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## Antimicrobial resistance-mediated complications in wound infections in Accra, Ghana

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**Background:** Wound infection is a major global health problem because it poses serious complications that result in difficulty in treatment and wounds bacterial contamination are common hospital acquired infections causing more than 80% of mortality. The aim of this study was to identify common bacteria infecting five different types of wounds and their resistance to commonly used antibiotics.

**Methodology:** Clinical swabs were received from hospitals and/ or clinics and some were obtained directly from patients visiting the G2 Medical Laboratory from 2015 to 2018. Specimens were obtained from wounds including Buruli ulcer, lupus, surgical, diabetes and burns. Conversional method of culturing on CLED, BLOOD AND CHOCOLATE AGAR, incubated in an aerobic and anaerobic condition between 18 and 24 hours at 37°C. The microbial were identified through the gram staining and various biochemical reactions. Antibiotics sensitivity test was done for both gram negative and positive microbial.

**Results:** A total of 10629 specimen were analyzed and different types of bacteria were isolated, *Pseudomonas aeruginosa* was the most predominant pathogen isolated from all wound type infection: Buruli ulcer =3493 (32.9%); lupus =2180 (20.5%); surgical =2911 (27.4%); diabetes =1503 (14.1%); and burn =609 (5.7%). A total of microbial resistance n=9657. *P. aeruginosa* showed the highest rate of resistance to the tested antibiotics of n=5396 (55.9%): Gentamicin=963 (17.8%); amikacin=960 (17.8%); cefotaxime=813 (15.1%), ceftriaxone=850 (15.8%); ciprofloxacin=947 (17.6%) and levofloxacin=863 (16.0%) and other multidrug resistance strains identified were *Enterobacter spp.*, n=2105 (21.8%); *S. aureus*, n=974 (10.1%); *Klebsiella spp.*, n=571 (5.9%); *Proteus spp.*, n=356 (3.7%) and *E. coli*, n=255 (2.6%).

**Conclusion:** Among other pathogens, we found *P. aeruginosa* to be the predominant bacteria in all wound infections and also shows the highest resistance to all tested antibiotics. A fungal elements (*Aspergillus* there was also isolated but no susceptibility testing was done). This study indicates that wound infections are typically polymicrobial comprising both Gram negative and positive bacterial with increased multidrug resistance to commonly used antibiotics for treatment.

## Biography

Gershon Yao Sena Sekley is the Chief Executive Officer of G2 Medical Laboratory, a leading referral laboratory for most clinics and hospitals in Ghana. He helped establish G2 Medical Labs in 1997 with the sole vision of providing quality and accurate diagnosis service for both clients and healthcare professionals. Before then, he worked as a medical laboratory scientist and a senior supervisor in various establishments including The Trust Hospital (1990-1992), Swan Clinic (1992-1997) and, Mendel Medical Laboratory (1993-1997). During this period, Gershon has contributed to different research studies that involved Sickle cell disease, Prostate Disorder in adults, Sexually Transmitted Infections and Renal Disorders in Diabetic patients. Besides analyzing clinical specimen in the laboratory, he is into health advocacy using the electronic media e.g. radio, television as a platform to educate the nation on topics like, Breast Cancer, Prostate Cancer, Cervical Cancer etc and also educate corporate organizations and churches on healthy life style and if you do not find him in the laboratory working hard to find solutions to serve patients and physicians, he will be found in the Library reading, teaching colleagues and students. Currently he is involved with research and findings in various disciplines in the field of medicine and academia. He would be seen spending time with his family during his leisure time.

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