Experience with fluoroquinolone (and other) resistance

- Events are rare, with 1-2 hospitalizations annually for post TRPB sepsis, but when it occurs isolates are E coli or Klebsiella resistant to fluoroquinolones (and usually resistant to trim-sulfa). [CA]
- Our urologists were using moxifloxacin empirically for several years, despite ID advice to use ciprofloxacin or levofloxacin instead. Over the last few years, our quinolone susceptibility has sharply declined for Gram negative bacilli. After advising them of several failures with sepsis & organisms resistant to quinolones, including presenting them with several months' prospective review of sepsis cases admitted within 48H of TRPB, they have switched to IV aminoglycoside +/- levofloxacin (varies). Our post-TRPB sepsis rates were never actually high compared to published averages, but they had been severe enough to warrant admission & draw the notice of our hospitalists, to whom these patients were admitted. [FL]
- Had infection following fluoroquinolone rx with resistant isolate. Our order sets have a cephalosporin as preferred agent but we allow any SCIP-compliant regimen. We are removing fluoroquinolones from order set as monotherapy for non-blactam allergic patients because of resistance [GA]
- I have seen more problems in patients having instrumentation of the urinary tract (eg, ureteral stents). Several have become septic while on Cipro prophylaxis. Most have FQ-resistant Gram-negative (mostly E. coli). [MO]
- We have studied this problem and presented our data at national meetings Scales C, Chen LF, Staheli R, Sexton DJ, Anderson DJ, Inman B. Epidemiology, antibiotic resistance and variation in management of bloodstream infections following transrectal prostate biopsy procedures. Abstract #151. Presented at the southeaster section of the American Urologic Association 75th Annual Meeting, New Orleans LA March 17-20, 2011. [NC]
- For a long time, the Urols gave cipro 1-2 days before TRPB. 2-3 years ago we started having FQ-resistance E. coli bacteremia breakthrough. I postulated that they were selecting for increased percent R organisms in stool, so had them switch to giving the cipro an hour before TRPB. No cases of bacteremia since then. [CA]
- 30-35 percent of our E. coli quinolone resistant [CA]
- We began culture-driven prophylaxis about 2 yr ago after multiple cases of ESBL E coli or similar quinolone-resistant infections (which was our default prophylaxis) post-Bx. Since adoption by Urology section of culture-driven protocol (developed jointly by ID/Pharm/Urol) we have seen rare to no infections. Can share numbers if desired [WI]
- Essentially all cases of post bx sepsis have been due to FQ resistant, cefepime sensitive Pseudomonas. The urologists feel obligated to pretreat with quinolones and to continue x3 days. But in patients who receive a single dose of cefepime immediately prior, sepsis incidence appears to be zero so far. [NJ]
- We see mainly cipro resistant isolates and prophylax with cipro/ceftriaxone. [MA]
- Most cases that come to the ID consult attention have been ESBL organisms, with bacteremia. [MA]
• The problem became so severe here that we have switched to pre-procedure rectal cultures which are used to guide prophylactic antibiotic choice. Have not seen a case since. Our cipro resistance is about 30% (E coli). [CA]

• We have had a lot of patients given cipro followed by sepsis with E. coli resistant to cipro [PA]

• We had a problem with quinolone resistant GNRs; better since cefpodoxime added. [OR]

• We have the same problem with biliary procedures. A quinolone was used for prophylaxis for years but many of the gram negative and enterococcal infections we see post-procedure are resistant to quinolones. [CO]

• ESBL E. coli and quinolone resistant E. coli increased yet cipro very ingrained in prescribing habits of especially private practice urologists [PA]

• Most common failure has been with FQ resistant organisms [NJ]

• Multiple episodes of bacteremia when cipro used as prophylaxis. All were cipro-resistant. None since changing to ceftriaxone [NE]

• Last septic shock patient had an E. coli "S" to the cipro used for prophylaxis. [NE]

• We saw a dramatic increase when only Fq were used about 4-5 years ago, but much less now that other forms of ppx are used [WI]

• Organism typically resistant to a fluoroquinolone. We do not recall if the organism(s) are resistant to aminoglycosides. Urologist informed me that he sees more infections in those patients who have undergone repeated biopsies. We have had few infections prior to and post commencement of prophylactic antibiotics. Unclear if change in prophylaxis had any impact on the frequency of infection as we had so few infections prior to changing the prophylaxis. [FL]

• ESBL or quinolone resistant species usually the issue in cases of post biopsy illness [NY]

• Lots of quinolone failures, mostly in those with prior quinolone exposure but also in some with none. Some urologists now using combo or new regimens often Augmentin and quinolone [NY]

• Have seen several cases of post-TRPB bacteremia including with ESBL + organisms [FL]

• We’ve seen an unusually high rate of post-prostate biopsy ESBLs or KPCs when they come in septic or with UTIs and positive blood cultures post biopsy. Almost all of them receive quinolones as prophylaxis. [NY]

