Key Summary of Conference Abstract

Risk Factors for Antibiotic Resistance of *Escherichia coli* Urinary Isolates in Outpatients

Background

- In the outpatient setting, urinary tract infections (UTIs) account for a substantial portion of the usage of antibiotics in the United States.[1]
- *E coli* is the primary causative pathogen of UTIs, and *E coli* resistance to many antibiotics has increased in the United States. Such increases hinder the ability to provide timely and effective treatment, which can affect patient morbidity and challenge antibiotic stewardship.[1,2]
- Some studies have identified that patient age is a risk factor for antibiotic resistance, but local resistance patterns could affect this relationship.[3]
- **Objective:** The investigators of this study examined results of antibiotic susceptibility tests from a large reference laboratory to evaluate the association of age with *E coli* antibiotic resistance in Washington state.

Methods

- The investigators analyzed the results of *E coli* antibiotic susceptibility testing conducted at Quest Diagnostics over a 5-year period. Results were included from outpatient settings in Washington state.
- Crude rates of resistance to antibiotics were determined for the first urinary isolates of patients and grouped by patient age: 0-18, 19-50, and >50 years.
- Multivariable logistic regression models were used to examine the association of antibiotic resistance with patient age and sex.

Results

- The unadjusted rates of antibiotic resistance varied significantly across age groups for some antibiotics, depending on sex.
  - Male patients: ciprofloxacin and nitrofurantoin
  - Female patients: amoxicillin-clavulanate, ciprofloxacin, gentamicin, and nitrofurantoin
- Older patients (>50 years old) had a greater likelihood of resistance to some antibiotics than young patients, depending on sex.
  - Male patients: ciprofloxacin and ceftriaxone
  - Female patients: amoxicillin-clavulanate, ciprofloxacin, ceftriaxone, and gentamicin

Conclusions

- In the outpatient setting in Washington state, antibiotic resistance in *E coli* urinary isolates varied by age, sex, and antibiotic.
- Databases of susceptibility testing may help develop age-specific antibiograms. Such clinical tools may guide appropriate treatment decisions and improve antibiotic stewardship.

Poster presentation at IDWeek 2019

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Webpage

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References

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3. Rosa R, Abbo M, Raney K, et al. *Am J Emerg Med*. 2017;35:397-401.