

10<sup>th</sup> International Congress onCLINICAL VIROLOGY, FUNGAL INFECTIONS  
& INFECTIOUS DISEASES

December 04-05, 2017 Dubai, UAE

**Extended spectrum beta-lactamase producing bacteria: Molecular studies and the effects of local remedies**Ohalete Chinyere Ngozi<sup>1</sup>, Obiajuru I O C<sup>1</sup> and Amadi E S<sup>2</sup><sup>1</sup>Imo State University, Nigeria<sup>2</sup>Federal University of Technology, Nigeria

Molecular studies of ES $\beta$ L-producing bacteria isolated from clinical samples was determined as well as the effects of medicinal plants on the isolates. Antimicrobial resistance profile was determined by the Kirby-Bauer technique. Phenotypic expression of  $\beta$ -lactamases production was performed by the double disk diffusion method. Genomic DNA extraction was by alkaline lysis method and hybridization effected with primers of the three  $\beta$ -lactamases genes, TEM, SHV and CTX-M. The isolated DNA and plasmids were analyzed by the agarose gel electrophoresis. Extraction of the active components from plant material was conducted. Effects of the plant extracts on ES $\beta$ L producing bacteria and the minimum inhibitory concentration were also determined. The results of screening the isolates with 12 antimicrobials showed that the isolates expressed high resistance rates. Examination of clinical samples showed higher prevalence of multiple antibiotic resistant (MAR) *Escherichia coli* (50.3%) than *P. aeruginosa* (43.3%) and *Klebsiella* species (36.6%). The prevalence of ES $\beta$ L-producing isolates was highest (67.6%) amongst *E. coli* than *Klebsiella* species (64.7%) and *P. aeruginosa* (57.7%). Gel electrophoresis of the amplified (PCR) genomic products showed that 36.7% were positive for TEM, 66.7% for SHV and 23.3% for CTX-M genes. The highest growth inhibitory effect was exhibited on *E. coli* and *Klebsiella* species by, *Ocimum gratissimum* and on *Escherichia coli* by *Xylopiya aethiopica*. The minimal inhibitory concentrations of the selected medicinal plant extracts on the test bacterial isolates were higher for ES $\beta$ L-bacteria than for non-resistant isolates. Extracts of commonly used medicinal plants in Imo State, Nigeria, such as those used in the present study are capable of inhibiting growth of MAR and ES $\beta$ L-producing bacteria. Therefore there is need for further investigations in terms of toxicological studies and purification of active components with a view to exploiting the plants in novel drug development.

ohaletechinyere@gmail.com