

Assessment Of Methicillin Resistance And Toxin Associated Genes In Staphylococcus Species Isolated From Two Selected Pig Farms In Ogun state

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Abstract

Swine especially pigs have been reported to harbor methicillin-resistant *Staphylococcus* species and have become a source of a novel and rapidly emerging infection in humans. This study was therefore, designed to investigate methicillin resistance status, susceptibility and exfoliative toxin-encoded genes in *Staphylococcus* species isolated from pigs. Hundred and fifty (150) samples consisting of 50 anal, nostril and environmental swabs were collected at Ode Remo and Sapade in Ogun state after obtaining ethical clearance. These were transferred into transport medium and transported to Microbiology laboratory of Babcock University. The samples were processed and organisms isolated following Microbiological procedures. The isolates were identified to species level by Matrix Assisted Laser Desorption Ionization Time of Flight Mass Spectrometry. The phenotypic detection of methicillin resistance and susceptibility of the isolates to selected antibiotic classes were evaluated by agar diffusion and interpreted according to CLSI, 2001. Exfoliative toxin-encoding genes (*eta* and *etb*) in the isolates were screened by Polymerase Chain Reaction (PCR). The data were analyzed by descriptive statistics (frequency). Fifty (50) staphylococcal strains were isolated from anus (28), nostril (17) and environment (5) of which *Staphylococcus sciuri*(23), *Staphylococcus cohnii*(11), *Staphylococcus piscifermentas*(7), *Staphylococcus carnosus*(1), *Staphylococcus condiment* (3), *Staphylococcus xylosus*(2), *Staphylococcus Kloosii*(1), *Staphylococcus pasteurii*(1) and *Staphylococcus succinus*(1). Methicillin resistance was detected in 12 strains *S. xylosus* (1), *S. kloosii* (1), *S. picifermentas* (2) and *S. sciuri* (8) with phenotypic method while none of the strains were positive by molecular counterpart. Susceptibility to other antibiotics indicated that all the strains were resistant to ceftazidime. *S. sciuri*(23), *S. cohnii*(11), *S. piscifermentas*(7), *S. carnosus*(1), *S. condiment*(3), *S. xylosus*(2), *S. kloosii*(1), *S. pasteurii*(1), and *S. succinus*(1). All the strains were

declared negative for exfoliative toxin encoding genes after several trials in PCR.

Methicillin resistance is absent among the strains studied and the resistance patterns observed indicated that the pattern of resistance predominantly found in clinical isolates are also emerging in the animal husbandry. Hence, setting up antibiotic surveillance system is necessary to minimize this trend.

Keywords: Staphylococci, exfoliative toxin, Methicillin, Matrix Assisted Laser Desorption Ionization Time of Flight Mass Spectrometry, Polymerase Chain Reaction

Biography: Balogun Olalekan blessing he is a second year PhD student in federal University technology in Akure, he was a student but because of his academic performance he was retained as graduate assistant in Joseph Ayo Babalola University which he now lectures. He has published seventeen papers in reputable journals

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