414. Allergies to Antimicrobial Agents Among US Females with Uncomplicated Urinary Tract Infections

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Background. Urinary tract infections (UTIs) are the most common outpatient infections requiring medical care in the US; but, despite Infectious Diseases Society of America (IDSA) guidelines for treating uncomplicated UTI (uUTI), variation in prescribing practices still exists. Few studies have used real-world data (RWD) to evaluate uUTI-associated healthcare resource use (HRU) and costs. We examined HRU and direct costs associated with appropriate and optimal (AP&OP) and inappropriate or suboptimal (IA/SO) antibiotic (AB) prescribing in females with uUTI using US RWD.

Methods. This retrospective cohort study used RWD from IBM MarketScan (commercial/Medicare claims) to examine uUTI-related HRU and costs (inpatient, emergency room, outpatient, pharmacy) per index uUTI episode and during 1-year follow-up among females (age ≥ 12 years) diagnosed with uUTI from July 1, 2013–December 31, 2017 (index date). Patients had an oral AB prescription ≥ 5 days of the index date, and continuous health plan enrollment ≥ 6 months pre/1 year post-in index date; those with complicated UTI were excluded. Patients were stratified by AB prescriptions as follows: AP&OP = guideline-compliant and correct duration; IA/SO = guideline non-compliant/incorrect duration or re-prescription/switch within prescription as follows: AP&OP = guideline-compliant and correct duration; IA/SO = guideline non-compliant/incorrect duration or re-prescription/switch within 28 days.

Results. The study included 557,669 patients. In the commercial population (n=541,407), fewer patients were prescribed AP&OP (11.8%) than IA/SO (88.2%) ABs, a trend also seen in the Medicare population (n=40,262, mean age 74.5 years). In both populations, adjusted average numbers of uUTI-related ambulatory visits and pharmacy claims were lower for the AP&OP cohort than the IA/SO cohort during index episode and 1-year follow-up (p < 0.001; Table 1). In the commercial population, total adjusted uUTI-related costs were $194 (AP&OP) versus $274 (IA/SO; p < 0.0001); in the Medicare population, total adjusted uUTI-related costs were $253 (AP&OP) versus $355 (IA/SO; p < 0.0001) (Table 2).

Table 1. uUTI-related HRU for commercial and Medicare populations calculated using the GLM model

| Outcome variable | Commercial population | Medicare population | p-value |
|------------------|-----------------------|---------------------|---------|
| **All patients** | **20.9** | **16.9** | **<0.0001** |
| **Women ≥ 18**   | **20.7** | **16.9** | **<0.0001** |
| **Women < 18**   | **21.6** | **16.9** | **<0.0001** |

Table 2. Frequency of antibiotic allergies across cohort subgroups

| Antibiotic used to treat most recent uUTI (N=375) | n (%) |
|------------------------------------------------|-------|
| Ciprofloxacin                                   | 145 (39.7) |
| Nitrofurantoin                                  | 85 (22.7) |
| Cephalexin                                      | 71 (19.8) |
| Levofloxacin                                    | 56 (14.9) |
| Amoxicillin-clavulanate                         | 35 (9.3) |
| Clavulanate                                     | 11 (2.9)  |
| Ceftriaxone                                     | 10 (2.7)  |
| Clindamycin                                     | 5 (1.4)   |
| Fosfomycin                                      | 2 (0.5)   |
| Cefpodoxime-proxenil                            | 0       |

Conclusion. Overall uUTI-related HRU and costs in the US were low during index episodes and follow-up. However, females with uUTI prescribed IA/SO ABs were more likely to incur higher HRU and costs than those prescribed AP&OP ABs, suggesting an unmet need for training to optimize uUTI prescribing per US guidelines.