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Antibiotic Prescribing Patterns for Acute Uncomplicated Cystitis in Outpatients: A Nationwide Analysis in Korea, 2019–2022

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Purpose

Acute uncomplicated cystitis is common, affecting ~10% of women annually and up to 60% at least once in a lifetime. Escherichia coli is the predominant pathogen, accounting for 70–83% of acute uncomplicated cystitis. Empirical antibiotic selection should consider local resistance rates, cost, and treatment failure risk. Following safety warnings from the U.S. FDA, the Korean Ministry of Health restricted fluoroquinolone reimbursement as first-line therapy for uncomplicated cystitis. Korean guidelines (2018) recommend nitrofurantoin, fosfomycin, or pivmecillinam; however, limited availability necessitates frequent use of fluoroquinolones and cephalosporins.

Methods

We analyzed Korea Health Insurance Review and Assessment Service data for adults (≥19 years) diagnosed with acute cystitis (ICD-11: N300) between January 2019 and December 2022. Patients with sexually transmitted infections, malignancies, congenital urogenital anomalies, or pregnancy were excluded. After excluding ineligible cases and those without antibiotic prescriptions, 2,534,322 patients were included (94,750 men [3.7%], 2,439,572 women [96.3%]).

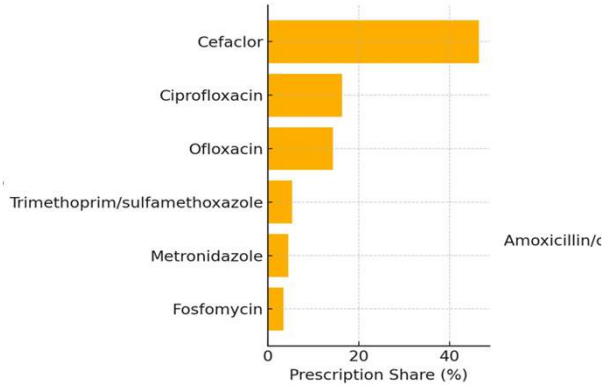

Figure 1. Top prescribed single antibiotics (Female)

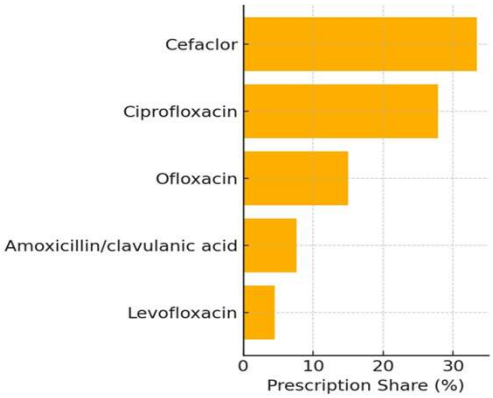

Figure 2. Top prescribed single antibiotics (Male)

Results

In women, the most prescribed single agents were second-generation cephalosporins (42.09%), fluoroquinolones (28.00%), and penicillins (10.34%); top agents included cefaclor (46.47%), ciprofloxacin (16.30%), and ofloxacin (14.29%)(Figure 1). In men, fluoroquinolones (41.12%), second-generation cephalosporins (32.64%), and penicillins (8.74%) predominated; top agents included cefaclor (33.39%), ciprofloxacin (27.81%), and ofloxacin (14.97%)(Figure 2). The most common combination therapies were cefaclor + metronidazole (48.69%) in women and metronidazole + levofloxacin (47.95%) in men.

Conclusions

Despite guidelines, fluoroquinolone use remains high in acute cystitis treatment, underscoring the need for ongoing education on antibiotic selection and duration to minimize resistance. The COVID-19 pandemic (2020–2023) may have influenced healthcare access and prescribing trends; continued monitoring is warranted.