• There have been no ESBL or otherwise MDR isolates such as VRE among the few bacteremic patients post procedure here. We are pushing for single dose preop for all surgical prophylaxis [MD]

• I cover all sepsis post TR biopsy for ESBL as it is not unusual in our area. Our overall quinolone resistance rate is 25-40%. [PA]

**Comments about prophylactic antibiotic choices**

• Based on our local antibiogram, I have been recommending Keflex +/- aminoglycoside, or Augmentin +/- aminoglycoside as prophylaxis choices [MD]

• Seen a few really bad sepsis cases p TRPB. Quinolones remain the decerebrate antibiotic of choice for urologists despite this. [PA]

• We changed our prophylaxis over 2 years ago and since then the urologists report a significant decrease is post TRUS infections or sepsis (they used to give prophylaxis to be started 1 day and then several days post procedure and since we modified the regimen they provide a single dose) [FL]

• The choice of routine antibiotic for procedures is driven more by national guidelines than recognition of local factors. Any suggestion to change antibiotic based on local resistance pattern is met with resistance by the institution if there is any thought it might be contrary to the national guideline, even though national guidelines usually have a "depending on local resistance pattern" phrase. Most guidelines list fluoroquinolone as the top preferred agent. [OK]

• Based on no data, just on the way Gram negative bacteria tend to behave, I would not advocate a markedly increased spectrum of empirical prophylaxis. Wonder if aminoglycosides x 1 dose might be
the way to go since they have broader activity against gram neg uropathogens and the impact on patient's and community's flora may be intrinsically minimized because urologists would be less likely to prescribe > 24 hours of such an abx compared to cipro AND I believe AG's have less of an overall impact on the gut flora, dose per dose. However, I worry about how well the prostate would be "protected" because not clear to me that AG's penetrate this tissue well. Comparative studies or at least a registry would be warranted to help assess such a new strategy. [PA]

• We have added a screening list for MDROs. If positive, then prophylaxis is with ceftriaxone or if penicillin allergic, then with ciprofloxacin and aminoglycoside, or trimethoprim/sulfamethoxazole as last option. Infections have been very few and most were not MDRO in our institution. [MN]

• IM or IV Ertapenem 1gm pre op has been used. Fosfomycin is a thought, though no data. Lastly (or maybe firstly), see if we can stop all the Levaquin they use in these patients [PA]

• This issue is best monitored and managed by ID pharmacists in conjunction with ID physicians. Optimal prophylactic agent unclear. To get urologists to use agents other than FQs has been challenging. [NY]

• Still using quinolones - being evaluated now [NY]

• Adopted single dose aminoglycoside policy this year [CA]

• Urologists were using moxifloxacin empirically for several years. After advising them of failures with sepsis, they switched to IV aminoglycoside +/- levofloxacin (varies) [FL]

• Our education is to avoid quinolones. Some urologists have trouble giving up fluoroquinolones [MD]

• Reduced the number of FQ doses from 6 to 2 [NM]

• All get aminoglycoside and single dose ceftriaxone based on increased quinolone resistance and few ESBL bacteremia cases noted [NY]

• Given aminoglycoside if FQR on screen [UT]

• Moving away from fluoroquinolones. [GA, NY, CA, MA, WI, TN, TX, FL, PA, TX, PA]

• More aminoglycosides and less quinolones [TX]

• Used to be ciprofloxacin until 2 years ago [FL]

• Changed from 3 days to single dose [CA]

• From cipro to ceftriaxone [FL]

• From cipro to cefuroxime and now to culture-guided prophylaxis [CA]

• Added cefpodoxime b/o quinolone resistance [IN]

Comments about peri-procedural microbiologic screening

• We consider carbapenem if ESBL found on pre-op UC. We are often giving peri-op dose of gentamicin with fluoroquinolone [NY]

• Urologists and clinical microbiologists are attempting to devise a workable method to establish a rapid-turn-around test for ciprofloxacin-resistant organisms. It is not yet ready for prime time use, as it needs to be verified in our own lab. [TX]

• No sepsis or infectious complications in those screened. If a quinolone-resistant E. coli, then a carbapenem is used. Almost all are screened. [WI]

• If quinolone resistance is found on screening, not used, but parenteral cephalosporin or aminoglycoside instead. (I would recommend fosfomycin if asked, or if I was biopsied) [MA]

• The use of rectal swab pre-procedure with appropriate abx prophylaxis is what I have been recommending [NY]

• I would be interested in hearing about culture techniques prior to TRPB prophylaxis - for those doing this are they using selective media to isolate MDRs only? [VA]

• I think testing and prophylaxis based on results makes some sense, but would be very difficult to institute in our already fragmented, rushed healthcare system. [PA]

• Careful review of previous urine cultures could guide peri-op prophylaxis [OH]
Yearly antibiogram for E coli instead of rectal culture.

