



Cytotoxin Production and Slim Layer Formation by Methicillin-Resistant *Staphylococcus aureus* Isolated from Diabetic Patients

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Authors

Hussein K.A.¹ PhD

Madhi K.S.² MSc

Al-Mayyahi Z.A.³ MSc

Al-Ammar N.A.⁴ PhD

Abbas B.A.^{5*} PhD

Faraj A.H.⁶ MSc

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ABSTRACT

Aims Methicillin-resistant *Staphylococcus aureus* frequently causes infection of diabetic foot ulcers. However, no investigations have investigated the connection between methicillin-resistant A, perivascular tissue neoplasia, and delayed healing of diabetic foot ulcers. The purpose of this study was to genetically isolate methicillin-resistant from diabetic foot ulcer patients and define its function in the development of chronic ulcer lesions, the course of the disease, and antibiotic resistance.

Materials & Methods This experimental study was conducted on patients referred to the Diabetes Endocrinology Center in Al-Basrah, Southern Iraq, from 2019 to 2020. Only 31 isolates were found in the 80 samples of diabetic foot ulcer patients; 12 *Staphylococcus aureus* (38.7%) and 19 other *Staphylococcus spp.* (61.3%). All 12 samples of *Staphylococcus aureus* strains were confirmed by amplifying the universal 16SrRNA gene for pak2, MR30, CFSAN007896, and ST4.

Findings The mecA gene was 100% positive for the icaA gene (involved in biofilm formation) and 75% positive for the pol gene (involved in the manufacture of cytotoxins), revealing that all 12 *Staphylococcus aureus* isolates were methicillin-resistant.

Conclusion Pantone-valentine leukocidin has a high prevalence among MRSA strains isolated from diabetic foot ulcer patients that form biofilms, causing patients to have significant inflammation, illness progression, and challenging wound healing, which may result in lower limb amputations.

Keywords Diabetic Foot; Methicillin Resistance *Staphylococcus aureus*; Cytotoxin; Biofilm; Universal 16srDNA Gene

¹Department of Medical Sciences, College of Nursing, University of Basrah, Basrah, Iraq

²Department of Human Anatomy, College of Medicine, University of Basrah, Basrah, Iraq

³Department of Medicine, College of Medicine, University of Basrah, Basrah, Iraq

⁴Department of Microbiology, College of Medicine, University of Basrah, Basrah, Iraq

⁵Department of Microbiology, College of Veterinary Medicine, University of Basrah, Basrah, Iraq

⁶Public Health Laboratory, Sulaymaniyah, Iraq

*Correspondence

Address: Department of Microbiology, College of Veterinary Medicine, University of Basrah, Garmat Ali, Basrah, Iraq. Postal Code: 61004
Tel: +964-7801011322

Fax: -

basil.abbas@uobasrah.edu.iq

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