Abstract

Background: Escherichia coli (E. coli) is a frequent uropathogen in urinary tract infections (UTI). Widespread resistance to sulfamethoxazole-trimethoprim (SMX-TMP) and increasing resistance to fluoroquinolones amongst these isolates has been recognized. There are limited data demonstrating risk factors for resistance to both SMX-TMP and fluoroquinolones.

Objectives: This study was conducted to assess for the prevalence of community resistance amongst E. coli isolates to SMX-TMP and levofloxacin in ambulatory patients discharged from the emergency department (ED). Methods: Adults presenting for evaluation and discharged from the ED with a diagnosis of an E. coli UTI were retrospectively reviewed. Utilizing demographic and clinical data the prevalence of E. coli resistance and risk factors associated with SMX-TMP- and fluoroquinolone-resistant infection were determined. Results: Among the 222 patients, the mean rates of E. coli susceptibility to levofloxacin and SMX-TMP were 82.4% and 72.5%, respectively. Significant risk factors for resistance to SMX-TMP included prior antibiotic use (p=0.04) and prior diagnosis of UTI (p=0.01). Significant risk factors for resistance to levofloxacin included: male gender, age, presence of hypertension, diabetes, chronic respiratory disease, nursing home resident, previous antibiotic use, previous diagnosis of UTI, existence of renal or genitourinary abnormalities, and prior surgical procedures (p<0.05 for all comparisons). The number of hospital days prior to initial ED evaluation (p<0.001) was determined to be a predictive factor in hospital and ED readmission.

Conclusions: These results suggest that conventional approaches to monitoring for patterns of susceptibility may be inadequate. It is imperative that practitioners develop novel approaches to identifying patients with risk factors for resistance. Identification of risk factors from this evaluation should prompt providers to scrutinize the use of these agents in the setting of patients presenting with an uncomplicated UTI in the ED.

Keywords

Drug Resistance, Bacterial, Risk Factors, Urinary Tract Infections, Uropathogenic Escherichia coli, Trimethoprim-Sulfamethoxazole Combination, Fluoroquinolones, Emergency Service, Hospital, United States.