

JOINT EVENT

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Metallo-beta-lactamase producing *Acinetobacter* spp from clinical isolates at a tertiary care hospital in Accra, Ghana**Michael Adetokunbo Olu-Taiwo**
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One of the most pertinent issues in health-care institutions is the emergence and global spread of metallo- β -lactamase (MBL) producing bacteria of bla_{VIM}-, bla_{IMP}- and bla_{NDM}-types. MBL-producing-*Acinetobacter* has become a public health concern due to therapeutic treatment challenges associated with nosocomial infections. In Ghana, limited information is available on clinical isolates of MBL-producing-*Acinetobacter*. The aim of the study was to determine the prevalence of MBL-producing-*Acinetobacter* species in clinical isolates from the Korle-Bu Teaching Hospital, Accra. A total of 87 archived clinical isolates of *Acinetobacter* were collected from cultures of aspirates, urine, ear, eye and wound swabs. Susceptibility pattern was done by Kirby-Bauer disk diffusion method. Meropenem-resistant *Acinetobacter* isolates were screened for enzymes using modified Hodge test (MHT) and IPM+IPM-EDTA combined disc test (CDT). Additionally, multiplex PCR was used to determine MBL genes (bla_{VIM}-1, bla_{IMP}-1 and bla_{NDM}-1) in MBL-producing *Acinetobacter* isolates. *Acinetobacter* isolates showed high levels of antibiotic resistance to ampicillin (94.2%), amoxicillin-clavulanate (90.8%), amikacin (25.3%), cefotaxime (90.8%), cefuroxime (86.2%), ceftazidime (75.9%), co-trimoxazole (70.1%), ciprofloxacin (64.4%), gentamicin (72.4%), nitrofurantoin (92%) and levofloxacin (67.8%). A total of 84 (96.7%) of *Acinetobacter* isolates were multidrug-resistant. Out of 52 (59.8%) meropenem-resistant *Acinetobacter*, 3 (5.8%) were carbapenemase producers by MHT whilst, 23 (44.2%) were MBL producers by CDT. There was no statistical significance difference between the antimicrobial resistance pattern of MBL-producing and Non-MBL-producing (p-value >0.05). A total of 7 out of 23 (30.4%) MBL-producing-*Acinetobacter* harboured bla_{NDM}-1. Of these, 4 (57.1%) were from wound swabs, urine 2 (28.6%) and ear swab 1 (14.3%). However, no bla_{VIM}-1 or bla_{IMP}-1 was detected. In conclusion, MBL-producing-*Acinetobacter* isolates showed a high level of resistance to multiple antimicrobials. The detection of bla_{NDM}-1 amongst MBL-producing-*Acinetobacter* is a cause for concern and strict antibiotic usage and infection control measures should be instituted to prevent the spread of these resistance genes in our health-care institutions.

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