Impact of selective media for detecting fluoroquinolone-insusceptible/extended-spectrum beta-lactamase-producing *Escherichia coli* before transrectal prostate biopsy

Takuya Sadahira, Koichiro Wada, Motoo Araki, Ayano Ishii, Toyohiko Watanabe, Yoshitsugu Nasu, Masaya Tsugawa, Tadasu Takenaka, Yasutomo Nasu, Hiromi Kumon

First published: 20 September 2017  Full publication history

DOI: 10.1111/j.1347

Cited by (CrossRef): 0 articles  

Abstract

Objectives

To investigate the prevalence of fluoroquinolone-insusceptible and/or extended-spectrum beta-lactamase-producing *Escherichia coli* colonizing in the male rectum before transrectal prostate biopsy.

Methods

We carried out a prospective cohort study of men undergoing transrectal prostate biopsy. CHROMagar Orientation originally supplemented with levofloxacin and CHROMagar Orientation/extended-spectrum beta-lactamase were used for detecting fluoroquinolone-insusceptible and extended-spectrum beta-lactamase-producing *Escherichia coli*. Rectal specimens were collected before prostate biopsy, and the results of cultures in the selective medium were compared with drug susceptibility measured by standard methods. Targeted prophylactic antimicrobials were administered to patients with drug-resistant *Escherichia coli* and the incidence of postoperative prostatitis was investigated. In the case of prostatitis, pathogens preoperatively isolated from the rectum and those from urine were compared using pulsed-field gel electrophoresis.

Results

Rectal colonization of fluoroquinolone-insusceptible or extended-spectrum beta-lactamase-producing *Escherichia coli* was detected in 217 of 694 (31.3%) and 85 of 640 (13.3%) participants, respectively. The sensitivity and specificity of fluoroquinolone-insusceptible selective media were 96.8% and 88.2%, respectively. A total of 618 participants underwent transrectal prostate biopsy, and postoperative acute prostatitis was observed in four of 618 (0.6%) participants. *Escherichia coli* strains isolated preoperatively from the rectum and postoperatively from urine were found to be identical.

Conclusions

The present findings showed accuracy and performance of the selective media. Screening cultures before transrectal prostate biopsy using selective media seems to be helpful for guiding antibiotic prophylaxis and thus decreasing the rate of post-biopsy acute prostatitis.