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### Detection of carbapenem resistant Gram-Negative Bacilli from infected wounds in Khartoum state-2014

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**Background:** Carbapenem family are from the recently synthesized beta-lactam antibiotics which used as last resort antibiotics for treating infections caused by multidrug-resistant Gram-negative bacilli and the resistant to them by Gram-negative bacilli have been developed, due to production of variety of carbapenemase enzymes and other mechanisms that significantly limits treatment options for life-threatening infections.

**Objective:** This study aims to detect carbapenem resistant Gram-negative rods from infected wounds in Khartoum state and the production of carbapenemase enzymes by the resistant isolates using phenotypic methods.

**Method:** 100 wound swabs were collected. All samples were cultured directly on blood and MacConkey agar, Cultures were examined macroscopically and microscopically, different standard biochemical tests were performed for identification of Gram-negative bacilli. Standard antimicrobial susceptibility testing to Meropenem antibiotic was done for all Gram-negative bacilli isolates, and Modified Hodge test was performed for the resistant isolates.

**Results:** 77 Gram-negative bacilli were isolated from 100 samples, the commonest pathogenic isolates were Proteus species (28%) followed by Klebsiella species (24%), Escherichia coli(20%), Pseudomonas species (17%), Enterobacter species(10%) and


Acinetobacter species(1%). 13% of the isolates were Carbapenem resistant, and 50% of the resistant isolates were positive for carbapenemase enzymes production using Modified Hodge Test.

**Conclusion:** the percentage of Carbapenem resistance is high. Pseudomonas species followed by Escherichia coli were the most carbapenemase producers. Modified Hodge test is simple method for detection of carbapenemase enzymes that can detect many types of carbapenemase but not all types and it does not specify the types. Further studies should be performed using larger sample size and other specific methods especially PCR.

#### Speaker Biography

Reem AbdElmoniem Dahab Khalil is a 24years old medical laboratory specialist (microbiologist), studied at UMST, Sudan and completed the master degree by the age of 23, both by excellent degree, and cGPA 4.85 out of 5 in the BSc. Now she is a lecturer in International University of Africa, Sudan and at the same time working at a hospital, she is a beginner researcher, and she is very interested in the research work, especially antimicrobials.

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