

## **Prevalence of urinary bacterial pathogens, their antimicrobial susceptibility patterns, and the associated risk factors among the catheterized patients in Medical and Surgical wards, Teaching Hospital, Jaffna**

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**Introduction and Objectives:** Infection in any part of the urinary system is defined as a urinary tract infection. Although a urinary catheter is important, inappropriate usage and left for too long will lead to hazardous consequences such as morbidity and mortality in the patient and increased hospital cost. This study aimed to determine the prevalence of urinary bacterial pathogens, their antimicrobial susceptibility patterns, and the associated risk factors among the catheterized patients in medical and surgical wards, Teaching Hospital, Jaffna.

**Methods:** This institutional-based descriptive cross-sectional study was carried out over a period of one month, including patients who have an indwelling urinary catheter for more than 48 hours after being admitted to medical and surgical wards, Teaching Hospital, Jaffna. Catheter urine samples were inoculated onto Cysteine Lactose Electrolyte Deficient agar, and antibiotic sensitivity was tested on all isolated bacteria according to the Laboratory Manual in Microbiology by Sri Lankan College of Microbiologists. The obtained data was analyzed using SPSS version 25.

**Results:** Of the 108 catheter urine samples from the catheterized patients, 39 (36.1%) yielded significant growth. The common bacterial isolates were coliform 14 (35.9%), followed by *Pseudomonas* spp. 5 (12.35%), *Enterococcus* spp. 5 (12.8%), *Staphylococcus saprophyticus* 3 (7.7%), *Proteus* spp. 1 (2.6%), and coagulase-negative staphylococcus 1 (2.6%). *Candida* spp. (25.6%) was isolated as fungal organisms. Isolated coliforms were sensitive to Gentamicin (86.7%) and resistant to Ampicillin (86.6%). *Pseudomonas* spp. were sensitive to Ciprofloxacin and Norfloxacin (80%) and resistant to Aztreonam and Cefoperazone-sulbactam (60%). Statistical significance was not found with gender and comorbidities related to significant growth. However, there was a significant relationship seen with age ( $p=0.001$ ) and duration of catheterization ( $p<0.001$ ). Particularly, 3-5 days of catheterization showed 25.6% culture positivity, and >5 days of catheterization showed 63.3% of significant growth.

**Conclusion:** The incidence of urinary tract infection among catheterized patients in Teaching Hospital, Jaffna was 36.1% and mainly caused by coliform, *Pseudomonas* spp., and *Enterococcus* spp. Significant growths were high among more than 60 years of age and when the duration of catheterization increased.

**Keywords:** Catheter, Significant growth, Urinary tract infection, Antibiotic sensitivity