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Published In/Presented At

Goertel, A. Kile, J. W. (2016, Dec). *Determination of Secondary Encounter Rates for Urinary Tract Infections in Patients Treated with Cephalexin*. Poster Presented at: ASHP Midyear Clinical Meeting and Exhibition - American Society of Health-System Pharmacists, Las Vegas, Nevada.

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Determination of Secondary Encounter Rates for Urinary Tract Infections in Patients Treated with Cephalexin

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PURPOSE

The purpose of this retrospective chart review is to evaluate the rate of return for patients who were admitted for a urinary tract infection and utilized a prescription for cephalexin upon discharge.

BACKGROUND

- Urinary tract infections such as cystitis and pyelonephritis are among the most commonly encountered infections in both community and hospital settings.¹
- Fluoroquinolones have been the dominant agents for treatment of urinary tract infections.^{2,3}
- However, documented increase in resistance rates, paired with a high propensity for adverse effects has led to preferential use of alternative agents.^{3,4}
 - Guidelines put forth by Infectious Diseases Society of America (IDSA) recommend fluoroquinolones as second line agents and recommend against use when local resistance rates are >10%.³
 - Food and Drug Administration released a drug safety communication stating the risks in utilizing fluoroquinolones outweigh the benefits in uncomplicated urinary tract infections.⁵
- First-generation cephalosporins have become popular agents for treatment of urinary tract infections due to their narrow antimicrobial spectrum, limited adverse effect profile, and retained susceptibility.
- The evidence gathered from this study aims to provide insight into the use of narrow-spectrum cephalexin for treatment of urinary tract infections.

STUDY DESIGN

- Retrospective chart review
- Inclusion Criteria
 - Patients older than 18 years of age admitted to adult unit within Lehigh Valley Health Network (LVHN)
 - Patient with primary care physician that resides within LVHN
 - ICD-10 code (N39.0, N11.1) for urinary tract infection
 - Discharged with prescription for cephalexin
 - Antibiotic prescription with secondary encounter
- Exclusion Criteria
 - Patients with genitourinary abnormalities
 - Defined as tumor of the urinary tract, ureteric stent, urolithiasis, renal cysts, neurogenic bladder, or a nephrostomy tube.⁶
 - Urinary tract infection within previous 30-days of admission
- The primary outcome of the study is to determine the rate of secondary encounters in patients who received a prescription for cephalexin for a urinary tract infection during admission to LVHN, and present within 30 days of discharge to a doctor's office, urgent care center, emergency department or hospital.
- Secondary outcomes include identifying independent predictors for return, and characterizing cephalexin regimens.

DEFINITIONS: Secondary encounters = presentation to urgent care, emergency room, hospital, or physician practice with an ICD-10 code for urinary tract infection and received a prescription for antibiotics (fluoroquinolone, cephalosporin or Bactrim) within 30 days of discharge. Additional encounters beyond the secondary encounter will not be counted.

METHODS

- December 1, 2015– June 30, 2016
 - Enrollment ending on May 30, 2016.
- Data to be collected includes:
 - Demographics: Age, gender, pregnancy status, history of diabetes, catheterization status at time of discharge, pregnancy status on admission
 - Clinical: Hospital length of stay, intensive care unit admission, intensive care unit length of stay, uropathogens(s) identified from urine culture, susceptibility of uropathogens (levofloxacin/ciprofloxacin, cefazolin, trimethoprim/sulfamethoxazole), white blood cell count on admission, temperature on admission
 - Cephalexin regimen: dose, frequency and duration
- Rate of return to a doctor's office, urgent care center, LVHN emergency department, or LVHN hospital within 30 days will be calculated by dividing the total number of second encounters in the sample by the total sample size.
- To identify independent predictors for a second encounter a logistic regression model will be utilized.
- Characterization of cephalexin regimen will be assessed by the average duration of cephalexin with frequencies and percentages of each dose and frequency.

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Disclosure:

Authors of this presentation have the following to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation:

- Aubrey Goertel – Nothing to disclose
- Jarrod W. Kile – Nothing to disclose