Preop screen with culture of rectal swab on Hardy Cipro blood agar.

Culture not always reviewed and therapy not always modified by urology when cipro resistant bacteria recovered from screening cultures.

Rectal cx selecting for cipro resistant Enterobacteriaceae; inconsistent use.

Only in very select cases in pts with h/o MDR E. coli infections.

Went from cipro only to adding cefuroxime. Stool cultures/targeted prophylaxis deemed too cumbersome.

Now based on prebiopsy rectal culture results (for ~18 months).

Spotty use.

For 3 years, but the rectal cultures are done with the biopsy so don't change prophylaxis.

Given aminoglycoside if FQR on screen.

Comments about interactions between urologists and ID

No discussions with urologists about prophylaxis until after complications.

Duration of Cipro administration depends on the urologist (we have 4 urologists) and varies in length from 500 mg BID (2 doses total) to 500 mg (6 doses total).

Different urologists have different practices, and this is often not performed in the hospital setting. Our urologists claim a very low (well below benchmark) post procedure infection rate.

TRPB not done in hospital in our area - done in doctors' private offices virtually 100%.

I don't usually see these patients, but I am aware there are potential problems. Not sure what the hospital policy is. Suspect individual urologists may have different approaches.

ID community has little input into selection of prophylactic agent. No clear guidelines, probably very dependent on prior Abx exposure, prior bacteruria and prior episodes of prostatitis.

I recommended a change in preoperative prophylaxis to the urologists based on national trends and an increasing literature on these post TRPB infections, but they did not want to change yet given that they have a very low rate of infection with their current regimen.
• I have had extensive discussions with urologists, who at least now know that continuing a quinolone when their patients become septic post procedure is useless, and use a beta-lactam instead. [NJ]
• A very timely survey. I have been in discussions with our urologists and ultrasound biopsy folk for at least a decade, but we have not reached a satisfactory approach. We probably have increased awareness of the frequency and severity of infections, and probably improved management when folk with severe infections arrive in the ED. [BC]
• We saw an increase in FQ-R E. coli sepsis a few years ago. I was able to work with urology to decrease the number of doses given periop and this improved. [NM]
• Most urologists here start prophylaxis the night before the procedure and continue for 24-72 hrs. Practice is not standardized. On occasion, usually when the patient had a resistant organism on urine culture particularly if no oral options available, urology may contact ID or the ID pharmacist for prophylaxis suggestions. [AZ]
• We have seen a rise in cipro resistant UTI isolates and C. diff, so we are going to meet with urology to define best practices. [CA]
• GU guys ask me about this ALL the time. Seems better since we started using ceftriaxone OCTOR except for 2 CA ESBLs w/o risk factors. Ugh [OH]
• We have had extensive discussions with urology and track all post-bx sepsis admissions closely. Most are resistant (often monoresistant) to the quinolone used for prophylaxis, but more recently we have seen some that are sensitive. For unclear reasons, the number of cases of sepsis has dropped sharply in 2014, despite shortening prophylaxis from three days to one dose. Perhaps this is due to the intervention of carefully educating patients on signs of infection, so that they come back before they get sick enough to admit. I can't verify this because I don't hear about the ones who are not very sick. But if it's working, that's just fine. [CA]
• On at least one occasion a urologist asked for my input on prophylaxis when an ESBL producing E. coli was isolated from stool, but my sense is that this is an unusual occurrence. [OR]
• I hear about post-TRPB sepsis, but am usually not consulted on it. I was approached by the urologists about performing a study but have not made much progress to date. [UT]
• The urologists have not involved us in this discussion - they just call when there is a problem. [CA]

Miscellaneous
• Seems to be relatively rare possibly because these patients have not generally been exposed to prior antibiotics making resistance less likely. [MD]
• With a decrease in PSA screening anticipate a concomitant decrease in TRPBs [SC]
• A national consensus guideline would be useful. [TN]
• I only see the subset of the sickest patients, so I am not sure what milder cases I may be missing [IA]
• Decreasing the number of TRPB's by sticking to USPSTF guidelines on this issue would decrease the risk of infection for the population at large. [PA]
• I'm not involved in decisions regarding surgical prophylaxis at my institution; I am not aware of what my colleagues suggest. I have likely seen post TRPB infections but do not recall them at this time. [MO]
• Interesting problem that highlights surgical desire to have no complications ever [WA]
• This has definitely been a point of discussion in our infectious disease division but this has not yet translated into a systematic attempt to change process. [WI]
• I’d be interested to know if anyone is using any novel intra-colonic cleansing/antiseptics in view of increasing resistance [MI]
• We are seeing sharp reductions in TRUS and TRBP that are occurring now in the era of giving up on PSA screening tests for prostate CA, so I gather that this is the reason. [PA]
• One of the issues is that biopsies are office procedures, so use of IV prophylaxis is not an option as the urologists’ offices do not have licensed staff, etc to administer [TX]