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Multi-drug resistance of MRSA isolated strains from healthcare, community and the distribution of fusidic acid MIC and zone of inhibition

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Abstract

The evolution of resistance to antibiotics is one of the most significant problems in Modern medicine, posing serious threats to human and animal health. Multidrug-resistant organisms(MDRO,S), including MRSA, vancomycin-resistant Enterococci (VRE)and certain Gram-negative bacilli have important infection control complications. From a previous study, an agar susceptibility testing was used to test all isolates against vancomycin, chloramphenicol, gentamicin, fusidic acid, erythromycin, streptomycin, Ciprofloxacin, cefotaxime and clindamycin. MRSA was detected using cefoxitin (30µg) disc and antibiotic susceptibility pattern was determined using the Kirby and Bauer disc diffusion susceptibility testing method and confirmed for fusidic acid and vancomycin by determination of minimum inhibitory concentration. The isolated MRSA strains showed multiple drug resistance pattern as 42% for IPHA-MRSA, 34% for OPHA-MRSA and 23% for CC-MRSA. The distribution of strains of IPHA, OPHA and CC-MRSA compared with the MIC and zone size of fusidic acid showed that the highest number of isolates were distributed about the highest MIC values for IPHA-MRSA(16, 8, 4mg/L), OPH-MRSA (8, 4,2mg/L) and CC-MRSA(8,4mg/L). These results showed high multi-drug resistance for all MRSA isolated strains. Interpretative zone of inhibition for fusidic acid and vancomycin was based on the British Society for Antimicrobial Chemotherapy (BSAC) (Anon-2010/2013) guidelines. Standard international interpretation criteria for zone size for fusidic acid should be addressed.

Biography:

Said Wareg E has expertise in research studies in Medical Microbiology and related subjects. One of his interests is bacterial resistance to antimicrobials especially MRSA. Currently, he is the Director of newly established Scientific and Consultancy Research Centre in Nalut University/ Libya, looking forward to building mutual and bilateral partenship cooperation with national or international institutions for the benefit of the two parties.

Speaker Publications:

1. Wareg S E, Foster H A and Daw M A; "Antimicrobial susceptibility patterns of Methicillin-Resistant Staphylococcus aureus isolates collected from healthcare and community facilities in Libya show a high level of resistance to fusidic acid"; Journal of Infectious Diseases and Therapy/(2014) 2:189.

2. Wareg S E and Alazzabi A A; "Evaluation of students' knowledge at Nalut Medical Technology College concerning misusing of antibiotics and its consequence"; University Bulletin(University of Zavia)/ (2017) -19:2.

7th World Congress and Exhibition on Antibiotics and Antibiotic Resistance; London, UK- March 16-17, 2020.

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