Transrectal Ultrasound Guided Prostate Biopsy Antibiotic Prophylaxis: Standard vs. Augmented Antibiotic Regimens, and the Role for Pre-Biopsy Rectal Swab Cultures

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Background

- Current AUA guidelines recommend a single dose of fluoroquinolones (FQs) or cephalosporins prior to transrectal prostate biopsy.
- FQs are standard in the prophylaxis of transrectal prostate biopsies; however, they have come under scrutiny as a result of increasing resistance and FDA Black Box warnings.

Objectives

- To evaluate peri-procedural antibiotic prophylaxis regimens based on pre-procedural rectal swab cultures.
- To evaluate infection rates between transrectal biopsy patients receiving FQs alone and those receiving ceftriaxone or gentamicin in addition to FQs.

Materials and Methods

Demographics

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Immuno-compromised</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age Range</td>
<td>Total</td>
</tr>
<tr>
<td>45-86</td>
<td>95</td>
</tr>
<tr>
<td>Median Age</td>
<td>65</td>
</tr>
<tr>
<td>Total # Patients</td>
<td>274</td>
</tr>
<tr>
<td>Rectal Swab</td>
<td>Total</td>
</tr>
<tr>
<td>30</td>
<td>9</td>
</tr>
<tr>
<td>Swab</td>
<td>51</td>
</tr>
<tr>
<td>No Swab</td>
<td>0</td>
</tr>
<tr>
<td>Resistance</td>
<td>Rate of Infection by Antibiotic</td>
</tr>
<tr>
<td>FQ resistant</td>
<td>7 23.3% Cipro Only 3/131 2.3%</td>
</tr>
<tr>
<td>No Resistance</td>
<td>23 76.7% Augmented 4/143 2.8%</td>
</tr>
</tbody>
</table>

Retrospective study of a cohort of 274 males between age 43-86, undergoing Transrectal Ultrasound (TRUS) guided Prostate Biopsy between 8/2016 to 3/2017

- Post-biopsy infection defined as fever or confirmed urinary tract infection within 2 weeks of biopsy
- Cohort was also subdivided into groups receiving standard antibiotic prophylaxis with Ciprofloxacin or augmented antibiotic prophylaxis with Ciprofloxacin AND Ceftriaxone, Gentamicin, or Zosyn

Results

- 274 males ages 43-86 (median 65) underwent TRUS biopsy. 30 underwent pre-biopsy rectal swab, 0 infections. 9 patients without rectal swab cultures had post biopsy infections (3.7%). (Figure 1)
- 131 patients received standard antibiotic regimen, 5 had post biopsy infection (3.8%). 143 patients received augmented antibiotic regimen, 4 had post biopsy infection (2.8%). (Figure 2)

Conclusions & Limitations

- A trend toward decreased infection rates in augmented prophylaxis as compared to fluoroquinolones alone
- Retrospective data collection on a small sample size
- Lack of standardized antibiotic prophylaxis protocol

Future Implementation

- Standardized rectal swab and pre-procedural prophylaxis protocol
- Prospective data collection and cost benefit analysis of rectal swab-guided prophylaxis vs. standard prophylaxis regimen