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Bacteriology and antibiotic sensitivity patterns of urine and biofilm in patients with indwelling urinary catheter in a tertiary hospital in Bangladesh

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Catheter-associated urinary tract infection (CAUTI) is a common health care associated infection world wide and is result of wide spread use of urinary catheter and inappropriate antibiotics use. Cause of CAUTI is formation of pathogenic biofilm in the inner surface of indwelling urinary catheters and its early detection prevents various hazards as well as economic impact. This observational prospective study was done to see relationship between the pattern of microorganism in urine and biofilm and their antibiotic sensitivity patterns in 100 patients in Comilla medical college hospital, Comilla, Bangladesh. Selected patients had undergone catheterization for urinary retention or incontinence. The urine collected by suprapubic puncture and biofilm from indwelling catheter for culture and sensitivity. 90% of urine samples and 100% biofilm showed growth of uropathogens. *E. coli* was the most frequently isolated pathogen (60%), followed by *Klebsiella* spp.(14%). Multibacterial isolates was found from biofilm in 15 samples with long term catheterization. Biofilm strains displayed relatively high resistance against tested antibiotics. Highest sensitivity pattern was found for *E. coli* in urine and biofilm for imipenem (95% vs. 92%), lowest for ciprofloxacin (20% vs. 16%). Catheter biofilm resistant to all tested drugs were found for *E.coli* in 6.95% and *Klebsiella* in 5.55%. Urine samples resistant to all tested antibiotics were only in *E. coli* (3.33%) cases. *E.coli* was the most frequent isolate which showed the higher sensitivity to carbapenems, and lowest to the quinolones. Correlation was observed between biofilm production and multidrug resistance. A large-scale prospective study is suggested to make a guideline to manage UTI, especially CAUTI.

Biography

Suneeva Sharon Christa A is a doctoral degree student who works with Dr. Pragasam Viswanathan, at Renal Research Laboratory, VIT University, Vellore. Her doctoral work focuses on the regulation of renal antimicrobial proteins and inflammatory markers in experimental pyelonephritic model and has been published in peer-reviewed journals. She has an experience of working with various animal models of the renal system and on the production and purification of antibodies for proteins of renal origin.

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