Evaluation of Empiric Antibiotic Prescribing in Patients with Uncomplicated Urinary Tract Infections in Outpatient Clinics

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Background
- Urinary tract infections account for approximately $3.5 billion per year in health care costs and time missed from work in the United States annually.¹
- In 2011, The Infectious Diseases Society of America released a clinical practice guideline that recommended short-course antibiotic therapy and avoidance of fluoroquinolones for uncomplicated urinary tract infections.²
- A retrospective cohort study of outpatient and emergency department (ED) visits found the following:³

FQs were the most commonly prescribed antibiotic both before and after guideline release (45% vs 42%).

Greater than 75% of prescriptions written had inappropriate treatment durations.

The clinical practice guideline had minimal impact on antibiotic prescribing behavior by providers.

2016–2017 Uncomplicated UTI treatment review at CoxHealth Springfield urgent care and ED

Inferred opportunities for improvement in antimicrobial prescribing

2018–2019 Prescriber education pre-post study of uncomplicated UTI treatment at CoxHealth Branson ED

Inferred improved prescribing patterns following provider education

2019–2020 Current retrospective, cohort review of uncomplicated UTI treatment in CoxHealth outpatient clinics

Purpose
- Evaluate the appropriateness of antibiotic use for uncomplicated urinary tract infections in an outpatient clinic setting

UTI = urinary tract infection FQs = fluoroquinolones

Primary Outcomes
- Percent of patients with appropriate antibiotic
- Percent of patients with appropriate dose
- Percent of patients with appropriate duration

Results

Primary Outcome

Cohort 1
- Composite Endpoint
  - Appropriate Dose
  - Appropriate Duration

Cohort 2
- Appropriate Antibiotic
- Appropriate Dose
- Appropriate Duration

Cystitis Antibiotic Selection
- n = 72
- First Line: 69%
- Second or Third Line: 31%

Pyelonephritis Antibiotic Selection
- n = 28
- First Line: 36%
- Second or Third Line: 36%
- Nitrofurantoin: 36%

Discussion & Conclusions

Limitations
- Small sample size
- Charting omissions
- Provider preference

Discussion
- Duration of therapy exceeds current recommendation for 3-5 days.
- Ciprofloxacin was prescribed in 25% of patients diagnosed with cystitis despite current recommendations.
- Sulfamethoxazole/trimethoprim was prescribed in 36% of patients despite high local resistance rates.

Conclusions
- Providers in both clinic settings prescribe appropriate antibiotic, dose, and duration less than 32% of the time.
- Results of this study suggest provider education could improve empiric therapy selection.

Future Directions
- Provide education to CoxHealth providers
- Additional ID responsibilities for outpatient pharmacists
- Improve outpatient antimicrobial stewardship

Methods

Cohort 1 – Primary Care Clinics
- Family Medical Care Clinic
- CoxHealth Center Steeplechase
- CoxHealth Center Chesterfield
- CoxHealth Center Medical Mile

Inclusion Criteria
- Study duration: January 1, 2019 to June 30, 2019
- Women ≥ 18 years and < 65 years
- Patient encounter occurring at the clinics listed above
- Diagnoses of uncomplicated urinary tract infection

Exclusion Criteria
- Pregnancy
- Male
- Structural abnormality of the urinary tract
- History of resistance or treatment failure

Cohort 2 – Walk-in Clinics
- Hy-Vee QuickCare
- The Clinic at Walmart: Ozark
- The Clinic at Walmart: Republic
- The Clinic at Walmart: Springfield-Campbell
- The Clinic at Walmart: Springfield-Kansas Expressway

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References

Author Disclosures
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