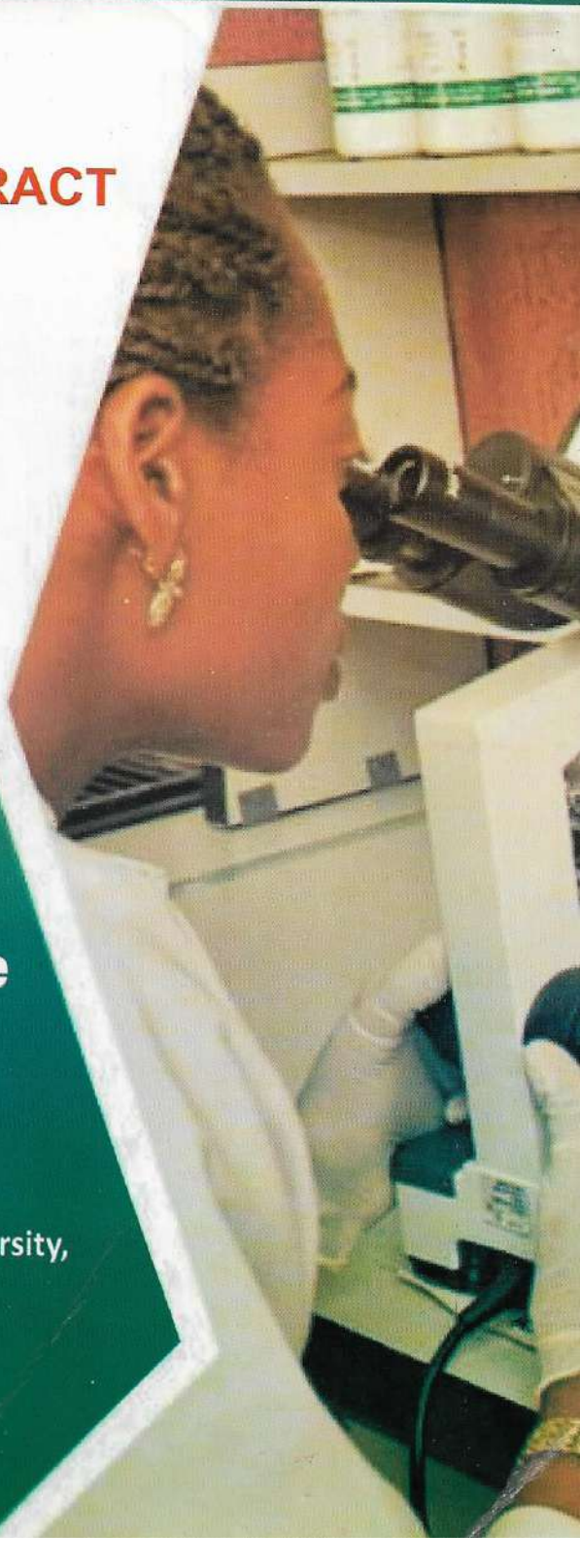
THE ORGANIZATION FOR WOMEN IN SCIENCE FOR DEVELOPING WORLD CONFERENCE

(BENSON IDAHOSA UNIVERSITY CHAPTER, BENIN CITY, NIGERIA)

BOOK OF ABSTRACT



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EXTENDED SPECTRUM BETA- LACTAMASE PRODUCTION IN GRAM NEGATIVE BACTERIA ISOLATED FROM URINARY TRACT INFECTIONS

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Abstract

Background: Antibiotics resistance in bacteria is on the increase especially resistance to extended-spectrum β-lactamase (ESBL) which are prevalent in Gram negative bacteria. Gram negative bacteria are responsible for 23-51% of hospital acquired infections (Marra *et al.*, 2006) of which majority of them are resistant to β-lactams by the production of β-lactamases or the expression of low-affinity penicillin binding protein (PBP2a).

Method: Mid stream urine were collected from patents with suspected UTI from both out-patents and patients admitted to the hospital in Benin city. The isolates obtained were identified by standard morphological and biochemical test. The antibiotic susceptibility testing was determined as described for disk diffusion on Muellar Hinton agar. All the isolates were tested for their ability to produce β-lactamase using the Perret's iodometric assay as modified by Workman and Farrar (1970) and TEM and SHV genes were detected by polymerase chain reaction (PCR)

Results: Gram negative bacteria such *Escherichia coli* (43.33%), *Klebsiella* sp (33.33%), *Pseudomonas* sp (6.66%) and *Proteus mirabilis* (16.66%) were obtained from urine samples.

All isolates tested were resistant to Tetracycline, Cloxacillin, Ciprofloxacin, Amoxycillin-clvulanic acid, and Ceftazidime. 20% of the bacterial stains were resistant to four antibiotics while 66.67%, 26.67% and 6.67% of the bacterial isolates were resistant to three, five and six antibiotics respectively. All *E. coli*, 10(100%) were identified to carry bla(TEM) and bla(SHV) beta-lactamase genes. 66.6% and 100% Klebsiella species carried bla(TEM) and bla(SHV) genes. Six *P. mirabilis* strains carried bla(SHV), while four *Pseudomonas* species carried bla(TEM)

Conclusion: β-lactamase producing Gram negative bacteria were detected from UTI

Keywords: UTI, *Escherichia coli,* β-lactamase, Antibiotics

COMPARISON BETWEEN WENNER ALPHA AND WENNER-SCHLUMBERGER ARRAYS GEOELECTRIC SUBSURFACE IMAGING IN OLUKU, OVIA NORTH LOCAL AREA EDO STATE, NIGERIA.

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Abstract

Background: WennerAlpha and Wenner-Schlumberger Arrays were used to determine the subsurface resistivity distribution from a 2-D imaging survey and to determine the tomography/images to give information about lateral changes in the subsurface resistivity, from these measurements the true resistivity of the subsurface was determine by inversion of the measured apparent resistivity values using computer inversion software (RES2DINV). From the images obtain, it was carefully observed that, different arrays used to map the same region can give rise to very different contour shapes. The Wenner Alpha array has relatively poor horizontal resolution as the electrode spacing is increased by virtue of its small geometric factor and has the greatest signal to noise ratio. The Wenner-Schlumberger array shows high resistivity values as a result of its high geometric factor which is especially obvious as the electrode spacing increases

Method: Wenner Alpha and Wenner-Schlumberger arrays of electrical resistivity method were used to map the subsurface electrical resistivity distribution at university of benin golf course oluku, Edo State Nigeria. Where the resistivity changes in the vertical and horizontal directions along the survey area was determined. 2-D surveys are carried out using a large number of electrodes, 25 or more, connected to a multicore cable to an electrical switching unit and a laptop connected to it to take readings.

Result: Different arrays used to map the same region can give rise to very different contour shapes. The Wenner Alpha array has relatively poor horizontal resolution as the electrode spacing is increased. By virtue of its