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Abstract no.: PR. 8

Comparison of incidence of post-TRUS prostate biopsy infection with different prophylactic antibiotics regimens

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Background
There was a notable increase in infection rates following transrectal ultrasound guided prostate biopsies (TRUS biopsy) with prophylactic Ciprofloxacin plus Metronidazole (CM) in 2022. Upon reviewing culture results from these patients, it was discovered that several organisms were sensitive to Amoxicillin plus Clavulanic acid (Augmentin). As a result, the standard prophylactic antibiotic regimen was changed from CM to Augmentin alone since 2023.

Objectives
To compare the incidence of infection after prophylactic CM and Augmentin monotherapy in patients undergoing TRUS biopsy.

Patients and Methods
This was a multicenter retrospective review of patients from August 2022 to May 2023 who underwent TRUS biopsy. The primary outcome was the rate of pooled infectious complications (including all types of infectious complications, i.e. fever, sepsis, symptomatic UTI) with prophylactic CM or Augmentin monotherapy. Secondary outcomes included the causative organisms and their antibiotic sensitivity.

Results
Twenty-four out of 121 patients with prophylactic CM and 29 out of 84 patients with Augmentin monotherapy developed infectious complications after TRUS biopsy (19.8% vs 34.5%, p=0.023). Among the 53 patients who had post TRUS biopsy infection, 16 had positive blood or urine cultures (8 with prophylactic CM and 8 with Augmentin monotherapy), the causative organisms being Escherichia coli (n=12), Klebsiella pneumoniae (n=2) and Enterobacter species (n=2). Out of the 16 cases, 11 (69%) were sensitive towards Augmentin (Table 1); 8 of these patients received prophylactic CM, and the remaining 3 patients received prophylactic Augmentin monotherapy. Of 7 cases tested for sensitivity to fluoroquinolone, only 2 (29%) of them were susceptible to either ciprofloxacin or levofloxacin.

Conclusions
Compared to Augmentin monotherapy, prophylactic CM therapy resulted in fewer infectious complications post TRUS biopsy. Patients who developed infectious complications despite prophylactic CM therapy were likely to be due to causative organisms that are sensitive to Augmentin. However, Augmentin monotherapy was unable to prevent infectious complications due to apparently Augmentin-sensitive organisms in some patients. Thus, a multidrug prophylactic regimen is recommended, with Augmentin being one of the agents.