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## The role of methicillin-resistant *Staphylococcus aureus* in clinical infections in Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife, south western Nigeria

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Methicillin-resistant *Staphylococcus aureus* (MRSA) is a major problem worldwide causing hospital acquired and community infections. The spectrum of infections is manifold and is associated with worse outcome. In Nigeria, the incidence of MRSA has been on the increase thereby increasing concerns because of the linked increase in morbidity and mortality rates. There is still paucity of current information on MRSA in patients in Africa and treatment options available compared to the developed world. This cross sectional based study was conducted to determine the prevalence of Methicillin-resistant *Staphylococcus aureus* from 246 clinical samples collected at a tertiary care hospital, its antimicrobial susceptibility, spectrum of infections and the associated risk factors. Standard procedures were used for isolation, screening and susceptibility testing. The result showed that 41 (40.2%) out of 102 *S. aureus* isolated were methicillin-resistant while 61 (59.8%) were methicillin-sensitive. The prevalence rates of MRSA for male and female group were 37.3% and 43.1% respectively. 30 (73.2%) methicillin-resistant *S. aureus* isolates were obtained from inpatients while 11 (26.8%) were from outpatients. MRSA were significantly isolated from the orthopaedic ward (OR=3.36; P=0.031) and the antenatal ward (OR=8.33; P=0.037). High resistance rates were exhibited by MRSA isolates to cefotaxime (102, 79.4%) and clindamycin (102, 49%) except to gentamicin (102, 27.5%) and chloramphenicol (n=102, 28.4%). 32 (78%) out of 41 MRSA isolated were multidrug resistant. All isolates (MRSA and MSSA) were susceptible to vancomycin with MIC values ranging from 2.1-0.12 µg/ml. This study showed a high prevalence of MRSA in clinical infections that were resistant to treatment options in Ile-Ife. Admission to antenatal and orthopaedic wards was a predictor for MRSA infection in the hospital. In spite of reports that vancomycin resistant *Staphylococcus aureus* is increasing, it is yet to be a problem in the hospital as it remains a drug of choice for the treatment of MRSA and multidrug resistant *Staphylococcus aureus* infections.

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## Antibacterial activity of *Moringa stenopetala* against some human pathogenic strains

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An emerging of antibiotic resistance brings most serious public health problems. It is therefore, important to look for more effective, safer and less toxic alternate options of treatment. The aim of the present study was to investigate antibacterial activity of *Moringa stenopetala* against some human pathogenic bacteria using disk diffusion method and agar dilution for minimum inhibitory concentration. The result revealed that, most of the plant extracts had antibacterial activity. *Staphylococcus aureus* was found to be the most susceptible bacteria to crude 80% methanol extract of seeds and ethyl acetate extract of root barks with inhibition zones of 18.66±0.88 mm and 16.00±1.15 mm and minimum inhibitory concentration of 1.25 mg/ml and 2.5 mg/ml respectively, whereas *Pseudomonas aeruginosa* was the most resistant bacteria to all of crude extracts. Similarly, *Staphylococcus aureus* was the most susceptible bacterial strain to chloroform fraction with inhibition diameter of 28.00±0.57 mm and minimum inhibitory concentration of 0.31 mg/ml, while *Pseudomonas aeruginosa* was the most resistant strain with inhibition zone of 9.66±0.33 mm and minimum inhibitory concentration of 10 mg/ml respectively. In conclusion, this study not only proves antibacterial activity of *Moringa stenopetala*, also provides a scientific basis for their traditional use. Pure chemical compounds and antimicrobial activity against many fungi and bacteria should be studied to use them as sources and templates for synthesis of drugs to control infectious diseases.

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