

Prevalence of Asymptomatic Bacteriuria, and Antibiotic Sensitivity Patterns of Isolated Bacteria, in Patients with Cancer, Attending Trail Cancer Hospital, Tellippalai, Sri Lanka

RIH Wijewardhane¹, SAPK Samaraweera¹, RHGL Hapitigama^{1#}, TJ Gnanakarunyan¹, R Ramachandran², S Saravanabavanathan², and PSP Kumbukage³

¹Department of Medical Laboratory Science, Faculty of Allied Health Sciences, University of Jaffna, Sri Lanka

²Teaching Hospital, Jaffna, Sri Lanka

³National Cancer Institute, Maharagama, Sri Lanka

#gavindyarh@gmail.com

Cancer is one of the leading diseases worldwide. Patients with cancer are immunocompromised and face a higher risk of infections like asymptomatic bacteriuria (ABU). In cancer patients, repeated antibiotic use can render commonly prescribed empirical antibiotics less effective. To determine the prevalence of ABU, and the antibiotic sensitivity (ABST) patterns of isolated bacteria in patients with cancer attending Trail Cancer Hospital, Tellippalai, Sri Lanka, An institutional-based descriptive cross-sectional study was conducted. Two hundred and forty-five patients with cancer without symptoms of UTI were selected. Urine samples were collected and inoculated on CLED media. Pure growth concentrations of 10⁵ CFU/ml or 10⁴-10⁵ CFU/ml were considered culture-positive. Single-organism identification is done by using relevant biochemical tests. ABST was performed on all isolated bacteria by the CLSI disk diffusion method. SPSS version 20 was used to analyze the data with statistical significance at $p < 0.05$. From 245 cancer patients, 26.5% were inpatients, and 73.5% were outpatients. 8.2% revealed significant bacterial growth. The prevalence of ASB in inpatients was 13.8% and outpatients was 6.1%. Coliforms (55%) were the most isolated uropathogen, followed by *Pseudomonas* species, Coagulase-negative *Staphylococcus*, *Acinetobacter* species, and *Streptococcus species*. Importantly, 20% of the identified isolates exhibited multidrug resistance (MDR). Coliforms exhibited significant resistance against Amoxicillin (63.6%), Ampicillin (54.5%), and Co-amoxiclav (45.5%). A high prevalence of ABU was identified among the inpatient population with Coliforms being the predominant uropathogen. This study suggests that Nitrofurantoin, Amikacin, Netilmicin, Meropenem, Imipenem, and Piperacillin-tazobactam are highly effective antibiotics for treating Gram-negative bacilli.

Keywords: *antibiotic sensitivity patterns, asymptomatic bacteriuria, cancer patients, prevalence*