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MOLECULAR STUDY OF SOME VIRULENCE FACTORS AMONG *PSEUDOMONAS AERUGINOSA* RECOVERED FROM BURN INFECTION, IRAQ

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ABSTRACT

During a period of three months (September 2013 – November 2013), a total of 78 Transport swabs with Amies medium were collected from burned victims, who admitted to Burn Unite in **Al**-Hilla General Teaching Hospital. As right practice, all Transport swabs were collected before washing of the burned person and cultured the cetrimide agar plates for selective isolation of *Pseudomonas aeruginosa* isolates. The identification was then confirmed by automated identification VITEK 2 Compact system using VITEK 2GN CARD. Antibiotics susceptibility test was achieved according to CLSI 2012. Genes of some virulence factors like alginate biofilm biosynthesis gene (*algD*) and type III Secretion Toxin genes (*exoS, exoT, exoU, and exoY*) were investigated using specific primers sets by conventional PCR.

The data displayed that (19.2%) of samples gave positive culture for Pseudomonas aeruginosa. All suspected isolates were confirmed by VITEK 2 Compact system. Antibiotics susceptibility test results revealed that low level of resistance were showed for Ticarcillin, Amikacin, Piperacillin, Tobramycin, Norfloxacin and Ceftazidime in which the resistance percent were 6.6%, 6.6%, 6.6%,13.3%, 13.3% and 13.3% respectively. The resistances to other antibiotics were 26.6% for Netilimicin, 66.6% for Nalidixic acid, 80% for Cefuroxime, 86.6% for Cefoperazone. The results of genotypic investigation of some virulence factors gene revealed that, alginate biofilm biosynthesis gene (*algD*) were positive for (53.3%). Type III Secretion Toxin genes result were as follow: *exoS* (80.0%), *exoT* (26.6%), *exoU* (86.6%), *and exoY*(73.3%). As conclusion the results display that, P. aeruginosa isolated from burn infection have the ability to form biofilm which may impair entrance of mechanism of action of many antibiotics or make them need concentration more than the usual to do their work. The aminoglycoside still the best choice for treatment. Many isolates have more than one of type III Secretion Toxin which intensifies their pathogenicity.

KEYWORDS: Pseudomonas, Biofilm, Type III Secretion System, Toxin, Virulence