

NOVEL ANTIBACTERIAL COMBINED AGAINST METHICILLIN RESISTANT *STAPHYLOCOCCUS AUREUS* (MRSA)

HABEEB S. NAHAR¹ & ANWAR KADHIM AL-SAFFAR²

¹Department of Microbiology, College of Sciences, Babylon University, Iraq

²Assistant Professor, Department of Microbiology, College of Medicine, Babylon University, Iraq

ABSTRACT

Background: *Staphylococcus aureus* is an opportunistic pathogen often carried asymptotically on the human body. Methicillin-resistant *S. aureus* (MRSA) includes those strains that have acquired a gene giving them considerable resistance to first line of treatment, methicillin and essentially to all other beta-lactam antibiotics. MRSA was first reported in United Kingdom on 1961 as a serious human pathogen and currently becomes resistant to almost all antibiotics, therefore treatment can be challenged.

Aim: This study was suggested and designed to evaluate the antibacterial effect of a new compound of Sidr extract (*Ziziphus spina-christi*-L, var. *inermis* Boiss) combined with Hydrogen peroxide (H₂O₂) against MRSA.

Methods: An aqueous extract of sidr leaves was prepared (62.5 g/L.) under suitable laboratory conditions (time, temperature and others necessary conditions). Hydrogen Peroxide (1.5%) was also prepared. MRSA isolates obtained from the Central Laboratory in Hilla, Babylon province. Those isolates have preliminary characterized as Methicillin (10 mg.) and Oxacillin (10 mg.) resistant but relatively sensitive to Vancomycin (10 mg.). The isolates were reidentified in our Lab. for confirmation using the diagnostic tests specific for MRSA. MRSA isolates were treated by an **appropriate concentration (the knowhow)** of a mixture included an aqueous extract of Sidr leaves (62.5 g/L.) and Hydrogen peroxide (1.5%) using wells in agar method.

Results: The results indicated that MRSA isolates investigated in this study revealed fully resistance towards both Methicillin and Oxacillin (no inhibition zones were seen after 24 hrs. incubation at 37°C) while these isolates exhibited a remarkable sensitivity towards Vancomycin (10 mg.) and the prepared combined, since the diameter of inhibition zone was 22 mm. and 21 mm. respectively.

KEYWORDS: Novel Antibacterial Combined, MRSA, Sidr Extract, H₂O₂