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Rectal swab cultures prior to transrectal prostate biopsy: Among Gram-negative isolates, in 42% of samples non-E.coli species are present

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Introduction & Objectives: Transrectal ultrasound guided prostate biopsy is still the most frequently used method to confirm prostate cancer. Despite being a save diagnostic procedure, infectious complications may occur and antibiotic prophylaxis is required. An increasing number of resistant bacteria and rising awareness of antibiotic side effects (quinolone restrictions) have risen concerns about the optimal antibiotic prophylaxis regimens. Due to very good in vitro sensitivity of E.coli to some alternative antibiotics (for example fosfomycin-trometamol), it may be tempting to change regimens. Analyzing rectal swab cultures, taken prior to biopsy, we aimed to estimate if E.coli sensitivity is enough for antibiotic selection prior to transrectal prostate biopsy.

Materials & Methods: Starting in 6/2017, 1-2 weeks before prostate biopsy, every patient got a rectal swab. Electronic medical records have been reviewed for antibiograms. Susceptibility results were analyzed per bacteria and, probably more important for practicing urologists, per patient for Gram negative and all isolates, in accordance with FRAT principle (formula to help select rational antimicrobial therapy).

Results: In 302 analyzed samples, one bacteria species was reported in 34%, two in 43%, three in 21% and four species in 2% of samples. In two samples (0,7%), only Gram positive species were identified (possible sampling error). Among Gram negative isolates, in 5% of patients, there were no E.coli isolates. In further 37% of patients, in addition to E.coli, other Gram negative species were identified: Klebsiella (19% of patients), Enterobacter (13%), Citrobacter (9%), Pseudomonas (6%) and Proteus (4%). Sensitivity of E.coli to ciprofloxacin was 92% and to fosfomycin-trometamol 100%. Sensitivity of Klebsiella to forfomycin-trometamol was 80%. Among Gram negative isolates, analyzed per patient, sensitivity to ciprofloxacin was 89,3%, cefuroxime 85,3% , fosfomycin trometamol 79,3%, trimethoprim 73,3% and amoxicillin with clavulanic acid 71,3%. In 43% of samples, in addition to Gram negative, also Gram positive species were reported: Streptococcus (127 samples, 42%) and Staphylococcus (7 samples, 2%). They were often resistant to ciprofloxacin but sensible to levofloxacin.

Conclusions: In rectal swab cultures, Gram negative species other than E. coli are often present. Their resistance patterns diverge from E. coli resistance patterns. This should be taken into account when selecting optimal prophylactic antibiotic regimen. Significance of Gram positive isolates is unclear.