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Maha Haggag et al., J Clin Trials 2015, 5:3
http://dx.doi.org/10.4172/2167-0870.S1.007

International Conference on
Clinical Trials

July 27-29, 2015 Orlando-FL, USA

Assessment of MIC by E test of ocular antibiotics used for treatment of patients with keratitis and postoperative ocular infections

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Infection of the eye results from either the acquisition of a virulent microorganism or uncontrolled growth of an existing organism because of lowered host resistance. In order to detect emergence of antimicrobial resistance it is important to use a practical, consistent, and standardized method that will allow comparison with national or international monitoring data. Results from antimicrobial susceptibility tests should be reported quantitatively rather than qualitatively, providing the minimal concentration of an antimicrobial required to inhibiting the growth of the Microorganism (MIC). This approach would facilitate the detection of small changes in antimicrobial susceptibility over time

Aim: The primary aim of this study is to validate the performance accuracy and utility of E test and verify the reproducibility of this convenient predefined gradient methodology for MIC determination in comparison with reference method as broth microdilution.

Evaluation: Evaluation is by testing the sensitivity of selected ocular bacteria; *Staphylococcus aureus*, coagulase negative *Staphylococcus* (CNS), *Klebsiella* and *Pseudomonas aeruginosa* to three antibiotics; gentamycin, ciprofloxacin and gatifloxacin by three independent assays; disk diffusion, broth microdilution and E-test.

Results: The MIC of gentamycin and ciprofloxacin measured by brothmicrodilution & E- test showed significant correlation for all selected bacteria except for CNS. While gatifloxacin showed no significant correlation between the two methods for all *Staphylococci* and Pseudomonas. MIC of the three antibiotics measured by broth microdilution & E- test for *Klebsiella* showed significant correlation.

Conclusion: This study has clearly indicated that each susceptibility test has inherent advantages and limitations. Agar-based methods like E test and the agar disk diffusion represent valid methods compared to the broth microdilution method.

Biography

Maha Haggag has completed her MD, PhD in 2004 from Cairo University School of Medicine. She is researcher and the Head of Allergy Lab in the Microbiology and Immunology Unite, RIO. She has Patency application No.2006040138 at the Academy of Scientific Research and Technology, Egypt in 2006, the subject of Patency is Natural Allergenic Extracts for Specific Immunotherapy as Eye Drops. She published few papers in Egyptian and International Journals with poster presentation in the Unite for Sight Conference at Stanford University USA in April 2007. She worked as Exchange Visitor in the University of Florida, Gainesville, FL, USA for 6 months in 2014.

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