**Question:** It seems an added concern would be that many of our patients are Type II or Type 1 diabetics, where the bladder would be serving as a giant incubator with lots of food in the form of glucose for the  bacteria. Are there certain antibiotics that are better for the diabetic population that has less side effects?

**Summary:**

* The presence of diabetes, particularly uncontrolled, is associated with more frequent UTIs, and UTIs caused by a greater variety of pathogens including fungi and drug-resistant bacteria.1
* Principles of treatment are not different than the general population including first and second line therapies.
* Treatment of asymptomatic bacteriuria in DM patients does NOT prevent future UTIs nor does it prevent complications associated with urinary tract infections.2

**Table 1:** First and second-line antimicrobial therapies with DM-specific notes related to their safety and efficacy profile

**Second Line**

**First Line**

|  |  |  |
| --- | --- | --- |
| **Antibiotic** | **PROS** | **CONS** |
| Nitrofurantoin | Urine-specific | Ineffective in patients with renal impairment |
| Sulfamethoxazole/TMP | Good concentration in urine | Renally toxic – ensure good hydration |
| Fosfomycin | Broad spectrum, single-dose without need for adjustment3 | PriceIncreased dosing leads to GI ADRs4 |
| Fluoroquinolones | Highly effective | Increase risk of dysglycemia -hyper or hypoglycemiarisk greater with levofloxacin 0.19 and 0.18ciprofloxacin 0.10 and 0.12cases of hypo and hyperglycemia per 1000 patients5 |
| Amoxicillin | Treats enterococcus (even VRE) | High rates of *E. coli* resistance, avoid empiric use |
| Amoxicillin/clavulanate |  | High rates of *E. coli* resistance, avoid empiric use |
| Cefazolin | Well-tolerated | Frequency of dosing, consider cefadroxil (BID)May be less effective vs. FQ or Sulfa |

**References:**

1. Nitzan O, Elias M, Chazan B, Saliba W. Urinary tract infections in patients with type 2 diabetes mellitus: review of prevalence, diagnosis, and management. Diabetes Metab Syndr Obes 2015;8:129-36.

2. Harding GK, Zhanel GG, Nicolle LE, et al. Antimicrobial treatment in diabetic women with asymptomatic bacteriuria. N Engl J Med 2002; 347(20):1576-83.

3. Jacobson S, Junco Noa L, Ahmed S, Wallace MR. Efficacy and safety of oral fosfomycin for urinary tract infections in hospitalized patients. Antimicrob Agents Chemother 2016; 60:1952.

4. Bleasdale S, Wenzler E, Sikka M, et al. Phase I Study To Evaluate The Safety And Tolerability Of Two Dosing Regimens Of Oral Fosfomycin Tromethamine In Healthy Adult Participants. Presentation 1880. IDWeek 2017, San Diego, CA.

5. Aspinall SL, Good CB, Rong J, et al. Severe dysglycemia with the fluoroquinolones: A class effect? Clin Infect Dis 2009; 49(3):402-08.