



Bacterial profile and antimicrobial sensitivity patterns in asymptomatic bacteriuria: A cross-sectional study of sickle cell disease patients in the ho municipality, Ghana

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Abstract

Sickle cell disease (SCD) patients are vulnerable to asymptomatic urinary tract infection (UTI), and this can lead to long lasting kidney problems. This cross-sectional study assessed the bacterial profile and examined the sensitivity patterns of the isolated bacteria among the SCD patients. Within the period of January 2014 to April 2014, Seventy-one (71) patients were consecutively sampled from the sickle cell clinic of Volta Regional Hospital, Ho-Ghana. Mid-stream urine samples were collected for culture and sensitivity. Bacteria isolated were identified and tested for their antimicrobial sensitivity patterns using the Kirby-Bauer disc diffusion method. Independent t-test, Pearson Chi-square test and ANOVA were used to determine mean, standard deviations, associations and differences in groups. P value < 0.05 was considered statistically significant. The study showed a bacteria profile of *Escherichia coli*, *Staphylococcus aureus* and *Citrobacter* spp among the SCD participants. Antimicrobial sensitivity patterns depicted *Escherichia coli* as sensitive to nitrofurantoin and gentamicin while *Citrobacter* spp. was sensitive to Nitrofurantoin. *Staphylococcus aureus* was sensitive to cotrimoxazole with all three isolates resistant to ampicillin. 8.5% of the participants had asymptomatic bacteriuria (ASB) and was more in females (66.7%) than in males (33.3%) and in SS genotype (83.3%) than in SC genotype (16.7%). The research found the prevalence of ASB among SCD patients to be most common in females and SS genotypes. *Escherichia coli* was the predominant isolate and this isolate was susceptible to nitrofurantoin but highly resistant to ampicillin. Urine culture and sensitivity should be included in the clinical assessments of SCD patients and education and awareness on the importance of personal hygiene, particularly in sickle cell disease patients should also be encouraged.

Biography

Philip Apraku Tawiah is a Laboratory Scientist in the School of Pharmacy, University of Health and Allied Sciences (UHAS), Ghana. Apraku Tawiah holds a BSc. degree in Laboratory Technology from the University of Cape Coast (UCC), Cape Coast, Ghana and also a graduate of University of Ghana with a Master of Public Health (MPH). He has also pursued professional development programmes at the Department of Global Health, School of Public Health, University of Washington, USA in the following courses; Introduction to Epidemiology for Global Health, Clinical Management of HIV and Leadership and Management in Health. He is a young researcher with three publications. Mr. Tawiah's area of research are infectious and non-communicable diseases. He currently completed a project on Hepatitis B virus infection and associated risk factors among medical laboratory science students. Mr. Tawiah seeks to do his PhD degree in Epidemiology and Biostatistics.

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