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RESEARCH ARTICLE
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16S rRNA Profiling of Nine Global New Strains of Staphylococcus aureus Isolated from Clinical Specimens in Basrah Province, Iraq

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ABSTRACT

Background: Staphylococcus aureus is familiar as a common pathogen. It is found worldwide and is a leading cause of disease. Many methods have been used for identifying the associated strains in clinical specimens. Sequencing by 16SrRNA methods is achieved in identification.

Methods: A total of 300 clinical swab samples were collected from diabetic foot infected and hemodialysis patients who were admitted to Basrah General Hospitals during the period from March-2018 to February 2019. Bacterial isolates were identified and sequencing was done by using a Vitek®2 system and 16SrRNA with specific primers for Staphylococcus genus.

Results: Thirty-six Staphylococcus species comprised 21 (58.3%) isolates determined in diabetic foot patients, while 15 (41.7%) were identified from hemodialysis patients. The 24 isolates were identified as S. aureus. The 16SrRNA showed the nine strains of Staphylococcus aureus isolates (No.1,2,4,6,8,9,17,25 and 26) had many differences when compared with their reference strains. These isolates were reported as new global separated strains and published by the National Center for Biotechnology Information (NCBI) and European Nucleotide Archive (ENA), as Staphylococcus aureus TSH-Basrah 01, TSH-Basrah 02, TSH-Basrah 04, TSH-Basrah 06, TSH-Basrah 08, TSH-Basrah 09, TSH-Basrah 17, TSH-Basrah 25 and TSH-Basrah 26 strain under accession number (MN982864.1, MN982865.1, MN982866.1, MN982867.1, MN982868.1, MN982869.1, MN982870.1 MN982871.1, and MN982872.1) respectively.

Conclusion: Nine global strains of S. aureus were detected from clinical specimens in Basrah. The result of 16S rRNA has given a clear picture of the significance of the Vitek ® 2 system that was used for the identification of S aureus from clinical samples.

Keywords: *Staphylococcus aureus, 16SrRNA, new isolates, diabetic foot, hemodialysis.*