1426. Empiric Antimicrobial Prescribing for Urinary Tract Infections in Patients Discharged from the Emergency Department
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EMPHARM-NET

Session: P-81. UTIs

Background. Urinary tract infections (UTIs) are commonly treated infections in the emergency department (ED), accounting for 3 million visits annually and 15% of outpatient antibiotic prescriptions. The purpose of this study was to characterize empiric and definitive antimicrobial therapy for treatment of UTIs in a nationally representative sample of ED patients.

Methods. This was a multicenter, retrospective cohort study utilizing the Emergency Medicine PHARMacy Research Network (EMPHARM-NET), a network of 15 geographically diverse EDs. Patients ≥18 years presenting to and discharged from home from the ED with primary diagnosis code of cystitis, pyelonephritis, or UTI from 2018-2020 were included. We describe empiric intravenous (IV) and oral antibiotics used for the treatment of UTI in patients seen and discharged from the ED.

Results. Of the 3779 ED patients treated for UTI, most were discharged from the ED (n=2483, 66%). Most patients were female (76.3%) and common comorbidities were hypertension (47.8%) and diabetes (26.5%). Most patients had uncomplicated (39.4%) or complicated (40.9%) cystitis. 1134 (45.6%) had a positive urine culture, most commonly E. coli (56.3%) and K. pneumoniae (15.3%). The most common antibiotics administered in the ED were ceftriaxone (19.7%), nitrofurantoin (6.2%), cephalaxin (5.8%), and sulfamethoxazole/trimethoprim (SMX/TMP, 4.8%). The most common antibiotics prescribed at discharge were cefalexin (29.9%), nitrofurantoin (20.6%), SMX/TMP (12%), ciprofloxacin (8.2%), and cefdinir (8%). The mean length of treatment was 7.1 days (standard deviation 2.5 days). Overall, 454 patients returned to the ED within 30 days. The odds of returning to the ED within 30 days was higher in those that did not have appropriate empiric antibiotics based on susceptibilities (OR 1.37, 95% confidence interval 1.06, 1.78).

Conclusion. This multicenter, retrospective cohort study describes ED patients discharged from the ED after UTI diagnosis. Patients presented most commonly for cystitis. Nearly half of discharged patients were culture positive. Antimicrobial selection varied; IV ceftriaxone and oral cephalaxin were most commonly empirically utilized to treat patients with UTI. Inappropriate antimicrobial selection increased odds of a return ED visit within 30 days.

Disclosures. Megan A. Rech, PharmD, MS, BCCCP, FCCM, Spero (Research Grant or Support); Brett Faine, PharmD, Spero Therapeutics (Research Grant or Support); David A. Talan, MD, Abilix (Consultant/GSK (Consultant)/SPEROTHUG (Grant/Research Support)

1427. Healthcare Resource Utilization During Hospitalizations with UTI in the US, 2018
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Background. Urinary tract infection (UTI) as the reason for hospitalization costs the US healthcare system nearly $3 billion annually, and is on the rise. We set out to explore the full burden of UTI hospitalizations in the US, including admissions both for UTI and with UTI.

Methods. We conducted a cross-sectional multicenter study within the National Inpatient Sample (NIS) database, a 20% stratified sample of discharges from US hospitals, from 2018, to explore hospital resource utilization of patients discharged with a UTI diagnosis. We divided UTI into mutually exclusive categories of complicated (cUTI), uncomplicated (uUTI), and catheter-associated (CAUTI), in addition to healthcare-associated (HAUTI). We calculated unadjusted hospital charges, costs, average reimbursements, and length of stay (LOS) associated with these infections.

Results. Among 2,837,385 discharges with a UTI code, 77.9% were uUTI, 17.6% cUTI (80.2% HAUTI), and 4.4% CAUTI; UTI was principal diagnosis in only 17.0%. In 2019, analysis of 83,850 urinary isolates from patients in the primary care setting with E. coli revealed a 5.3% resistance rate to mecillinam. Time-trend analysis using data from a 10-year period showed a small but significant decrease in the 5.5% resistance rate recorded in 2010 (p=0.001). In general, in countries using mecillinam in Denmark, the development of resistance to pivmecillinam has remained low. In fact, a slight decline in pivmecillinam resistance was observed over the past decade.

Conclusion. Despite the rising number of UTIs and the increasing use of pivmecillinam for uUTI in Denmark, over the past decade, the development of resistance to pivmecillinam remains low.

Disclosures. Anne Santerre Henriksen, MS, Advanz (Consultant)/Shionogi BV (Consultant)/UTILITY Therapeutics (Consultant)

1429. Real-World Study of Patients with Uncomplicated Urinary Tract Infection in the United States: High-Risk Comorbid Conditions and Burden of Illness
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Session: P-81. UTIs

Background. Urinary tract infections (UTIs) are associated with significant morbidity and economic burden, particularly in the elderly and patients with comorbidities. We used real-world data (RWD) to assess healthcare resource use (HRU) and costs in patients with uncomplicated UTI (uUTI) and high-risk comorbid conditions in the US.

Methods. This was a retrospective cohort study (IBM MarketScan RWD, commercial/Medicare Supplemental claims January 1, 2014–December 31, 2017) of females ≥12 years of age with uUTI who had an oral antibiotic prescription ≥ 5 days of UTI diagnosis (index date) and continuous health-plan enrollment for ≥ 1 year pre-/post index date. Five high-risk cohorts and matched-control cohorts (baseline age, region) were identified: controlled type 2 diabetes (T2D), mild/moderate chronic kidney disease (CKD), recurrent UTI (rUTI), elderly (ELD), and postmenopausal (PMP) (Table 1). Sample sizes were balanced via random match selection (1:5 case:control). uUTI-related HRU and costs were compared between cases and controls (index episode/1-year follow-up) using multivariable generalized linear models.

Disclosures. Marya Zilberberg, MD, MPH, Cleveland Clinic (Consultant)/KJ (Shareholder)/Lungpacer (Consultant, Grant/Research Support)/Merck (Grant/Research Support)/AbbVie (Consultant/Research Support)/Sedana (Consultant, Grant/Research Support)/Lungpacer (Grant/Research Support)/Spero (Grant/Research Support)