



Fosfomycin as a promising alternative to treat urinary tract infection due to multidrug resistant uropathogens

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Dear Editor,

Multidrug resistant uropathogens have complicated the treatment of community acquired urinary tract infections.^[1] With emerging resistance among all classes of antibiotics, very few of them demonstrate high levels of susceptibility among uropathogens.^[2] Fosfomycin has emerged as an effective oral option for treating urinary tract infections. We conducted an *in vitro* study to assess the susceptibility profile of sensitive and multidrug resistant pathogens against fosfomycin at our centre.

We conducted a prospective observational study on 500 uropathogens obtained from symptomatic and asymptomatic cases of urinary tract infections during the study period of 3 months from November 2017 to January 2018. The study included midstream urine, catheterized and suprapubic aspirates of urine. The bacterial isolates were studied for morphological characteristics on 5% sheep blood agar and MacConkey agar culture media, and also urinary antimicrobial activity, biochemical reactions, susceptibility towards fosfomycin and other antimicrobial drugs were investigated using Kirby Bauer disk diffusion method. *Escherichia coli* and *Klebsiella* species constituted 52% and 30% of these isolates. Other isolates were *Enterococcus* spp, *Proteus* spp, *Serratia* and *Enterobacter* spp. Sixty-four percent of *Enterobacteriaceae*, were extended-spectrum beta lactamase producers (ESBL). All ESBL producing bacteria were sensitive to fosfomycin. Fifty-six percent of all isolates were multidrug resistant (MDR). Five MDR microorganisms were resistant to fosfomycin (1.8%). Overall, 98.4% of the isolates were sensitive to fosfo-

mycin, and *E coli* and *Klebsiella pneumoniae* showed 99.6% susceptibility. *Enterococcus species*, *Serratia species* and *Enterobacter species* were 100% susceptible to fosfomycin and the least susceptibility rate was found in *Providencia rettgeri* (40%). Thus, fosfomycin shows *in vitro* susceptibility against most uropathogens including multidrug resistant and ESBL producing bacteria.

Several studies have demonstrated good *in vitro* susceptibility of fosfomycin against uropathogens.^[2-4] As fosfomycin is an oral cell-wall inhibiting agent, its high susceptibility to MDR and ESBL microorganisms makes it an attractive outpatient treatment option for UTI. It also shows promise in treating complicated UTI due to its good safety profile in comparison to other agents used to treat MDR urinary tract infections.

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