrounding

area. The reported rates of post-biopsy infections range for 2 to 6 percent, and overall hospital readmissions have been reported as high as 6.3 percent.

For the study at Rhode Island Hospital, researchers assessed the incidence of fluoroquinolone resistance in *E. coli* of adult patients undergoing prostate biopsy and evaluated the effect of culture-directed prophylaxis on the risk of infectious complications after biopsy. Researchers found that 12.8 percent of the patients had preexisting, drug-resistant *E. coli* on the rectal swab cultures. They noted that there was a lower likelihood of post-biopsy infections (1.9 percent vs. 2.9 percent) and a decreased adjusted risk of infectious complications for patients receiving prophylaxis based on pre-biopsy rectal swab culture results as compared to those patients who underwent the procedure without the pre-biopsy rectal swab cultures, but the differences didn't reach statistical significance because of the study size. Nevertheless, [patients](#) who did not have the pre-biopsy rectal swab cultures done and who developed an infectious complication after the biopsy had longer hospitalizations for post-procedure infection (3 days versus 1.6 days) and 40 percent required continued outpatient treatment with IV antibiotics for those infections, compared with the 16.6 percent of the group treated with culture-directed antibiotics.

"As men are increasingly opting for active surveillance of [prostate cancer](#), infectious risks associated with [prostate biopsy](#) are becoming particularly relevant," said Jessica Dai, M.D., a co-author who is now with the University of Washington. "We hypothesized that the incidence of infections would decline after instituting this new screening process, and they did. Not only did we see that, we also met our secondary aim of establishing the local incidence of fluoroquinolone-resistant and extended-spectrum beta-lactamase (ESBL)-producing bacteria in rectal swab cultures."

Provided by Lifespan

Citation: Testing for drug-resistant bacteria before prostate biopsy can reduce infections (2014, December 8) retrieved 25 April 2024 from <https://medicalxpress.com/news/2014-12-drug-resistant-bacteria-prostate-biopsy-infections.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.