

Molecular characterization of methicillin resistance gene among *Staphylococcus aureus* isolated from poultry farms in Kaduna, Nigeria

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Statement of Problem: Zoonotic transfer of resistance genes has been reported as one of the major causes of increased community associated methicillin resistance *S. aureus* (CAMRSA), which has contributed to high hospital visit, mortality and morbidity in clinic.

Aim: This study evaluates the occurrence of *S. aureus* encoding MecA gene in poultry birds from Kaduna metropolis.

Methodology: sample collection was carried out using standard epidemiological procedure, *S. aureus* isolation, identification and biochemical test were carried out using standard microbiological methods, antibiotic susceptibility testing was carried out using disc diffusion agar while molecular analysis was carried out using PCR techniques.

Results: A total of 600 poultry samples from 300 layers and 300 broilers were randomly collected from 4 poultry farms for evaluation. Using Microgen biochemical kit 27.3% of the samples collected yielded *S. aureus*. Using disc diffusion method 37.2 % (61) of the *S. aureus* were resistant to oxacillin. The resistance profile of the oxacillin resistant isolates showed that the isolates were highly resistant to tetracycline (88.5%), ciprofloxacin (80.3%), mildly resistant to cotrimoxazole

(32.8%), vancomycin (31.1%) and susceptible to amoxiclav (93.4%), cefoxitin and gentamicin (97.7% respectively). High percentage of the isolates 34.4% (21) harbored the *MecA* gene that amplified at 162 base pair while none of the isolates harbor *MecA* gene with 500bp.

Conclusion: This study reports the presence of MDR *S. aureus* encoding *MecA* gene among *S. aureus* isolates evaluated from poultry farm in Kaduna metropolis, hence this calls for concern as poultry products serves as means to fast dissemination of livestock and community associated methicillin resistant *S. aureus* as high percentage of poultry farmers, abattoirs and meat vendors carries out their activity without veterinary nor government control.

Biography

J A Onaolapo is a Professor of Pharmaceutical Microbiology at the Department of Pharmaceutics and Pharmaceutical Microbiology, Faculty of Pharmaceutical Sciences, Ahmadu Bello University, Zaria Nigeria. He rose from the post of an Assistant Lecturer in 1979 to the rank of a Professor in 1996. He had BSc in Pharmacy with Hon. Second Class Upper division, ABU, Zaria in the year 1977; MSc in Pharmaceutics, ABU, Zaria, 1982 and a PhD in Pharm. Microbiology, Aston University, Birmingham, UK in 1986. His area of focus has been bacterial drug resistance. He has published over 200 scientific articles both in local and international journals. He has supervised over 30 PhD students in the field of Pharmaceutics and Pharmaceutical Microbiology, over 50 MSc and 100 undergraduate students. He has also carried out researches on finding antibacterial drugs from natural products.

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