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Isolation and Molecular Identification of a *Serratia* spp. from Suspected Neonatal Sepsis in Intensive Care Unit (ICU) of Basra Province, Iraq

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ABSTRACT: The genus *Serratia* , a member of Enterobacteriaceae family, plays an important role in nosocomial infections. It is responsible for numerous hospital outbreaks occurring in immunodefficient patients,particularly newborns and patients in intensive care unit (ICU). The current study included the collection of one hundred and sixty blood samples from neonatal patients who are suspected of infection by late onset sepsis in the neonatal intensive care unit (ICUs) of Maternity and childhood hospital in Basra province . All samples were tested by using blood cultures to isolation bacteria and molecular identification the positive blood cultures . Result of this study showed 8(5%) samples were found with positive blood cultures while 152(95%) given negative blood cultures. after identification by using the biochemical test,all (8) bacterial isolates were identified as *Serratia* spp. In the second part of this study the 16SrDNA nucleotides sequencing data results for eight alignments of bacterial isolates were showed (5) isolates No1,3,4,7 and 8 similarity the isolates that have accession number in genbank (KT741023.1,KT260868.1,KJ130057.1,KT260868 and KJ877667.1) respectively as *Serratia marcescens* , while (3) isolates No2,5and 6 similarity the isolates that have accession number in genbank (KC191827.1, FJ811864.1and KC191827.1) respectively as *Serratia liquefaciens*.

KEYWORDS: *Serratia* , neonate , sepsis,16SrDNA .

I. INTRODUCTION

Serratia spp. a member of the Enterobacteriaceae are opportunistic Gram-negative , facultative and rod-shaped bacteria [1] . It's wide spreading in the environment and causes disease in vertebrate , invertebrate and plant hosts [2].Itcan recognize species: *Serratia marcescens*, *Serratia ficaria*, *Serratia liquefaciens*, *Serratia rubidaea*, *Serratia fonticola*, *Serratia odorifera*, *Serratia plymuthica*, *Serratia quinivorans*, *Serratia grimesii*, *Serratia proteamaculans*, and *Serratia entomophila* . All species except *S. entomophila* have been isolated from clinical samples [3].
Serratia spp. cause clinically problematic nosocomial infections including peritonitis, pneumonia, sepsis and wound infections because multi-drug resistance is widespread within the species [3,4,5] .The reservoir of *Serratia* spp. are the infected patients and can spread among patients occurs by transient carriage on the hands of nursing or medical staff. Handling of urinary catheters, wound drains, or tracheal tubes of infected[6].The study aims to investigating the *Serratia* spp. that play a role in the neonatal sepsis infection in the neonatal intensive care units (ICUs) by using isolation , biochemical and molecular identification .

II. MATERIALS AND METHODS

2.1.Patients :

A total of (160)blood samples were collected from neonatal patients who are suspected to have infection by late onset sepsis in the neonatal intensive care unit of Maternity and childhood hospital during April/2012 to April /2013 in Basra province .