Background

- Urinary tract infections (UTI) are a leading cause of infection among patients presented to the emergency department (ED).
- Absence of microbiologic data, reduced continuity of care, and increased patient turnover create a challenging situation for treating patients with antibiotic therapy in the ED.
- Increasing antibiotic resistance requires clinicians to prescribe effective empiric antibiotic therapy based on current guidelines and local antibiograms.
- Two previous studies determined that duration of therapy was the most inappropriate antibiotic treatment implication.
- Ensuring appropriate prescribing of empiric antibiotics would result in a reduction in antibiotic resistance rates, rate of return visits to the ED, adverse effects, and healthcare costs.

Objectives

- To assess the appropriateness of empiric antibiotic prescribing for patients with urinary tract infections in the emergency department
- To examine the impact of return visits to the ED within 30 days based on empiric antibiotic prescribing for UTI patients

Methods

- Retrospective, single-center, cohort study approved by TTUHSC IRB
- Study Site: Hendrick Medical Center- a 500-bed community hospital in Abilene, Texas
- Study subjects identified by International Classification of Diseases (ICD) diagnosis codes recorded in the electronic medical record during a time period of July 1, 2017 to September 31, 2018

Inclusion Criteria

<table>
<thead>
<tr>
<th>Inclusion Criteria</th>
<th>Exclusion Criteria</th>
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<tbody>
<tr>
<td>Age ≥ 18 years</td>
<td>Pregnant women</td>
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<td>Admitted to the ED for UTI</td>
<td>Admitted to the hospital on the first ED visit for UTI</td>
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<td>Incomplete medical records</td>
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<td>Refused treatment or left against medical advice</td>
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<td>Age ≥ 90 years</td>
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<td>Prisoners</td>
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Primary Outcome

- Inappropriate Empiric Treatment: 156 (78%)
- Appropriate Empiric Treatment: 44 (22%)

P-value: < 0.05

Statistical Analysis

- Baseline Characteristics
  - Age, y, mean ± SD: 51.69 ± 22.19
  - Female, n (%): 51 (78.50%)
  - Home, n (%): 191 (95.50%)
  - Nursing home, n (%): 8 (4.00%)
  - State school, n (%): 1 (0.50%)
  - Baseline CrCl, n (%): 142 (71.00%)
  - CrCl ≥60, n (%): 142 (71.00%)
  - CrCl 30-59, n (%): 52 (26.00%)
  - CrCl <30, n (%): 4 (2.00%)
  - N/A, n (%): 2 (1.00%)
  - Diabetes, n (%): 157 (80.25%)
  - ESRD, n (%): 126 (80.25%)
  - Active cancer, n (%): 3 (1.50%)
  - Dialysis, n (%): 2 (1.28%)
  - HIV, n (%): 1 (0.50%)

Results

- Urinary Tract Infection Types
  - Uncomplicated Cystitis: 63%
  - Complicated Cystitis: 19%
  - Pyelonephritis: 6%
  - CAUTI: 12%

- Urinary Tract Infection Types
  - Frequency: Student t-test
  - Duration: Chi-square

Discussion

- The most common prescribing error was duration of therapy, similar when compared with previous studies.
- Strengths: relatively large sample size, less stringent inclusion/exclusion criteria
- Limitations: single center, retrospective study, ED documentation may be variable, not all patients would qualify as having UTI despite ICD code diagnosis such as asymptomatic bacteriuria patients

Conclusion

- A high rate of empiric antibiotics prescribed in the emergency department for UTI are inappropriate
- Factors such as increased frequency and extended duration of antibiotic therapy could contribute to increasing antibiotic resistance rates over time

Disclosure

- The authors of this study do not have any conflicts of interest