

Evaluation of the Effectiveness of Fosfomycin for Coliforms Isolated from Patients with Urinary Tract Infections (UTI) at Apeksha Hospital, Maharagama and University Hospital KDU Sri Lanka

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Fosfomycin is known to be sensitive to *E. coli* and *Klebsiella* spp., with lower resistance. It is not used in the Sri Lankan setting to treat UTIs. This study aimed to find the susceptibility patterns and minimum inhibitory concentration (MIC) of fosfomycin in comparison to other antibiotics among cancer and non-cancer patients. Total of 150 lactose fermenting (LF) coliform, urinary isolates from cancer patients at Apeksha Hospital, Maharagama and non-cancer patients from University Hospital - KDU were collected during November 2021 to February 2022. *E. coli* and *Klebsiella* spp. which differentiated by biochemical tests were included in the study. Susceptibility to routinely used 20 antibiotics along with fosfomycin (200mg disc) and MICs of randomly selected 10 *E. coli* isolates using E-strip, were performed. Non-cancer patients were 76 (50.67%) while 74 (49.33%) were cancer patients. *E. coli* (67.3%, n= 101) was more frequent than *Klebsiella* spp. (32.7%, n=49). Overall extended spectrum beta lactamase producers (ESBL) incidence was 56% (84/150). Rate of overall multi drug resistance (MDR) incidence was 58.67%. Both ESBL producers (54.05%) and MDR (67.57%) were more prevalent among cancer patients than non-cancer patients. Isolates from cancer patients showed higher resistant rates to most of the 1st and 2nd line antibiotics in comparison to isolates from non-cancer patients. Overall *in vitro* susceptibility to fosfomycin was 100% to uropathogenic *E. coli* and *Klebsiella* spp. The MICs ranged between 0.5 to 1.0 µg/ml. Further studies with larger sample size and MIC determination should be performed to decide the dosing regimen of fosfomycin.

Keywords: urinary tract infections, *E. coli*, *Klebsiella* spp., fosfomycin, extended spectrum of beta lactamase producers, multi drug resistance